

## Appendix K

### **The Method of Project Management/Accounting Using Reversed Journal Position Format**

### **- The Method to Create a Co-operative Thinking and Working Place Among Science/Engineering and Management/Accounting People -**

by

**Tatsunori Kawai**

**Postgraduate Course of Information Management Course at Asahi University  
1851 Hozumi-cho, Motosu-gun, Gifu pref, Japan E-mail: tatsu@alice.asahi-u.ac.jp**

#### **Abstract**

Before now, there has been a need to create a more creative and co-operative thinking and working place among science/engineering and management/accounting people within the organization of companies and government offices using terminology specific to each group or a standardized form. However, there is almost nothing written to fill this need. The purpose of this paper is to fill this need.

The ideas in this paper use the ideas of the "Advanced Project Management Method (DTCN/DTC Method)," developed by Doctor Esaki. The idea can be used from the upper stream of project management and its accounting process (i.e. Seed Money and project creation activity phase, Market Creation, Project Planning and Project Planning Process.) to the final evaluation of the results and forward feed process for the conventional project management which begins with the WBS and the Gantt Chart.

### **1. The structure of this paper**

This paper consists of the following sections:

- ( 1 ) The structure of this paper
- ( 2 ) Outline of the Steplist Method (the method which creates faultless procedures using relations of inputs and outputs) based on the DTCN/DTC method which forms the core concept of this paper
- ( 3 ) Comparison of Conventional and Reversed B/S, P/L, and Accounting Journal Formats
- ( 4 ) Comparative explanation using the Steplist Method which includes conventional accounting journal expressions and reversed type expressions
- ( 5 ) What we can see using the new expressions
- ( 6 ) What we can do when we use the new knowledge effectively
- ( 7 ) Summary

### **2. Outline of the Steplist Method (the method which creates faultless procedures using relations of inputs and outputs) based on the DTCN/DTC method which forms the core concept of this paper**

Figure 1 shows an example of how to extract the cause-and-effect relationships of the elements of how to cook rice well, using the four frames of inputs and outputs as the basis of the Steplist concept.

Using the four frames of inputs and outputs as the basis of the Steplist concept, and the idea of collecting the elements, this technique creates the process procedure and assuring conditions steps for realizing the target result, which is then written in the eight phases Steplist frames in Figure 2.

With this procedure, we can create rational and step-wise operations, procedures and their conditions for decision-making without faults. If necessary, it is possible to add more phases or steps to eight basic phased Steplist.

When complete, we can extract appropriately divided phases and their contents before arranging a Gantt chart.

### **3. Comparison of Conventional and Reversed B/S, P/L, and Accounting Journal Formats**

Conventional B/S and accounting journals have debits on the left and credits on the right side.

However, “financial resources to lend” (i.e. capital) should be listed as a “credit” as first input. This means that it is easy understandable for those who write from left to right that credits should be on the left and debits should be on the right in the input and out put sequence.

For example, capital (a credit) is the first requirement for cash (a debit) on a B/S. This means that capital (a credit) and the company management policy stand as input, and cash for use to implement the

company's management policy stands as output.

In another case, in the accounting purchase journal, conventional journals put cash for purchases on the right and the cost of materials on the left. But, in terms of a cause-and-effect (or input and output) relationship, if cash is used for purchase as input, then material is available as output.

#### **4. Comparative explanation using the Steplist Method, which includes conventional journal expressions and reversed type expressions**

Figure 3 indicates the transfer relations in the accounting of manufacturing industries. This flow chart explains the cause-and-effect relationships in accounting journals.

Figure 4 shows the comparison between conventional methods and the new method using a B/S with reversed debit–credit, i.e. sequence of credit-debit or input–output relationships.

Figure 4 describes the following:

##### **(1) I-1 “Elements of transfer relations”**

This relationship is the same as at the top of Figure 3. The horizontal arrows show each step of the process. During the process, the steps shown in I-2 below, using “conventional (ordinary) journal expressions,” will be followed. Therefore, the following accounting items are entered.

