

ISO/TR 16355-8:2017-02 (E)

Applications of statistical and related methods to new technology and product development process - Part 8: Guidelines for commercialization and life cycle

Contents		Page
Foreword		vi
Introduction		vii
1	Scope	1
2	Normative references	1
3	Terms and definitions	1
4	Basic concepts of QFD	1
5	Integration of QFD and product development methods	2
5.1	QFD support for product development methods	2
5.2	Flow of product development with QFD	2
5.3	Customers and stakeholders	2
6	Types of QFD projects	2
7	QFD team membership	2
7.1	QFD uses cross-functional teams	2
7.2	Core team membership	2
7.3	Subject matter experts	2
7.4	QFD team leadership	2
8	Lifestyle and emotional quality deployment	4
8.1	Kansei engineering	4
8.2	Setting product image strategy	4
8.3	Identifying stakeholders and customers	4
8.4	Visiting customers and stakeholders to understand context of use	4
8.5	Interviewing and doing ethnographies to understand customer lifestyle and self-image	5
8.6	Deriving lifestyle words with a customer lifestyle table	5
8.7	Affinity diagram of lifestyle words	6
8.8	Hierarchy diagram of lifestyle words	6
8.9	Identifying product attributes and set up experimental trials	7
8.9.1	Selecting product concepts to be evaluated	7
8.9.2	Creating survey of concepts and lifestyle words	7
8.10	Statistical analysis of customers' evaluations of products	9
8.11	Deploy to design and development	10
9	Component deployment	10
9.1	General	10
9.2	Modern Blitz QFD® and the maximum value table (MVT)	11
9.3	Functional requirements-components matrix	11
9.3.1	Purpose of the functional requirements-components matrix	11
9.3.2	Building the functional requirements-components matrix	11
9.4	Component-sub-function matrix and value engineering	13
9.4.1	Purpose of the component-sub-function matrix	13
9.4.2	Building the component-sub-function matrix	13
9.4.3	Value analysis (VA)	15
9.4.4	Value engineering (VE)	16

9.5	Function-subassembly and component matrix	17
9.5.1	Purpose of the function-components matrix	17
9.5.2	Building the function-component matrix (unweighted)	17
9.6	Subsystem-components matrix	17
9.6.1	Purpose of the subsystem-components matrix	17
9.6.2	Building the subsystem-components matrix	18
9.7	Component-failure mode matrix	19
9.7.1	Purpose of the component-failure mode matrix	19
9.7.2	Building the component-failure mode matrix	19
9.8	Component failure mode and effects analysis (FMEA)	19
9.8.1	General	19
9.8.2	Risk priority number (RPN) calculation	20
9.9	Quality assurance (QA) table	24
9.9.1	Purpose of the QA table	24
9.9.2	Building the QA table	24
10	Production method (manufacturing and process) deployment	24
10.1	General	24
10.1.1	Objective	24
10.1.2	Composition	25
10.2	Modern Blitz QFD® and the maximum value table (MVT)	25
10.3	Components-manufacturing operations matrix	26
10.3.1	Purpose of the components-manufacturing operations matrix	26
10.3.2	Building the components-manufacturing operations matrix	26
11	Testing, validation, design review, and prototyping	27
11.1	General	27
11.2	Testing	27
11.2.1	Purpose of components-test matrix	27
11.2.2	Building the components-test matrix	27
11.3	Validation	28
11.3.1	General	28
11.3.2	Focus groups	28
11.3.3	Kano surveys	28
11.3.4	Conjoint analysis	28
11.4	Design review	29
11.5	Prototyping	29
12	Production planning	29
12.1	General	29
12.2	Process capability	29
12.2.1	Cp	29
12.2.2	Cpk	30
12.3	Optimize process	30
12.4	Make-or-buy decision	30
12.5	Project work or task management	31
13	Build and process planning	32
13.1	General	32
13.2	Quality control (QC) process planning table	32
13.3	Quality control (QC) tables for component production and assembly	33
13.4	Process FMEA	34
13.5	Work standards	35
13.5.1	QC process table based work standard	36
13.5.2	L-matrix based work standard	36
13.6	Other tools and methods	38
14	Build	38
14.1	General	38
14.2	Applicable tools and methods	38

15	Packaging design, logistics, channel management, consumer information, and operating instructions	39
15.1	Functional packaging	39
15.2	Aesthetics and packaging	39
15.3	Logistics	39
15.4	Marketing claims	39
15.5	Marketing collateral, operating instructions, service and repair documents, service parts	40
16	Customer support	40
16.1	General	40
17	Customer satisfaction	41
17.1	Customer satisfaction surveys	41
17.2	Reporting customer satisfaction results	42
17.3	Tying customer satisfaction results back to project goals	43
18	Product end-of-life disposal, recycle, reuse, and other sustainability concerns	43
19	Flow to next generation development	45
19.1	Generational improvements with modern Blitz QFD®	45
19.2	Generational improvements with comprehensive QFD	45
19.2.1	General	45
19.2.2	Updating comprehensive QFD	46
20	Quality assurance network	47
20.1	Objective	47
20.2	Composition	47
	Bibliography	49