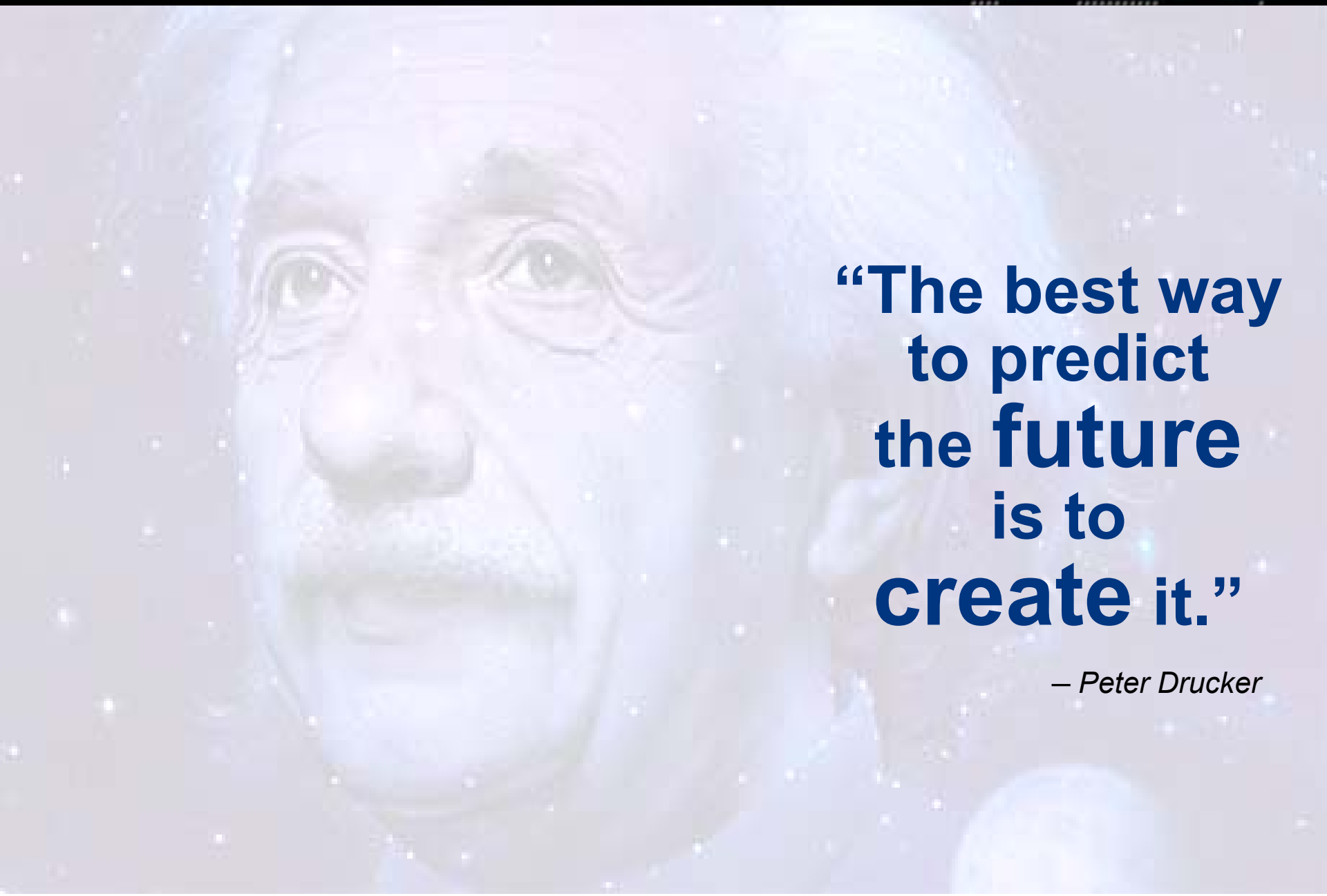


Build the 'Right Software' to Delight Your Customer

Unmesh Gundewar
January 19, 2005





**“The best way
to predict
the future
is to
create it.”**

– Peter Drucker

Agenda

- **What Is *Right Software*?**
- What We Asked, Heard, and Learned
- Customer Delight – Leading Indicators
- Goal Question Metric (GQM)
- Predicting Customer Delight
 - Customer Delight Index (CDI)
- Summary

Operational Definitions

- Building the **Software Right**
 - Building software that meets specifications, but may **not** meet the need

versus

- Building the **Right Software**
 - Building software that **exceeds** customers' expectation

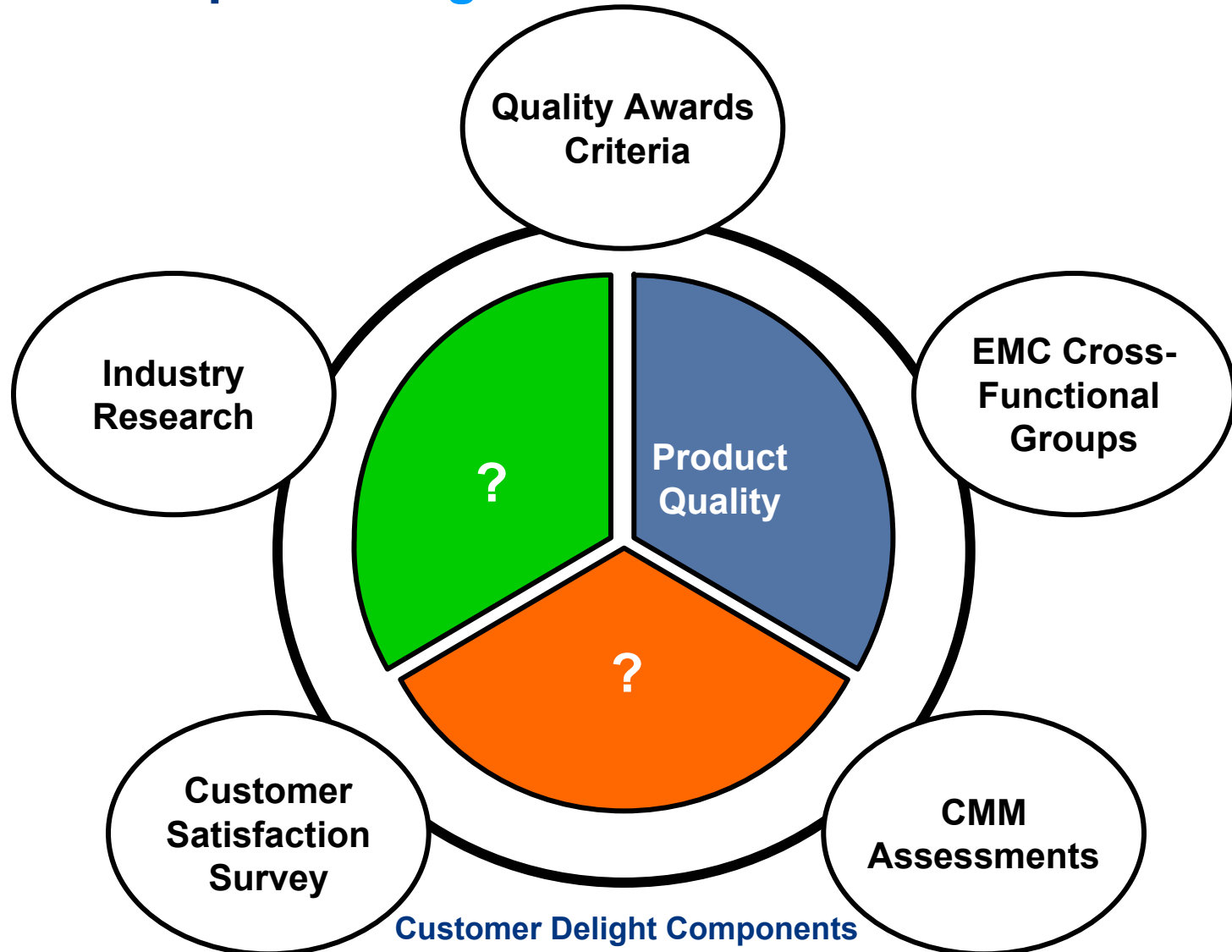
Most Quality Initiatives Focus on Software Right!