##### **(2) I-2 “Conventional accounting journal method”**

Following are simple explanations of journal entries:

1. Material purchased by cash.
2. Material used as a direct material cost.
3. Finished products moved to inventory.
4. Products shipped from inventory for sale.
5. Cost of sales listed on P/L.
6. Sales amount listed on P/L.
7. Products sold on credit.
8. Accounts receivable collected in cash.

The above items are entered into the journal after the actions have taken place. Debits and credits are marked 1R-2L, 2R-3L, 3R-4L, etc.

##### **(3) I-3 “Conventional method of B/S and P/L”**

This line shows the expressions used in conventional B/S and P/L.

The explanation of this line contents will be described in -2 “New expressions of B/S and P/L using the relation of input and output” to compare with this I-3.

(4) -1 “New expressions in accounting journals using the left to right relationship of input and output”

This line shows the sequence of credits and debits, i.e. reversed positions of debits and credits of I-2.

It is easy to understand because this is the sequence of writing from left to right (sequence of cause-and-effect or input-output relationships).

(5) -2 “New expressions of B/S and P/L using the relation of input and output”

This line shows the reversed position of debits and credits on the B/S and P/L of I-3.

From I-3 (conventional expression), we understand that we can calculate profit and loss from the comparison of “cost of sales + sales and general & administration cost” and sales (the P/L in No. 6 column).

In the relationship of input and output of -2, the P/L in No.6 column is not used for profit and loss results during the term of the operation, but is used for checking between planned profit and actual profit. Therefore, we can say the following:

Conventional B/S and P/L formats were useful and convenient for describing the macro scale of a company’s profits and losses when manual calculation without electronic computing systems was used. This type of P/L is useful in the law for a partner or other outside company. Now, it is just information about past performance within the company where we can now instantaneously calculate the current costs, sales circumstances, and the differences between plans or forecasts and results on a computer.

It is preferable for management action to use the -2 method, because, with the information of difference between plan and result, we can find the next step actions towards achieving the goal.

(6) -1 “The location where we understand the operation and requirement between the input and output”

This line indicates the place where the positive management action should be taken place, when the cross point of items (even numbers on line) change, and when the credits of previous steps change to debits of following steps (odd numbers on line). We will describe the details in III-2.

(7) -2 “Examples of positive management which should be done during the change in journal formats”

Following are examples where the actions of -1 will take place:

Before the arrangement of a management plan, arrange the relationship of purpose and measure expressed by [1] of the PMD (Purpose Measure Diagram), showing company policy. (First implement the QFD [2] for the possibility of quality requirement, if necessary.)

Arrange a management plan (idea) of how to spend cash in. This includes an operation plan, new product plan (including DTCN/DTC implementation plan), quality improvement plan, price/cost/profit reduction plan, and cost plan.

After approval, this becomes the final management plan.

Implement an effective material purchasing plan based on the financial management plan.

Protect materials from degradation by, for example, shortening the inventory time.

When shipping the materials from warehouse, arrange the material layout to minimize the excess material.

Avoid waste time by the allocation of operation process and schedule. To do that, send the material along with the work and scheduled instructions to the site. This stabilizes the operation.

Avoid defective products in the production process. Manufacture products with a minimum of process work.

Inspect the products. When defects are found, take preventive countermeasures to avoid similar cases as corrective action.

Protect the deterioration of inventory stocks. Reduce dead stock out costs.

Arrange the corrective plan after finding differences between actual costs and planned costs.

Implement a sales strategy with effective sales costs and high sales prices.

Compare the planned profits with actual profits. Take countermeasures based on the profit difference from this comparison.

Based on the sales plan, sell the products at the highest prices possible and sell the product timely to stabilize the factory work hoot.

Satisfy the customers' requirements and needs.

Make an agreement of short sales lead time. Also make an agreement on imposing interest in case of delayed payment.

Shorten the sales lead time.

Collect the accounts receivable as agreed on. If payment is delayed, impose interest penalties.

Arrange the report based on some standard to evaluate and make a decision based on the result.

Make decisions after evaluating the term's results.

These procedures are examples of what we should do during the change in journal formats. (We call it the operation to improve value.)

