

6.3 Essential Conditions to Proceed with Design to Cost

6.3.1 Securing or Dividing the DTC Implementation Budget

6.3.2 Preparation of DTC Implementation Plan Document Using DTC-Method and an Effective Follow-up Utilizing Questionnaire Prepared in Advance

6.3.3 Preparation of Necessary Cost Verification Guidelines (Needed Especially for Contracts with the Government)

6.3.4 Confirming the Existence of the Basic Agreement of Materials Transaction Among Corporations

6.3.1 Securing or Dividing the DTC Implementation Budget

In order to implement a DTC, the budget for the DTC thinking activity (e.g. design man-hours) has to be clearly separated from the initial development budget.

The fundamental rules and significance are:

(1) Partition of the divided DTC implementation plan budget becomes a way to obligate the people involved in development to carry on suitable DTC activity, and to report the activity and its result. Use the method of DTC activity stated in this book.

(2) Obligation makes people proceed with DTC activity precisely within the given cost and time period because the DTC Method is already there. You can expect excellent results.

(3) When the public sector obliges corporations to carry out DTC activity, it is especially necessary to clarify this budget to allow the activities and their results to properly follow the contract. (Note 1)

(4) If you instruct the design group to design a DTC without separating the DTC budget, those in the design group will conclude that it is not possible to carry on the DTC. Remember, they are very busy with design work. Pressed for time, the design drawing will be released without going through a sufficient comparative study using DTC. (Note 2) If you still direct them to carry out a DTC without sorting out the budget, an inadequate DTC report will be prepared, and you will end up with an unbalanced report which will be troublesome and difficult to recover.

(Note 1) Take a look at what will happen without a conventional budget division within DTC activities:

- As you go along with research and development, let's say you come up with a new idea that can be implemented on time if certain adjustments are made. If the way of thinking of the conventional organization is to first ask "why?", you will be pursued for responsibility with the question "Why didn't you notice that in the beginning?", when you try to make the adjustments.

- Such a question will lead to a meaningless pursuit for responsibility and result in chaos, as described in Chapter 1 (Proper Use of Questions for Creative Thinking and Decision-making).

- Research and development is a process of newly generating or finding a way in an unknown field of study. If someone in the organization brings up the question "Why didn't you know that before you started?" during development, you will have no alternative but to apologize because you are being questioned about the past.

If the organization thinks in such a manner, those in research and development will come to prefer harmless research and development. As a result, creativity, the essence of research and development, will be lost in the organization.

- Therefore, creative development deserves repeated and open-minded examination within the progress of the development phase. Try to draw a cause and effect relationship: "We were able to carry out a creative examination using an adequate budget, and this new idea came up." "The budget was appropriate and we tried with our utmost effort to come up with something better. This was the best we could do (an attempt of examination will be recorded in this case)." Through such cause and effect relations, creative and proper development can be pursued.

(Note 2) The budget to implement a DTC is normally 10% of the design man-hours for a project that will be implementing DTC for the first time. According to the experience value, this rate of 10% can be lowered as one becomes more experienced. This 10% covers the time necessary to set rules and procedures, and the training period required to implement a DTC.

6.3.2 Preparation of a DTC Implementation Plan Document Using the DTC Method and an Effective Follow-up Utilizing Questionnaire Prepared in Advance

Once the budget of DTC implementation is confirmed, the implementation plan document will be prepared based on the budget. After approval of the document, steady implementation will be carried out.

Here are some important considerations for steady implementation.

(1) Prepare the cover of the implementation plan document as shown in Figure 6.3-1.

The cover page shows who requested the DTC implementation, who planned the implementation, and who will be responsible. The names of the organization and individuals will also be indicated from the start. Figure 6.3-2 is a table of contents. The cover puts the assigned officer under obligation to transfer responsibility to the next assigned officer if there is a change during the implementation of DTC. (In the case where the assigned officer changes, the maintenance method is: place the maintenance page just next to the page where the name of the newly assigned officer is indicated in the implementation organization on the implementation plan.)

(2) When implementing DTC for mass-production cost and development cost simultaneously, prepare separate implementation plan documents; then, relate them as you go along. The reason for this is that DTCs for mass-production cost and for development cost differ slightly in the concentration phase and focus in DTC activities. Confusion in records can be avoided by separating the documents. See Figure 6.3-3 for an example of the table of contents for the development cost.