- Capability Maturity Model – CMM
- Six Sigma – DMAIC
 - Define
 - Measure
 - Analyze
 - Improve
 - Control
- Product Delivery Process Improvement Initiatives
- Product Quality Initiatives



**Customer Delight
Components**

Sources of Input for *Right Software*

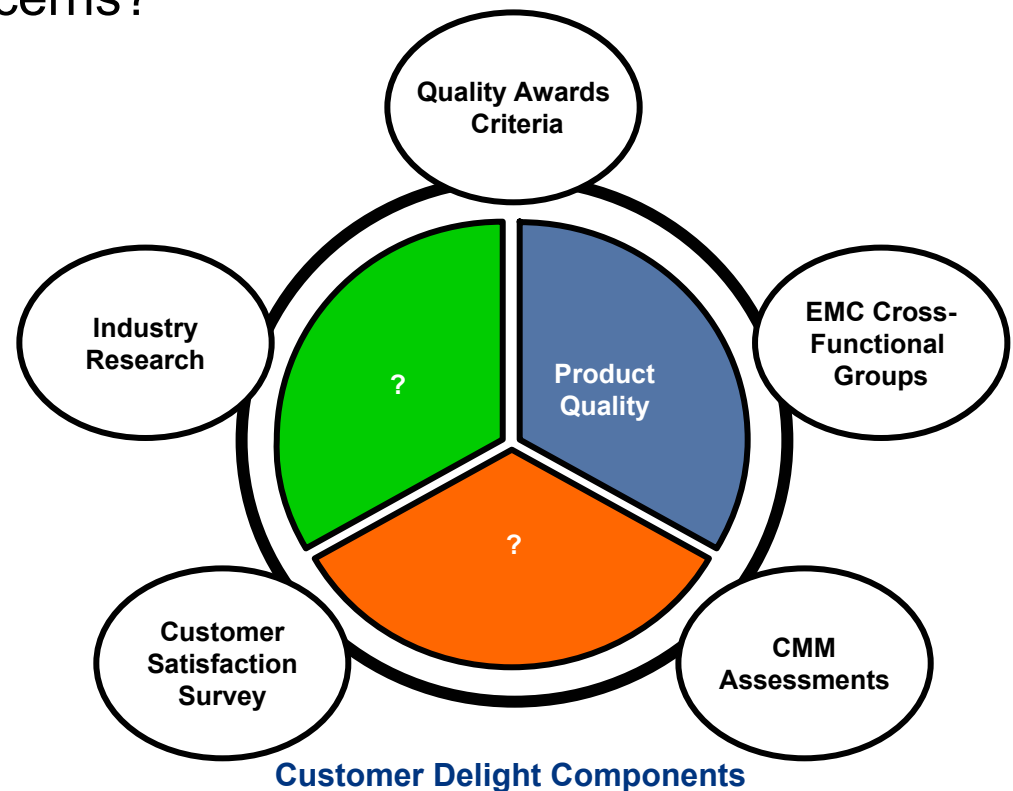


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What We Asked

- What are we doing to delight our customers?
- How are we currently measuring customer satisfaction?
- What are our top areas of concerns?



What We Heard – Striving for Customer Delight

- Customer and market knowledge
 - Listening & learning strategies
- Customer relationships and satisfaction processes
 - Acquiring new customers
 - Retaining existing customers
 - Developing new marketing opportunities
 - Managing complaints
- Customer-focused results
 - Analyzing how well organization has been
 - Satisfying customers
 - Delivering product and service quality



Customer Delight Components

RESULT:

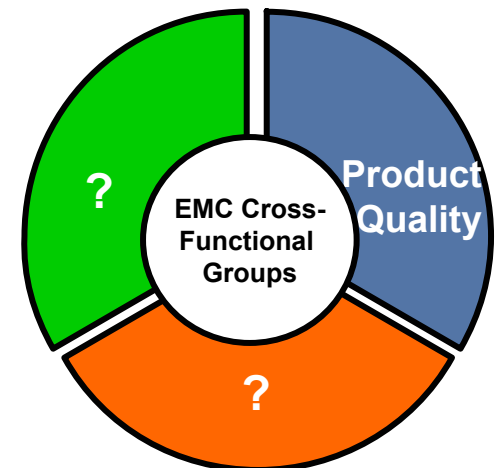
Customer Loyalty and Repeat Business

What We Heard – Engineering

- Driving toward delighting customers by improving products and services
 - New functionality
 - Ease of doing business
 - Ease of use
 - Reliability
 - Serviceability

Our first and foremost goal should be to delight our customers

– EVP, Software Development



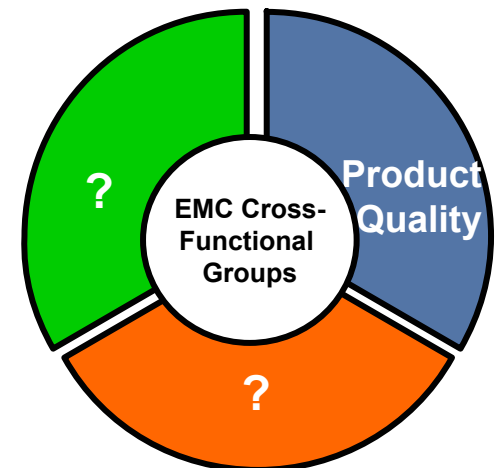
Customer Delight Components

RESULT:

Right Features, Product, and Service Quality

What We Heard – Global Services

- Driving toward delighting customers by improving
 - Product quality
 - Faster service
 - Loyalty
- Reducing time to resolve problems
- Improving ease of use, functionality, and support
- Focusing on customer relationship and retention



Customer Delight Components

RESULT:

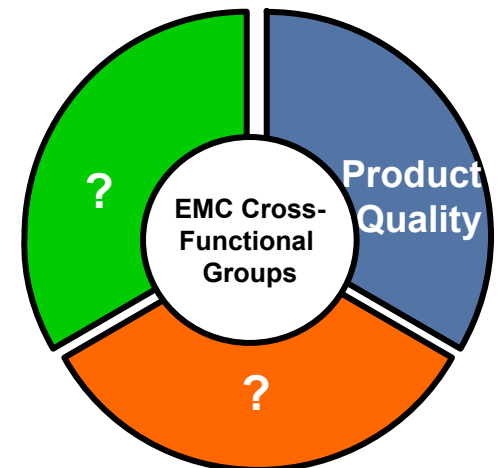
Effectiveness, Customer Loyalty,
and Repeat Business

What We Heard – Customer Service

- Driving toward delighting customers by improving Quality of Service
 - Investing resources where most needed
 - Involving customer service up front in the EMC corporate product lifecycle
 - Conducting focus groups
 - Improving test coverage across all products

When the customer does not have to call EMC, that's delight!

– Director of Customer Service



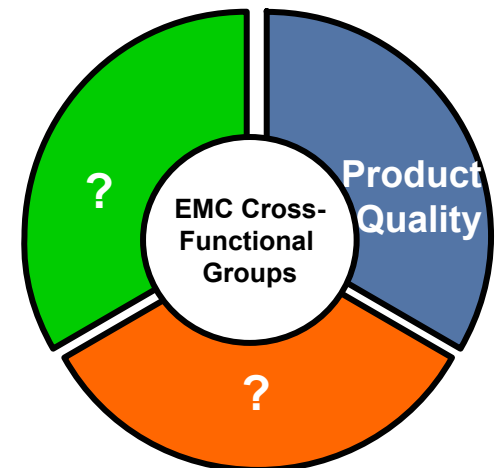
Customer Delight Components

RESULT:

Responsiveness, Product, and Quality

What We Heard – Corporate Quality

- Driving toward delighting customers by
 - Improving
 - Customer relationship
 - Perceived value
 - Customer satisfaction
 - Robustness of EMC solutions
 - Increasing profitability of
 - EMC
 - Customer



Customer Delight Components

RESULT:

Perceived Value, Loyalty, and
Repeat Business

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Customer Delight Components

- Right features
- Loyalty & repeat business
- Perceived value



- Avoiding Defects

- Responsiveness
- Effectiveness

Customer Delight Components

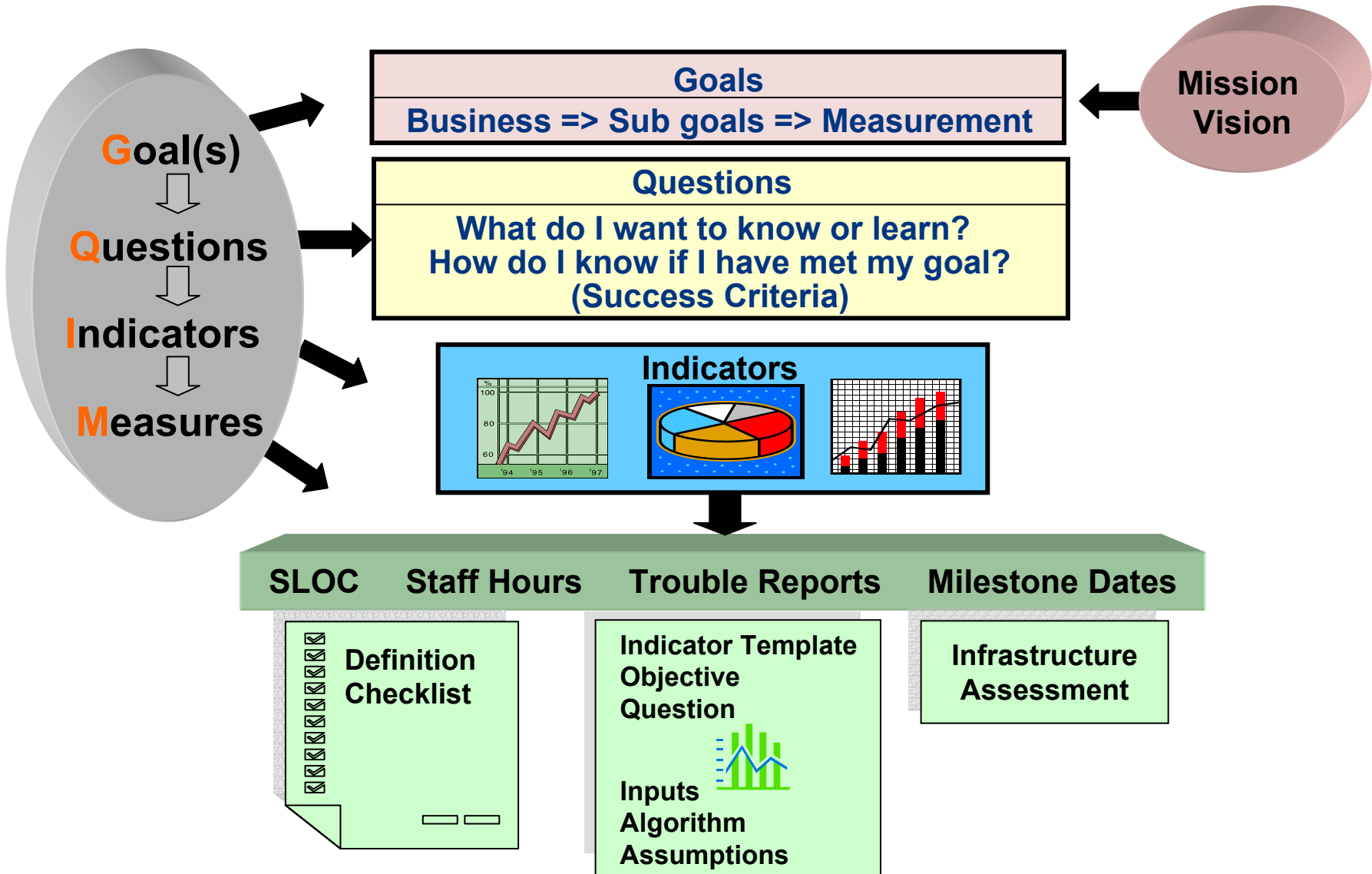
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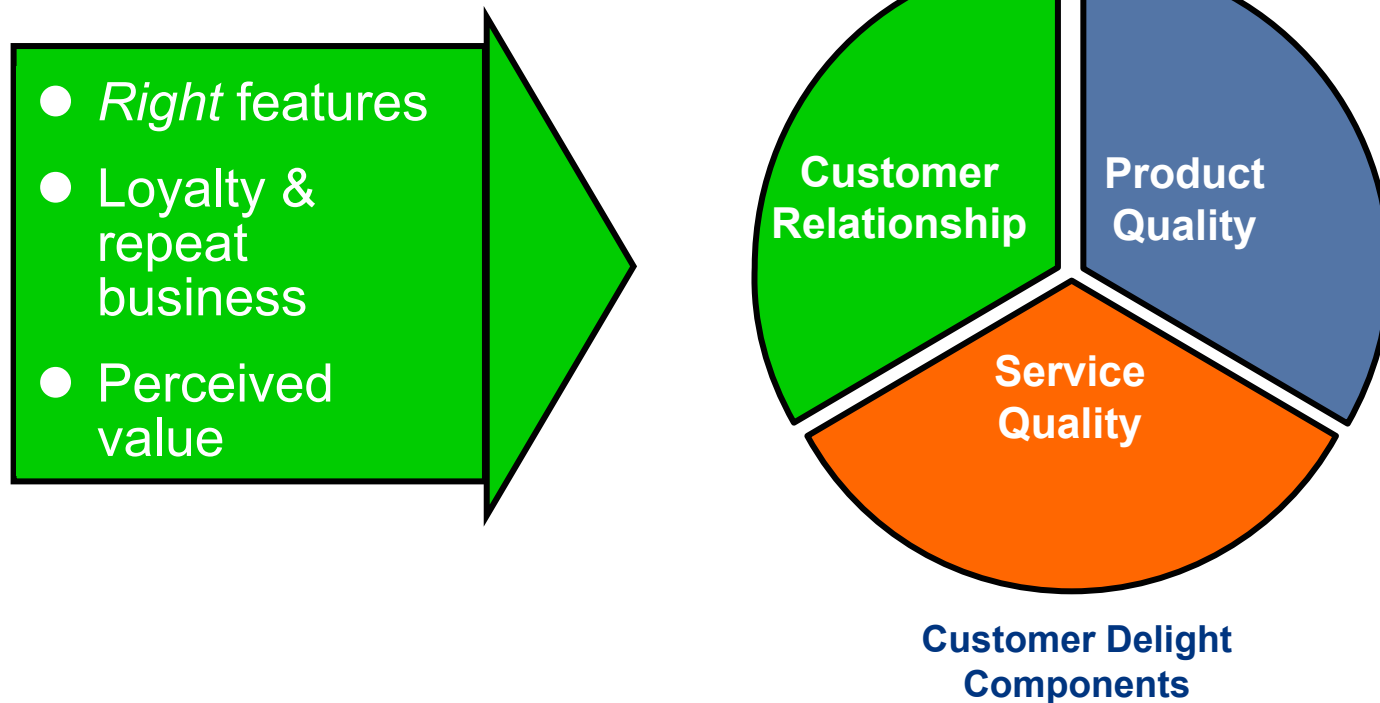
Customer Delight – Leading Indicators