(8) -3 "Feed-forward"

This shows the path of feed-forward actions in -2. By following this path, it is possible to increase the effective action of -2. (It is possible to start the process at any step, not only from the beginning.)

(9) -4 "Feedback"

This shows the path of feedback actions in -2. By following this path, it is possible also to increase the effective action of -2.

We can describe contents of Figure 4 as above.

### **5. What we can see using the new expression**

What we can understand by reversing the positions of debits and credits on B/S and accounting journals.

To create valuable results in management accounting, it is necessary to improve the value of relationships effectively, efficiently and correctly when the journal items change or something changes through the input process from debit to credit. To do that, it is necessary to arrange effective operations and conditions. Through changes of these items, it is possible to manage the operation effectively, efficiently and correctly among the people concerned.

### **6. What we can do when we use the new knowledge effectively**

In management accounting, we have already described how we can see the effective operations and conditions required to improve value, when the journal items change or something changes through the input process from debit to credit. We can do the following with this approach.

With the PMD and DTCN/DTC method, we can establish and realize the company policy, and implementation plan combining financial management plan.

In order to achieve the desired goal by the end of the Steplist, it is necessary to know what to do at the start of the Steplist. To this end, it is important to set the targets of financial accounting and management accounting properly. Then, we can select efficient cost accounting items and suitable process steps.

By following the Steplist procedure, which describes cause-and-effect relationships, we can do both technical and financial simulations on a project, on the same paper or in the same place. Therefore, within an organization, both engineering (technical) staff and administrative (management or financial) staff can cooperate on information gathering and creative operations using their own specialized expressions, ideas, or terms.

Since people who are familiar with conventional expressions can return the results of the above process to a conventional expression using a computer, this new method can co-exist with the conventional method.

## 7. Summary

We understand that we could complete an understandable and easy-to-use map to clarify the cause-and-effect relationship as well as to understand what we can gain by doing specific actions among engineering and management personnel.

The bottom line is that we can gain a more effective project management and produce effective financial statements.

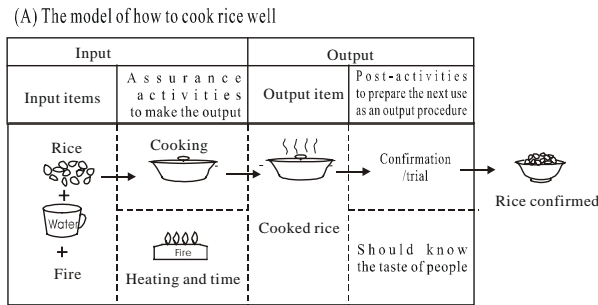
### References:

- (1) Michihiko Esaki, Advanced project management method (DTCN/DTC method). ASCII Publishers, 1997.
- (2) Yoji Akao, The introduction to quality development. Nikka Giren, 1990.

The following are references for the whole paper.

- (3) Shigeru Yamamoto, New accounting book, Dobunkan, 1984
- (4) Osamu Nishizawa, Cost accounting, Chuo Keizaisha, 1996
- (5) Takao Saito, "Reconsidering Contenlamen – accounting class 2," from Commemorative Reports Celebrating Professor Tetsuo Shimizu, Zaigakuka, Shiga University, 1995

Figure 1 Example of extracting the cause-and-effect elements relationships using elements of how to cook rice well



(B) Four boxes to extract all the elements of input and output for cause- and- effect relationships or procedures without any mistakes

