DFSS VE

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The Development of pallet based on the DFSS Methodology and Value Engineering for Lighter Logistics

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Key Words : six sigma(), value engineering(7\tag{}), DFSS(), pallet(

Abstract

A steel pallet to carry lighter logistic articles is developed based on the DFSS(design for Six Sigma) methodology. Combining the conventional DFSS(Design For Six Sigma) methodology with that of VE(Value Engineering) is the novel feature of this paper to achieve maximum cost reduction. In this paper, systematical steps to achieve the required structural spec's are presented by conventional DMEDI(Define-Measure-Explore-Develop-Implement) process. To imply the target costing, evaluation of .functions consisting of the pallet has been performed by value methodology. Then best design concept is selected in the Explore step, following structural optimization utilizing FEM. Finally the performance of prototype is investigated by pilot test in the Implement step. The developed steel pallet is being commercialized in the fields of automated ware house.

가 가 가 DFSS: Design for Six Sigma **DFSS DMEDI** VE: Value Engineering 가 VE(Value Engineering) 1. 가 DFSS(Design for Six Sigma) 가 2. **DMEDI** 2.1 Define 가 가 (WHY?)

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가	-Pilot
Define フト ・	
	DMEDI
/	가 CTQ Explore
	, 가
(WHAT) 7 CTQ(Critical To Quality) . Y CTQ	가
X Explore	가 가 . DFSS 가 , 가
	3. VE
CCR -CTQ Flow Down-CTQ 7Measure Review2.3 Explore	3.1 VE Value Engineering
Concept - Concept プ†-Risk フ† - Explore Review2.4 Develop	value system , DFSS Value
Explore	Value = Function/Cost 가 ,
	, 가 가 가 . VE 가
	, 가 가 , 가
2.5 Implement	VE
,	- 가 (value) 가
Scale-up , Process owner	. Function block diagram FAST(Function Analysis System Technique)
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. FD
                                                                            , Claim
                                                )/
         (Forced Decision) DARE(Decision
                                                )
         Alternative Ratio Evaluation
         system)
                        가
                              . Value
                                                    , Design Trend
         index
                                                               가
              가
                                가
                  가
                                  .VE
     DFSS
      ۷E
                                            1
                      DFSS
                 DFSS
              CTQ
                                                        4.
                                            4.1
           가
                                              Explore
가
             , resource
                                                       가
                                                              3
      가
                  가
                                                 3
                                                      5
                                                          가
                                                                                가
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                                                             5
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                                                     2
                                                          가
                                                                           ( 1).
  STEP 1-Explore
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                                                                           DARE
          ( C )
  .STE P2
                                                                0.1~10
          가
                                가 (F)
                                                                (weight)
                                                 가
                                                                     가
                                                                              "1"
                                            Value index
                                                        F/C
  . 가
                                      가
                                                   가가
                                                           F-C 가
  - FD(Forced Decision):
                                1 가
  1 1
                                                                        가
"1" "0"
- DARE(Decision
                      Alternative
                                    Ratio
                                                   가
                                                                 가
Evaluation System):1 가
" 0.1~10 "
   .STEP3
   F/C=Value Index
                  가
                                              VE
   가
                                                                           KPP
  STEP 4
                 (
                               Idea):
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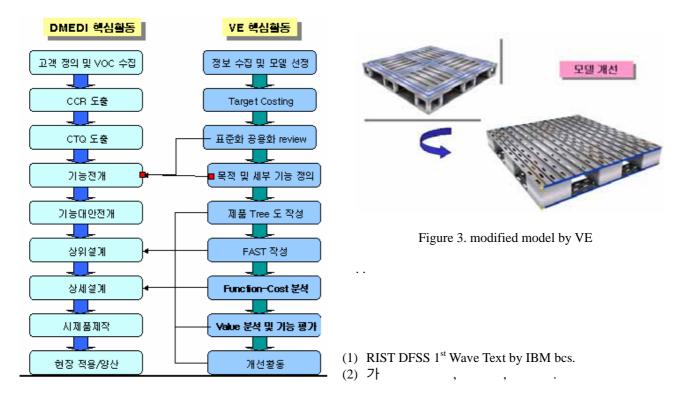


Figure 1. Combining of DMEDI and VE process.



Figure 2. Function diagram of pallet

Table 1. Cost and Function value to derive value index.

기능분야	현재 코스트 C	기능계수 (중요도, f)	코스트 배분	기능평가치 F	V=F/C	C - F	착수순위
F1	3,390	0,17	6,444	3,390	1	-	
F2	5,728	0,20	7,581	5,728	1	-	
F3	4,029	0, 09	3,411	3,411	0,85	618	2
F4	2,800	0,06	2,275	2,275	0,81	525	3
F5	2,447	0,13	4,927	2,447	1	-	
F6	1,504	0, 03	1,137	1,137	0, 76	367	4
F7	3,298	0,06	2,275	2,275	0,69	1,023	1
F8	2,572	0,06	2,275	2,275	0,89	297	5
F9	7,706	0, 20	7,581	7,581	0,98	125	6
합계	37,906	1,00	37,906	30,519	0,81		

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