Customer Relationship	Service Quality	Product Quality
<ul style="list-style-type: none"> ● <i>Right Features</i> ● Loyalty & Repeat Business ● Perceived Value 	<ul style="list-style-type: none"> ● Responsiveness ● Effectiveness 	<ul style="list-style-type: none"> ● Avoiding Defects

GQM (Goal Question Metric)

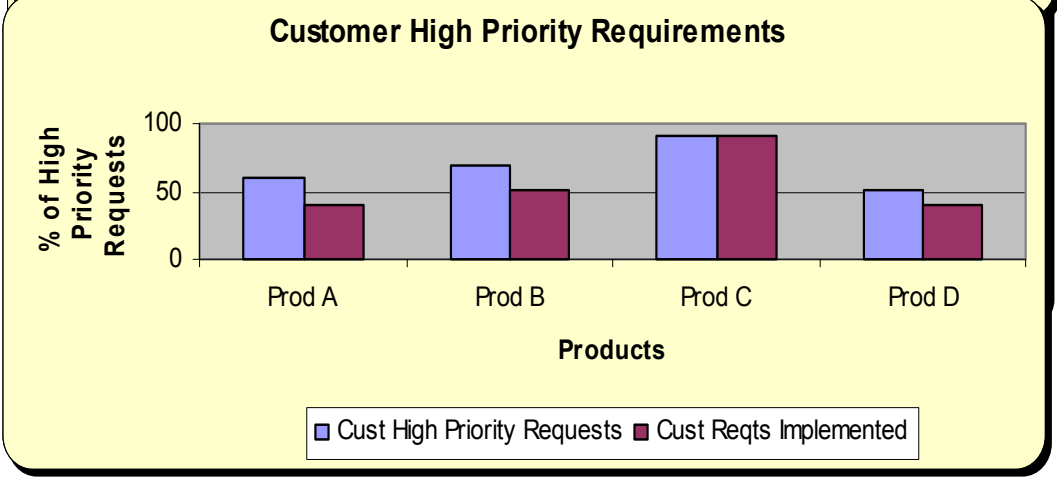
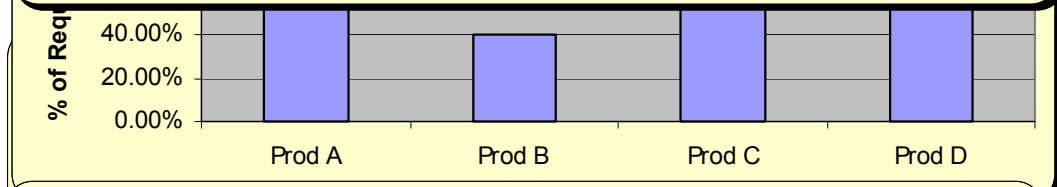
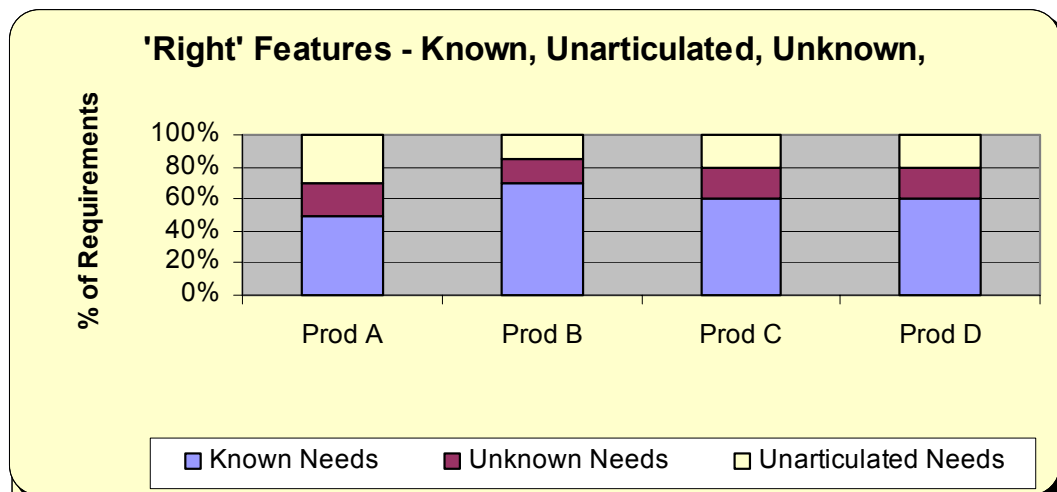