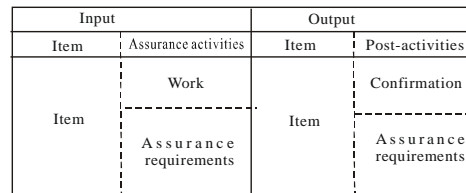


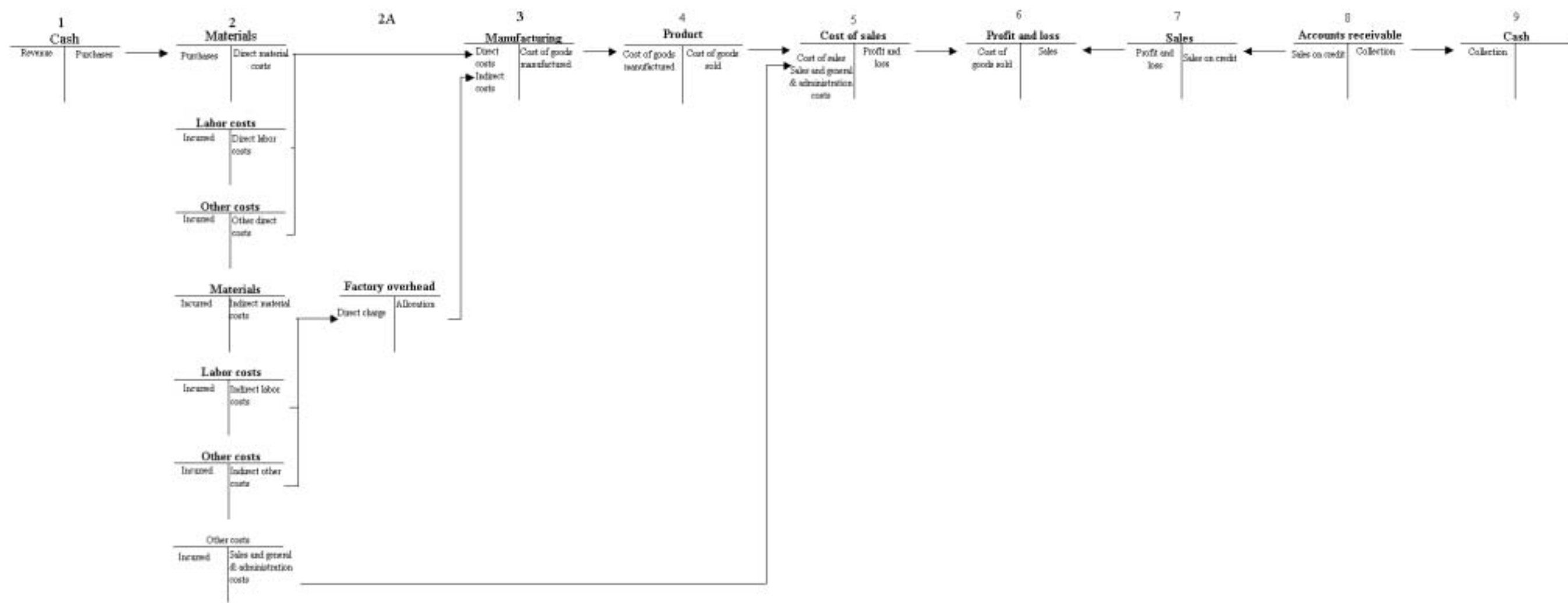
Figure 2 Form to extract development steps and operation items (procedures) to achieve the goal without any mistake (Step-List format)

Main theme \_\_\_\_\_ Responsible by \_\_\_\_\_ Date \_\_\_\_\_  
 Sub theme \_\_\_\_\_ STEPLIST (Phase decision making plan) Promotion committee \_\_\_\_\_

Section	Basic phase step	Step contents	Input		Output		Others Conditions				
			Item	Assurance activities	Item	Post-activities					
Inductive approach Phase to thinking about many things and decide what to do	1	Information collection (First stage to ideas)	→	→	→	→					
	2	Basic Idea	→	→	→	→					
	3	Breakdown structure (Structuring)	→	→	→	→					
	4	Information collection (Second stage to ideas)	→	→	→	→					
Deductive approach Phase to materialize the result of thinking	5	Basic matter (Basic design)	→	→	→	→					
	6	Detailed matter (Detail design)	→	→	→	→					
	7	Implementation to get objective result	→	→	→	→					
	8	Review	→	→	→	→					



Figure 3 Transfer relationships



(Note: This chart explains the transfer relationships. Therefore, it uses different expressions at step 2. The different expressions divide the accounting items into direct cost, indirect cost, sales and general & administration cost.)

Figure 4: The comparison chart between conventional B/S or accounting journals and those using the new expressions