(3) To draw up the documentation for a DTC implementation plan, first prepare the PMD for the DTC implementation suited to the project. Based on that PMD, make the steplist for the DTC activities. Use the steplist as the core and follow the lines of the Contents in Figures 6.3-2 and 6.3-3.

(4) If the organization is not used to implementing Design to Cost, first work on the DTC implementation for mass-production cost only in order to have practical experience of DTC.

(5) Within the documentation of the DTC implementation plan, prepare a predicted report form to reach the final target cost (see Figure 6.3-4), and include it in the interim report. Also prepare a list of key questions (see Table 6.3-1) for each phase. Use the above two so that an interim report portraying an effective DTC will be ready.

6.3.3 Preparation of Necessary Cost Verification Guidelines (Needed Especially for Contracts with the Government)

(1) Understanding and Objective

Implementation of DTC means that cost management will be done in advance as a pre-assurance.

In cases of contracts with the public sector, whether the contract money is appropriate can be determined by either of the following:

- A. The competitive bid price is fair and just.
- B. When lessons from past experience and the know-how of the company must be used, a contract will be made whenever necessary. In such cases, the appropriateness of the contract cost has to be proved in some way. A cost verification guideline is necessary in this case.

(2) Configuration

A Cost Verification Guideline will be prepared as an attachment to the DTC implementation plan document.

A Cost Verification Guideline will be made separately for a DTC for unit mass-production cost and a DTC for development cost, as with DTC implementation plan documents. The reason for this is so as not to bring confusion into the activities and records.

When implementing a DTC for private entities, prepare a standard cost estimate guideline as it is intended for announcement within the company.

6.3.4 Confirming the Existence of the Basic Agreement of Materials Transaction Among Corporations

In general, new and mutual transactions between corporations carry a Basic Agreement for Materials Transaction, as explained in the 3rd rule in Chapter 5.2.3. This agreement and a guideline, according to the Ministry of International Trade and Industry (Reference Material 5.2-3), are both necessary for carrying on just and fair cooperation activities between corporations. Therefore, arrange the Basic Agreement for Materials Transaction prior to the implementation of the DTC.

Usually, this basic agreement contains the relationship between A and B only. Hence, when there is a trading firm or corporation between the manufacturers, add a clause to the contract to the effect that the basic contract applies to C and so forth. Furthermore, when DTC is to be implemented for transactions with a foreign corporation, draw up a Basic Agreement in English in advance. Before making the agreement, cite the relationship of Offer and Acceptance. Come to a consensus beforehand.

Fig. 6.3-1 Sample of the cover for a DTC implementation plan document

Document No.	
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Development of AAA

Development cost

Unit production cost implementation plan of design to cost

Choose either one

Order side to proceed DTC	
Approved signature or stamp	
Assigned officer	

Revised year date

Original year date

Approved by	Checked by	Made by

BBB Co. Ltd.

Fig. 6.3-2 Table of contents of a DTC implementation plan document for unit production cost

Contents	
1.	The purpose of this document
2.	The purpose of this project
3.	Basic policy
4.	Definition of word
5.	Related documents and referenced documents
6.	Production/system WBS (show the objective structure of DTC)
7.	Target cost
8.	DTC organization
9.	DTC steplist
10.	The statement of each phase
10.1.	Planned curve of DTC status
10.2.	Gantt chart of DTC activities
10.3.	Report requirements of DTC activity report in each phase and periodic reporting time (including the reporting format)
Appendix	
1.	PMD of DTC implementation
2.	Others

Fig. 6.3-3 Table of contents of a DTC implementation plan document

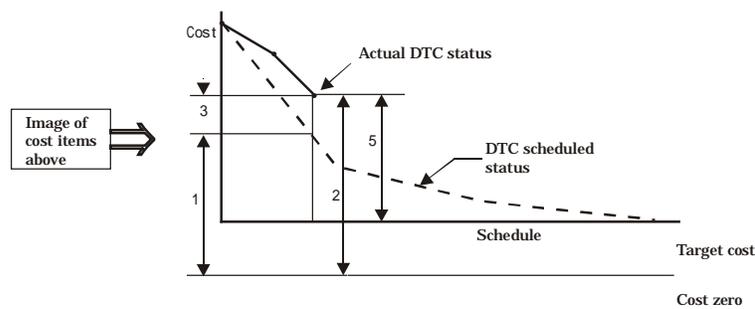
Contents	
1.	The purpose of this document
2.	The purpose of this project
3.	Basic policy
4.	Definition of words
5.	Related documents and referenced documents
6.	WBS and PMD
6.1	WBS of development objective
6.2	PMD of development activities (Note)
7.	Establishment of target cost
7.1	Target cost
7.2	Conditions for establishing the target cost
8.	DTC organization
9.	DTC steplist (DTC phased procedure)
10.	Statement of each phase
11.	Allocation of target cost for each phase and scheduled curve of DTC status
11.1	Target cost and estimation of present cost
11.2	Each target cost
11.3	Scheduled curve of DTC status
12.	Gantt chart of DTC activities
13.	The format to report DTC activity
14.	The procedure for solving the unexpected trouble or problems

