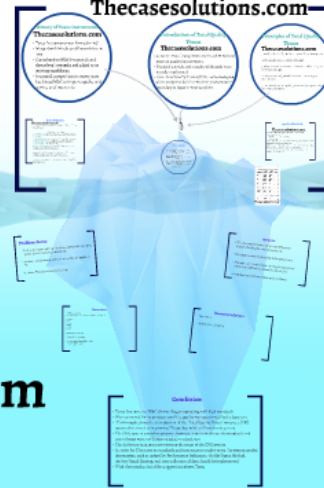


Introduction

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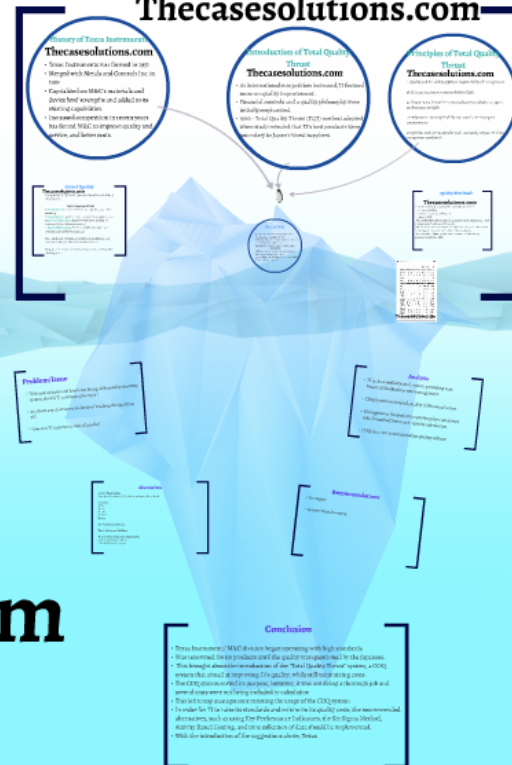
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Texas Instruments, Cost of Quality Case Solution



Introduction

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Introduction

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History of Texas Instruments Thecasesolutions.com

- Texas Instruments was formed in 1951
- Merged with Metals and Controls Inc. in 1959
- Capitalized on M&C's materials and device level strengths and added to its existing capabilities.
- Increased competition in recent years has forced M&C to improve quality and service, and lower costs.

Introduction of Total Quality Thrust Thecasesolutions.com

- As international competition increased, TI focused more on quality improvement.
- Financial controls and a quality philosophy were initially emphasized.
- 1980 - Total Quality Thrust (TQT) method adopted when study revealed that TI's best products were secondary to Japan's worst suppliers.

Principles of Total Quality Thrust Thecasesolutions.com

- 1) Quality and Reliability (Q&R) is responsibility of management
- 2) All organizations are responsible for Q&R
- 3) A key criteria for performance evaluations include manager's performance on Q&R
- 4) Only outcomes of Q&R will be measured; not manager's commitments
- 5) Q&R has only one acceptable goal: constantly surpass TI's best competitors worldwide

Cost of Quality Thecasesolutions.com

Designed to highlight one of poor quality and the cost of doing this properly.

Four Categories of COQ

- a) Prevention Costs: costs incurred to keep quality defects from occurring
- b) Appraisal Costs: costs to ensure conformity of output to specs
- c) Internal Failure Costs: detection of defective products or processes before delivery to customer
- d) External Failure Costs: detection of defective products or processes after delivery to customer

COQ aided in the detection of problems in production and performance leading to Profit & Loss Performance.

However, not all issues and concerns were being addressed by the COQ system.

Uses of COQ

- Quality-based financing system: requirement for all customers
- Quality-based financing system: requirement for all customers
- Quality-based financing system: requirement for all customers

Benefits

- COQ had become a key component of TI's quality management system
- COQ had become a key component of TI's quality management system
- COQ had become a key component of TI's quality management system

Quality Blue Book

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- cost: TI's internal "Quality Blue Book" which recorded:
- product reliability
- customer feedback on TI quality
- data on COQ

The Quality Blue Book compared the actual vs. goals, comparisons with previous period, and a month forecast.

The book was used to emphasize the idea that quality performance was being judged in the same level as financial performance.

Cost of Quality (COQ) - performance measures included in company - Business - Quality Blue Book

The table displays a grid of data with multiple columns representing different quality metrics and rows representing time periods. The data is organized into sections, likely corresponding to the four categories of COQ mentioned in the text.

Problem/Issue

- With several costs and losses not being addressed by the COQ system, should TI continue utilizing it?
- Are there any alternative methods of tracking the quality at TI?

Analysis

- TI lacks a sophisticated system providing non-financial feedback to top management
- COQ system measured quality in financial terms
- Management focused on improving the cost drive which resulted from...