Customer Relationship Goals



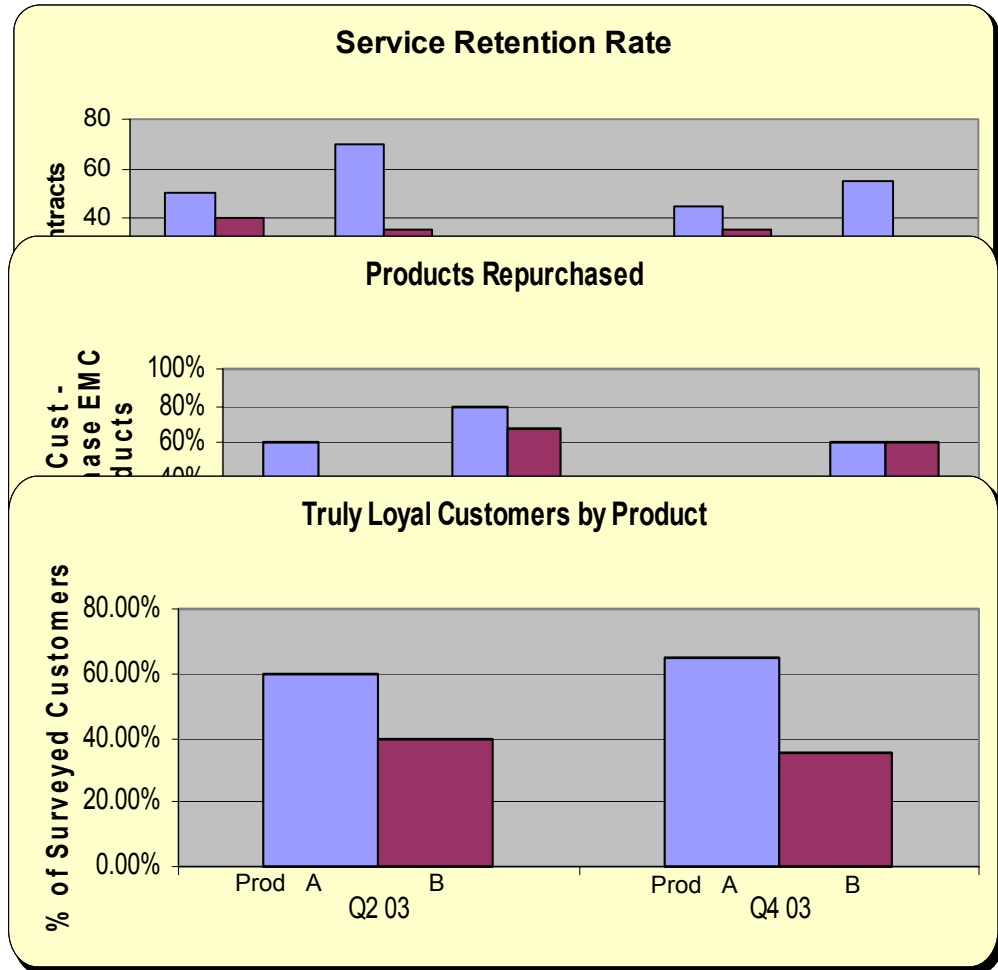
Goal: Improve Right Features

- What percentage of the requirements fall into the categories of **known needs, unarticulated needs, & unknown needs?** – **AgileTek.**
- What percentage of **customer serviceability requirements** actually turn into product features?
- What percentage of the **customer requests** actually turn into product requirements?
- What percentage of the **high-priority requirements** are implemented?



Goal: Increase Loyalty and Repeat Business

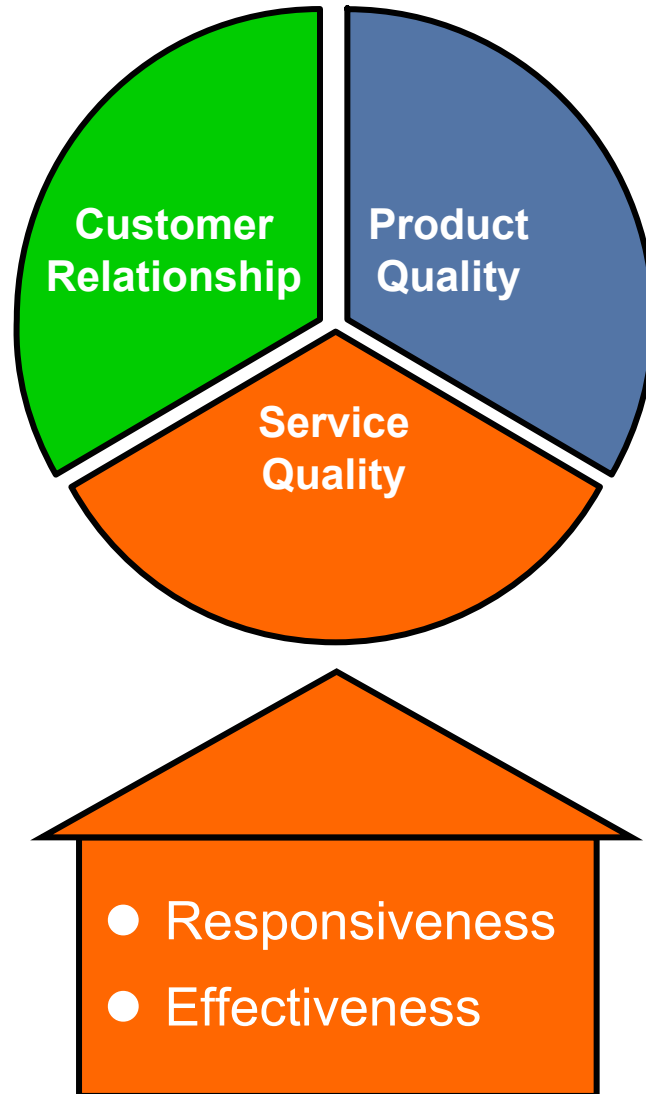
- What percentage of service contracts are being renewed?
 - By business units
 - By products
- How many customers are purchasing additional EMC products?
- How many customers are truly loyal to EMC?
 - By business units
 - By products



Goal: Perceived Value

- How long did it take to realize ROI?
- How effective was EMC at meeting customers' expectations?