Fig. 6.3-4 Format of predicted report to reach the final target cost

Summary of predicted report to reach the target cost

Scheduled date to report on DTC scheduled curve
 WBS No. _____ WBS name _____ Company _____ Date _____

Item	Contents																														
1	The result was how much more than the scheduled cost reduction value on DTC scheduled curve? More Less <u> </u> K Yen																														
2	How much cost reduction must occur before reaching the target cost? <u> </u> K Yen																														
3	(Answer if the cost reduction was not obtained as scheduled on DTC scheduled curve)																														
4	<u> </u> K Yen																														
5	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 40%;"></th> <th style="width: 10%;">No. of items</th> <th style="width: 15%;">Possible Cost Effect *1</th> <th style="width: 10%;">Realization %</th> <th style="width: 25%;">Effect × realization %</th> </tr> </thead> <tbody> <tr> <td>Unadopted item</td> <td></td> <td></td> <td style="text-align: center;">0 %</td> <td></td> </tr> <tr> <td>Adopted items</td> <td></td> <td style="text-align: center;">¥</td> <td style="text-align: center;">%</td> <td style="text-align: center;">¥</td> </tr> <tr> <td>Hopeful Item *2</td> <td></td> <td style="text-align: center;">¥</td> <td style="text-align: center;">%</td> <td style="text-align: center;">¥</td> </tr> <tr> <td>Before examination</td> <td></td> <td style="text-align: center;">¥</td> <td style="text-align: center;">%</td> <td style="text-align: center;">¥</td> </tr> <tr> <td>Total</td> <td></td> <td style="text-align: center;">¥</td> <td style="text-align: center;">%</td> <td style="text-align: center;">¥</td> </tr> </tbody> </table> <p>*1.Possible cost effect must be reported including G.C.I.P(In the case of in-house, net cost) *2.The hopeful item must include all predicted items, but must not include the risk cost.</p>		No. of items	Possible Cost Effect *1	Realization %	Effect × realization %	Unadopted item			0 %		Adopted items		¥	%	¥	Hopeful Item *2		¥	%	¥	Before examination		¥	%	¥	Total		¥	%	¥
	No. of items	Possible Cost Effect *1	Realization %	Effect × realization %																											
Unadopted item			0 %																												
Adopted items		¥	%	¥																											
Hopeful Item *2		¥	%	¥																											
Before examination		¥	%	¥																											
Total		¥	%	¥																											
6	Positive key action and its schedule to reach the target cost and its schedule.																														



Present cost is : _____ Yen less than scheduled cost status on this day.
 _____ Yen more than scheduled cost status on this day.

Table 6.3-1 (1/2) Example of key questions sheet for plan drawing phase

Key questions sheet up to end of plan drawing phase (NO.1)		Development WBS name	Contractor	Design	DTC	Order Side	Purch.	Design	DTC
	Item	Questions							
1	Target cost and present cost	1.State target costs and present costs. 2.State difference between them as a percentage.							
2	DTC theme list	1.How many DTC themes or ideas to be examined , do you have right now? 2.Have you made a WBS phased theme list ? Have you requested the theme or idea that the manufacturing and planning department want to examine ?							
3	Classification of trade theme and request from prod.	1.Have you classified the DTC/theme ideas for the trade study and requested ideas to be involved in the drawing from the production and planning departments ?							
4	Stagnation or not	1.Are there any problems in proceeding DTC work ? 2. Did you use PMD method to manage ?							
5	Cost status in each WBS	1. Have you made present cost status for each WBS by using price/ cost structure table ?							
6	High priority themes	1.By looking at the price/cost structure table of present cost, what WBS area cost can be effectively reduced by doing a DTC study ? 2. Have you made an "ABC" analysis chart ?							
7	Estimation method of present cost	1.Explain how you estimated present cost.							