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Quality Blue Book

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- 1981 -TI established a "Quality Blue Book" which recorded:
 - product reliability
 - customer feedback on TI quality
 - data on COQ
- The Quality Blue Book compared the actual vs. goals, comparisons - with previous period, and 3-month forecasts
- The book was used to emphasize the idea that quality performance was being judged at the same level as financial performance.
- Cost of Quality (COQ) - performance measure included in every - division's Quality Blue Book

Exhibit 3 Texas Instruments: Materials & Controls Group—Quality Blue Book

DESCRIPTION	THREE MONTH FCST				NEXT QTR FC		CURR QTR + 3			
	MONTHLY		MONTHLY		MONTHLY		MONTHLY			
	ACT	SEP	OCT	NOV	FCST	VAR	FCST	VAR	4Q87	4Q88
	AUG	1986	1986	1986	4Q86	GOAL	2Q87	GOAL	GOAL	GOAL
CONCUR INDICATORS										
LOT ACCEPTANCE %										
PRODUCT LINE A	98.9	99.4	99.5	99.5	99.4	-0.1	-	-	99.6	99.7
PRODUCT LINE B	98	98	98	98	98	-	-	-	98.4	98.9
PRODUCT LINE C	97.8	97.7	98.2	98.5	97.9	-0.6	-	-	98.7	99.1
PRODUCT LINE D	95.7	99.7	99.7	99.7	99.7	-	-	-	99.7	99.7
TOTAL	96.1	98.2	98.2	98.2	98.2	-	-	-	98.6	99
AVG OUTED QUALITY										
PRODUCT LINE A	1293	338	330	245	338	-93	-	-	228	211
PRODUCT LINE B	974	957	957	957	957	-	-	-	836	706
PRODUCT LINE C	1238	664	635	443	707	-71	-	-	570	521
PRODUCT LINE D	6267	254	167	-	254	-85	-	-	127	127
TOTAL	9714	2213	2091	1845	2256	-7	-	-	1761	1565
LEADING INDICATOR										
RMR % - QUALITY										
PRODUCT LINE A	-	0.1	0.1	0.1	0.1	-	-	-	0.1	0.1
PRODUCT LINE B	-	0.1	0.1	0.1	0.1	-	-	-	0.1	0.1
PRODUCT LINE C	-	0.1	0.1	0.1	0.1	-	-	-	0.1	0.1
PRODUCT LINE D	-	-	-	-	-	-	-	-	-	-
TOTAL	0.1	0.1	0.1	0.1	0.1	-	-	-	0.1	0.1
RMR % - TOTAL										
PRODUCT LINE A	-	0.1	0.1	-	0.1	-	-	-	0.1	0.1
PRODUCT LINE B	-	0.3	0.3	0.3	0.3	-	-	-	0.2	0.2
PRODUCT LINE C	-	0.2	0.2	0.2	0.2	-	-	-	0.1	0.1
PRODUCT LINE D	-	-	-	-	-	-	-	-	-	-
TOTAL	0.1	0.2	0.2	0.2	0.2	-	-	-	0.1	0.1
CUSTOMER REPORT CARD	98.7	98.7	99.7	98.7	98.8	0.2	-	-	98.6	98.6
COMPETITIVE RANK	100	100	100	-	100	-	-	-	100	100
PRODUCT LINE A	11/3	11/3	11/3	11/3	11/3	-	-	-	11/3	11/3
PRODUCT LINE B	11/5	11/5	11/5	11/5	11/5	-	-	-	11/5	11/5
PRODUCT LINE C	11/2	11/2	11/2	11/2	11/2	-	-	-	11/2	11/2
PRODUCT LINE D	11/3	11/3	11/3	11/3	11/3	-	-	-	11/3	11/3
ON-TIME DELIVERY	97.3	97.0	97.3	97.3	97.3	-	-	-	97.6	97.8
LEADING INDICATOR										
1ST Pkg CAL YLDE										
PRODUCT LINE A	94.5	95.0	95.0	95.0	95.0	-	-	-	95.2	95.1
PRODUCT LINE B	95.5	91.5	91.5	92.0	91.5	-0.5	-	-	93.0	94.0
PRODUCT LINE C	91.9	94.2	94.5	94.2	94.5	-	-	-	95.0	95.5
PRODUCT LINE D	96.4	97.0	96.0	98.0	96.0	-	-	-	97.0	98.0
COST OF QUALITY										
PREVENTION	2.3	2.0	2.0	2.0	2.0	-0.1	-	-	2.3	2.0
APPRAISAL	2.2	2.2	2.2	2.2	2.2	-	-	-	2.2	2.2
EXTERNAL FAILURE	0.4	0.3	0.3	0.3	0.3	-	-	-	0.3	0.3
TOTAL COST	4.9	4.5	4.5	4.5	4.5	-0.9	-	-	4.8	4.5

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Designed to highlight cost of poor quality and the cost of doing things wrong.

Four Categories of COQ:

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- 4) **External Failure Costs**: detection of defective products or processes after delivery to customer

COQ aided in the detection of problems in production, and problems causing bad Profit & Loss Performance.

However, not all issues and concerns were being addressed by the COQ system.