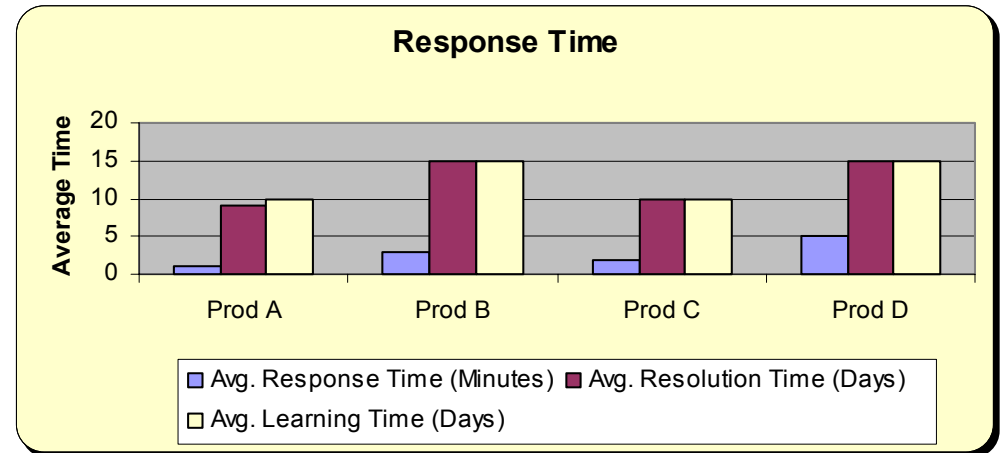
Service Quality Goals



Customer Delight Components

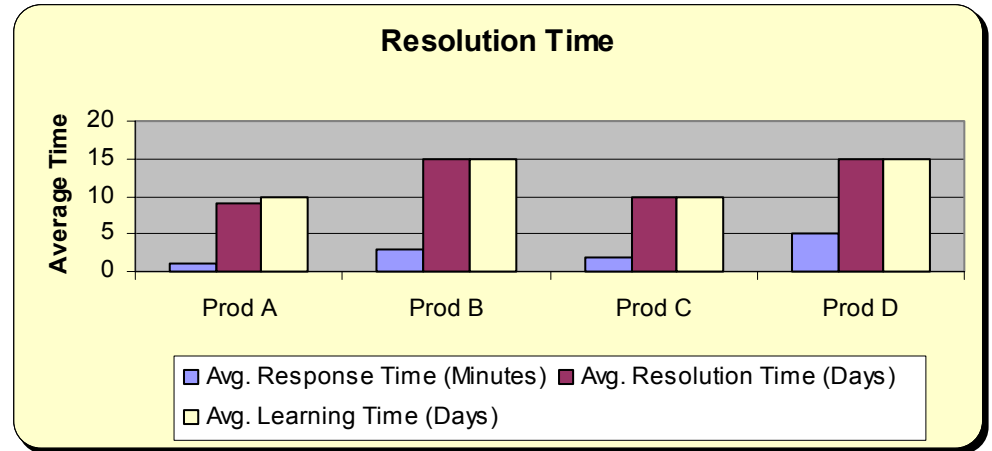
Goal: Improve Responsiveness

- How quickly does EMC customer service **respond** to customers?
- How long (weeks /months) does a new service representative require to **come up to speed**?
 - On average and by product

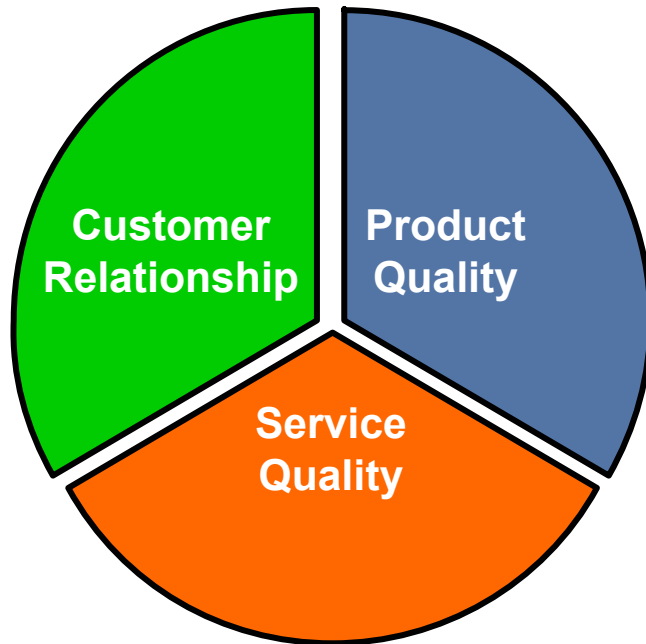


Goal: Improve Effectiveness

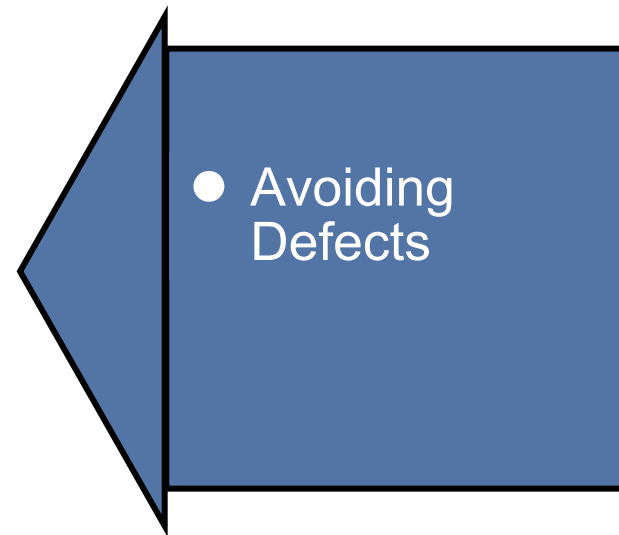
- How long does it take to **resolve** customers' questions and issues?



Product Quality Goals

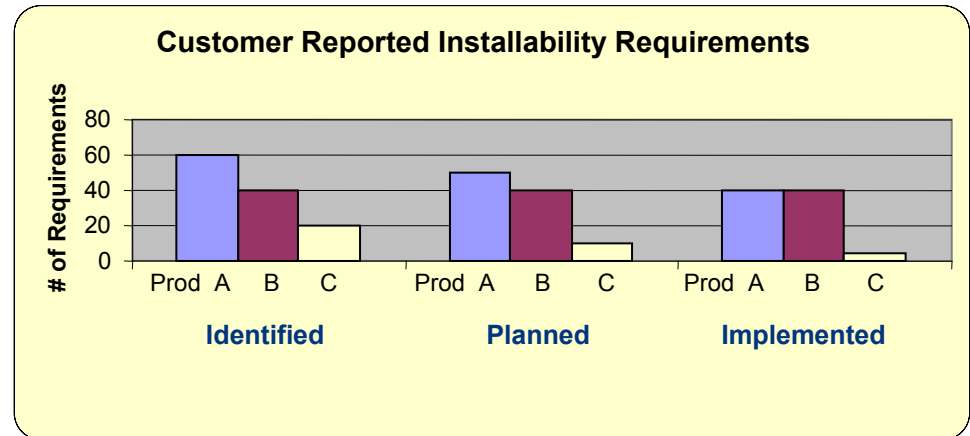


Customer Delight Components

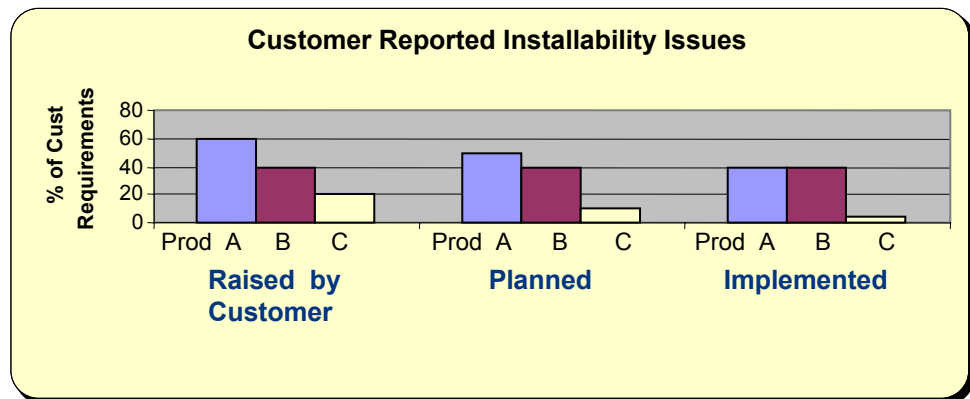


Goal: Improve Installability

- What percentage of the installability requirements are identified vs. implemented?

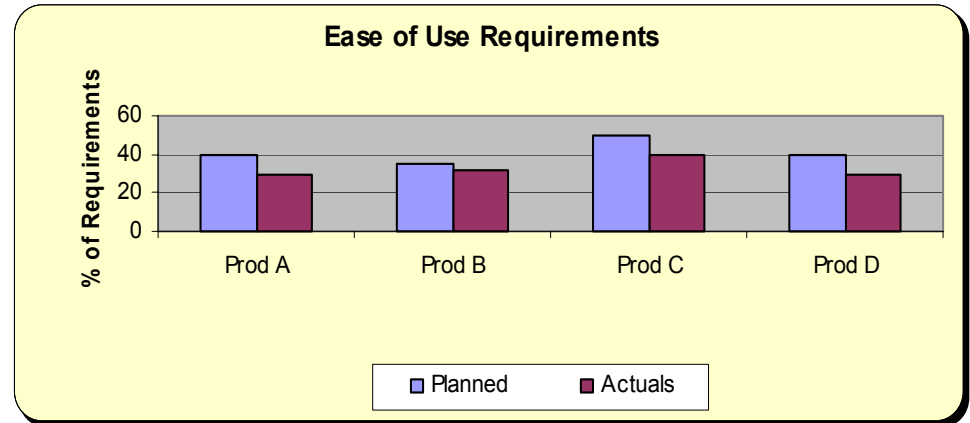


- What percentage of the customer reported installability issues are being addressed?



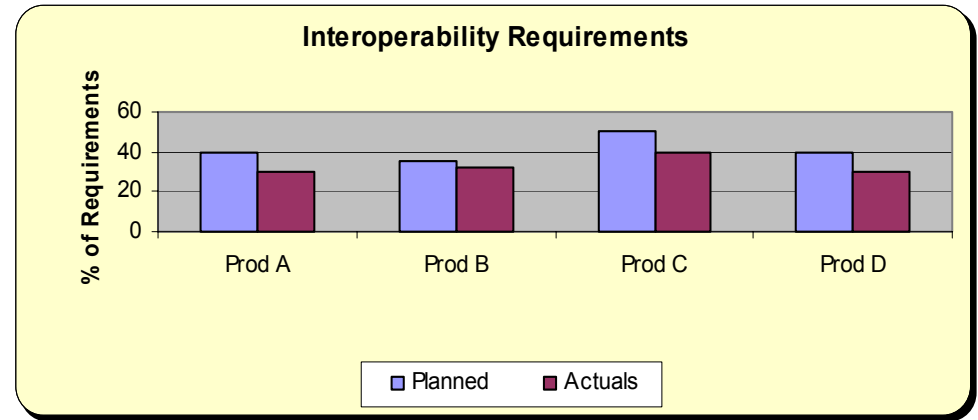
Goal: Improve Ease of Use

- What percentage of the planned ease of use requirements are actually implemented?
 - By product
 - By business units



Goal: Improve Interoperability

- What percentage of the Interoperability requirements are planned and implemented?
 - By product
 - By business units



Agenda

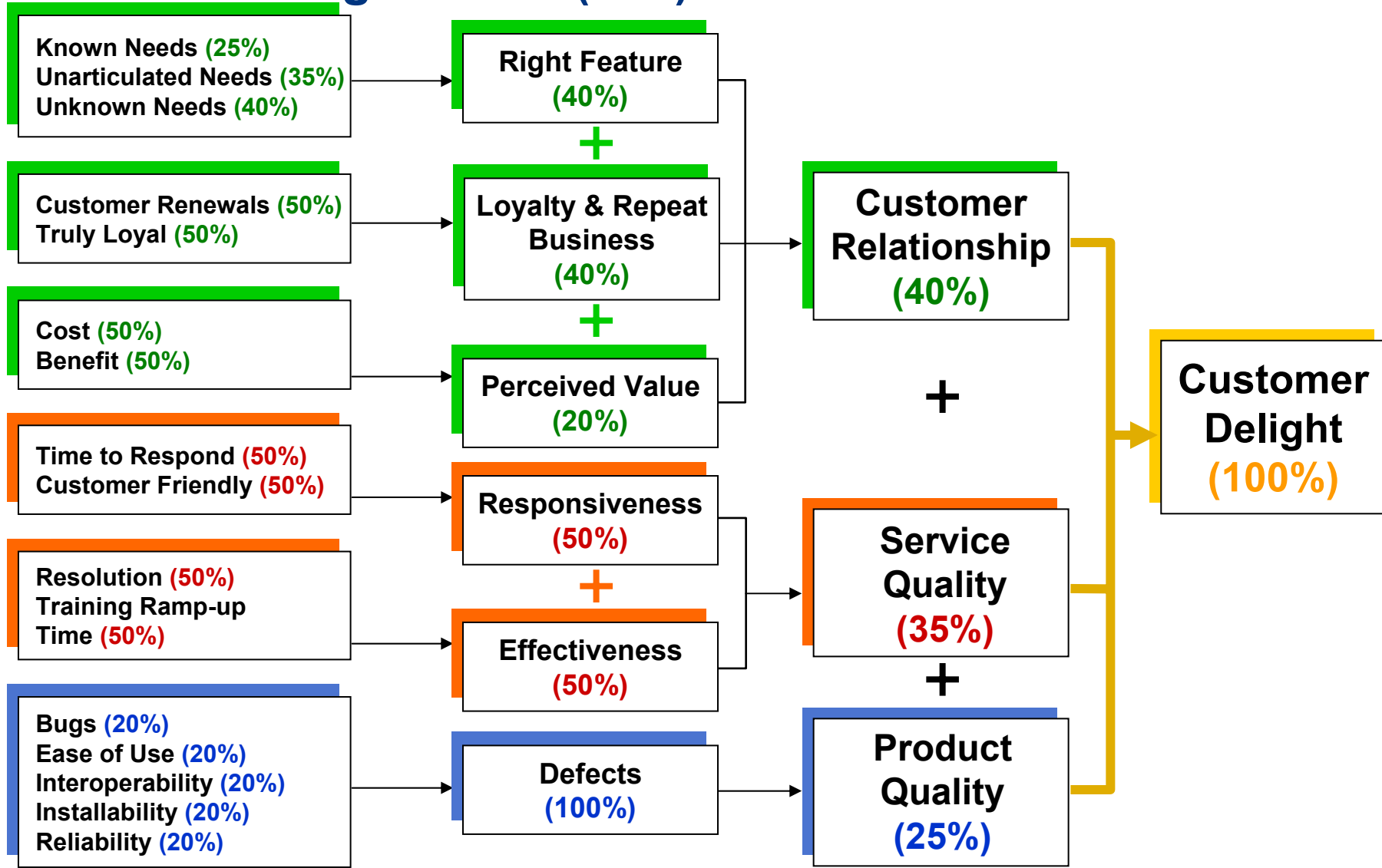
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Customer Delight – Leading Indicators

Customer Relationship	Service Quality	Product Quality
<ul style="list-style-type: none"> ● 'Right' Features <ul style="list-style-type: none"> – Known Needs – Unarticulated Needs – Unknown Needs ● Loyalty & Repeat Business <ul style="list-style-type: none"> – Contract Renewals – Truly Loyal ● Perceived Value <ul style="list-style-type: none"> – Cost – Benefits 	<ul style="list-style-type: none"> ● Responsiveness <ul style="list-style-type: none"> – Time to Respond – Customer Friendly ● Effectiveness <ul style="list-style-type: none"> – Resolution – Training Ramp-up Time 	<ul style="list-style-type: none"> ● Defects <ul style="list-style-type: none"> – Bugs – Ease of Use – Interoperability – Installability – Reliability

All areas are potential Six Sigma opportunities

Customer Delight Index (CDI)



Goal-Driven (Indicator) Measurement Process



Customer Delight	=	Customer Relationship	+	Service Quality	+	Product Quality
100% = 10	=	40%	+	35%	+	25%

6.80

2.72

2.28

1.80

Right Feature (40%)

Responsiveness (50%)

Defects (100%)

2.90

Known Needs (25%)	8
Unarticulated Needs (35%)	7
Unknown Needs (40%)	7

3.25

Time to Respond	8
Customer Friendly (50%)	5

7.20

Bug (20%)	6
Ease of Use (20%)	8
Interoperability (20%)	8
Installability (20%)	8
Reliability (20%)	6

Loyalty & Repeat Business (40%)

Effectiveness (50%)

2.60

Customer Renewals (50%)	5
Truly Loyal (50%)	8

3.25

Resolution (50%)	7
Training Ramp-up Time (50%)	6

Perceived Value (20%)

1.30

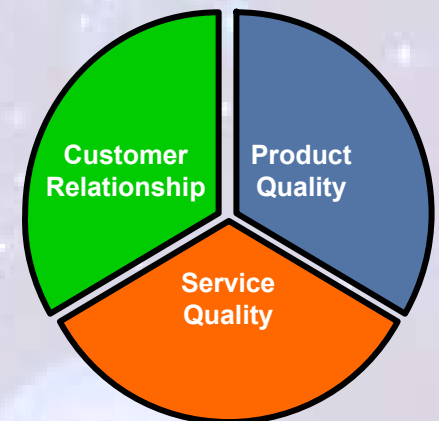
Cost (50%)	5
Benefits (50%)	8

Customer Relationship =
 $(2.9 + 2.6 + 1.3) \times 40\% = 2.72$

Perceived Value Percentage =
 $[(5 \times 50\%) + (8 \times 50\%)] \times 20\% = 1.3$

Summary

You can predict how your software will **delight** customers by measuring leading indicators **before** your product is released!



Customer Delight Components

Build the Right Software

- Right features
- Loyalty & repeat business
- Perceived value

Customer Relationship

Product Quality

Service Quality

- Avoiding Defects

- Responsiveness
- Effectiveness

Customer Delight Components

where information lives

EMC²
where information lives

Addendums



Sources of Input for Right Software

- Quality Awards Criteria
 - Malcolm Baldrige National Quality Award
 - Massachusetts Quality Award
- EMC Cross-Functional Groups
 - Engineering, Global Services, Customer Services, Corporate Quality
- CMM Self-Assessments
- Customer Satisfaction Survey
- Other EMC Reports
- Industry Research
 - AT&T Value Model
 - AgileTek
 - Quality Progress Periodical (February 2003)
 - The Loyalty Effect – Frederick F. Reichheld
- Goal-Driven (Indicator) Measurement Process
 - Deriving Enterprise-Based Measures Using the Balanced Scorecard and Goal-Driven Measurement Techniques, by Wolfhart Goethert and Matt Fisher, October 2003
- Massachusetts Quality Award
 - (Covers 7 areas, 1 which pertains to Customers)
 - Customer Focus and Satisfaction
 - Know customer's current and future needs
 - Evaluate processes for analyzing customer needs
 - Measure 'ease of doing business'
 - Timely follow-up after recent sales and transactions
 - Compare customer satisfaction results with competitors'
 - Analyze trends from customer satisfaction data

Right Features, Product Quality