

Define 5 – Quality Function Deployment (QFD)

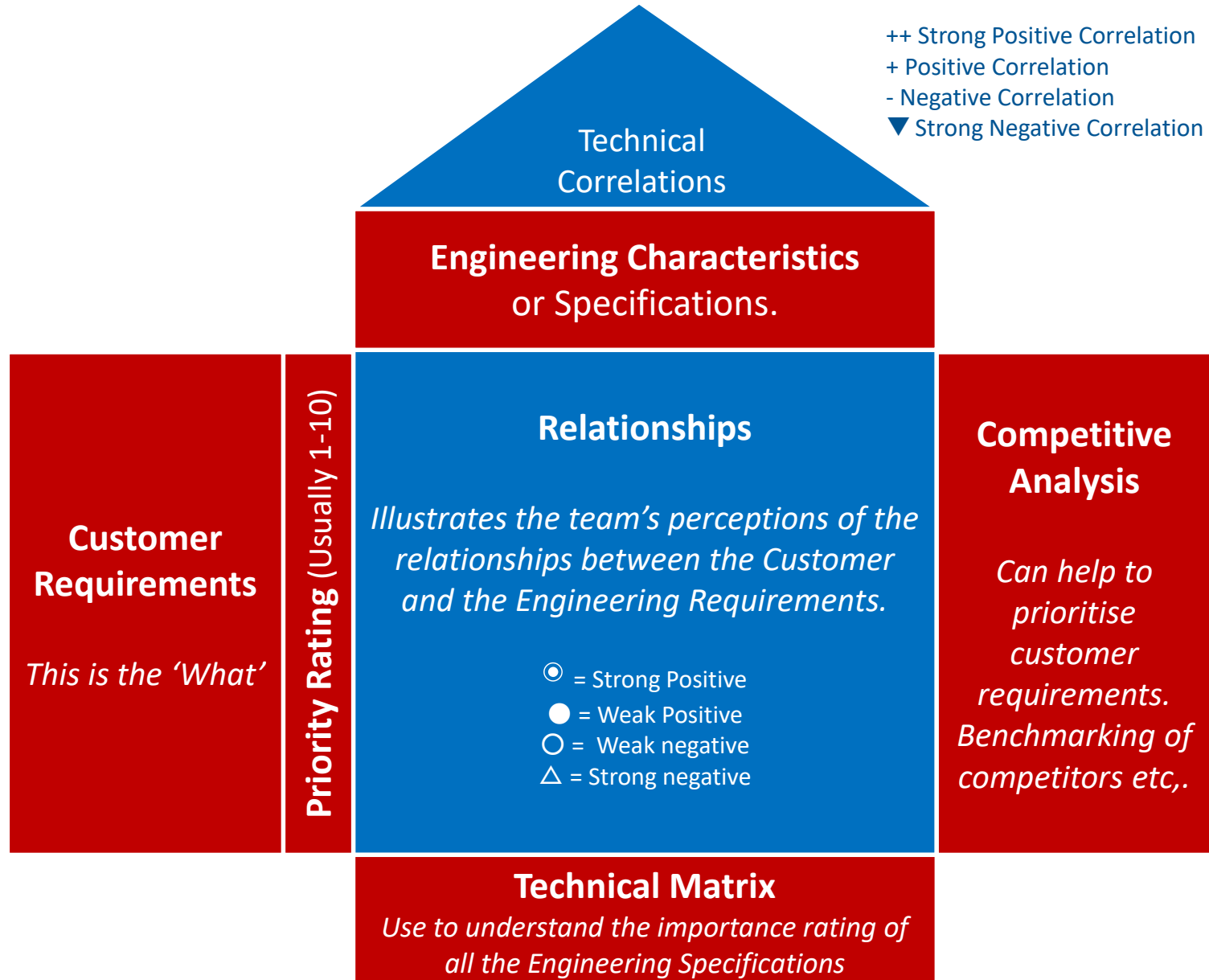


Also known as the house of quality

Quality Function Deployment (QFD) is a process for listening to customers voices and responding to their needs.

It aims to prioritise their needs and define relationships to engineering functions and specifications. It is also used to compare against competitor products

It ensures that the VoC is not forgotten during design and implementation phases

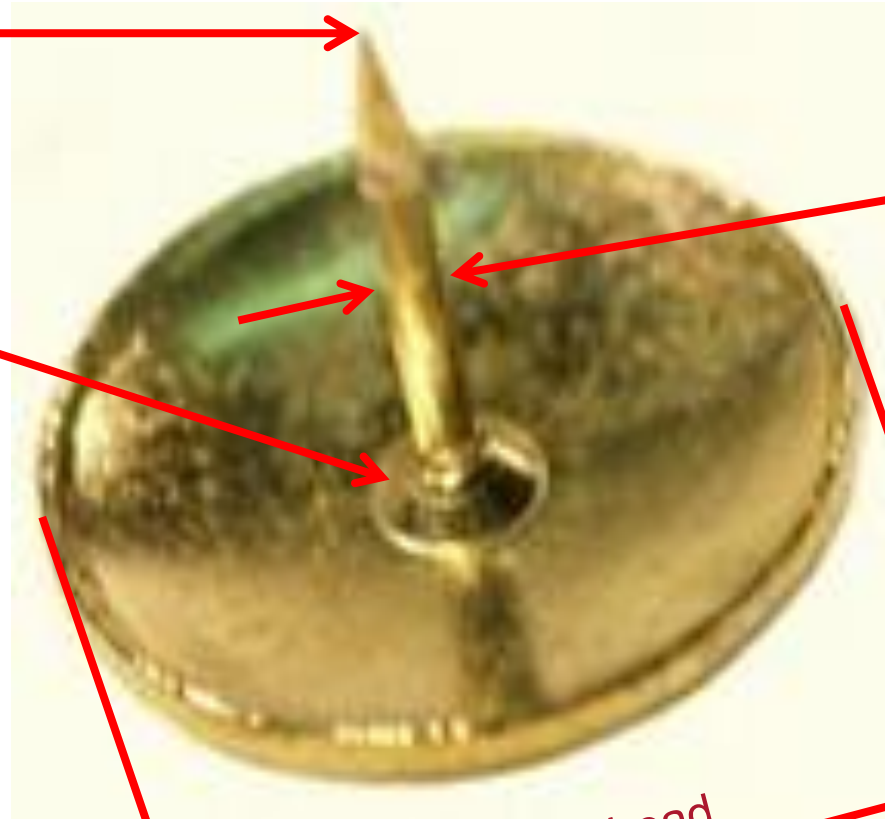




QFD Example
Drawing Pins

Sharpness
of pin head

Strength of
join (weld)



Ø of pin

Ø of head

QFD Example – Completed (to a point.)

		Design Requirements			
		Diameter of Head	Diameter of Pin	Strength of Pin	Sharpness of Pin
⊙ = Strong Positive ● = Weak Positive ○ = Weak negative △ = Strong negative					
Customer Requirements	Easy to push into Board	●	○		⊙
	Pin does not bend		●	⊙	
	Low price	△	○		○

- List customer requirements in LH box and prioritise
- Horizontally above relationship matrix list design requirements
- Evaluate the relationship between customer requirements and engineering/design requirements – strong positive, weak positive, weak negative, strong negative
- The roof shows any correlation between different engineering and design requirements
- Add competitor research in RH box

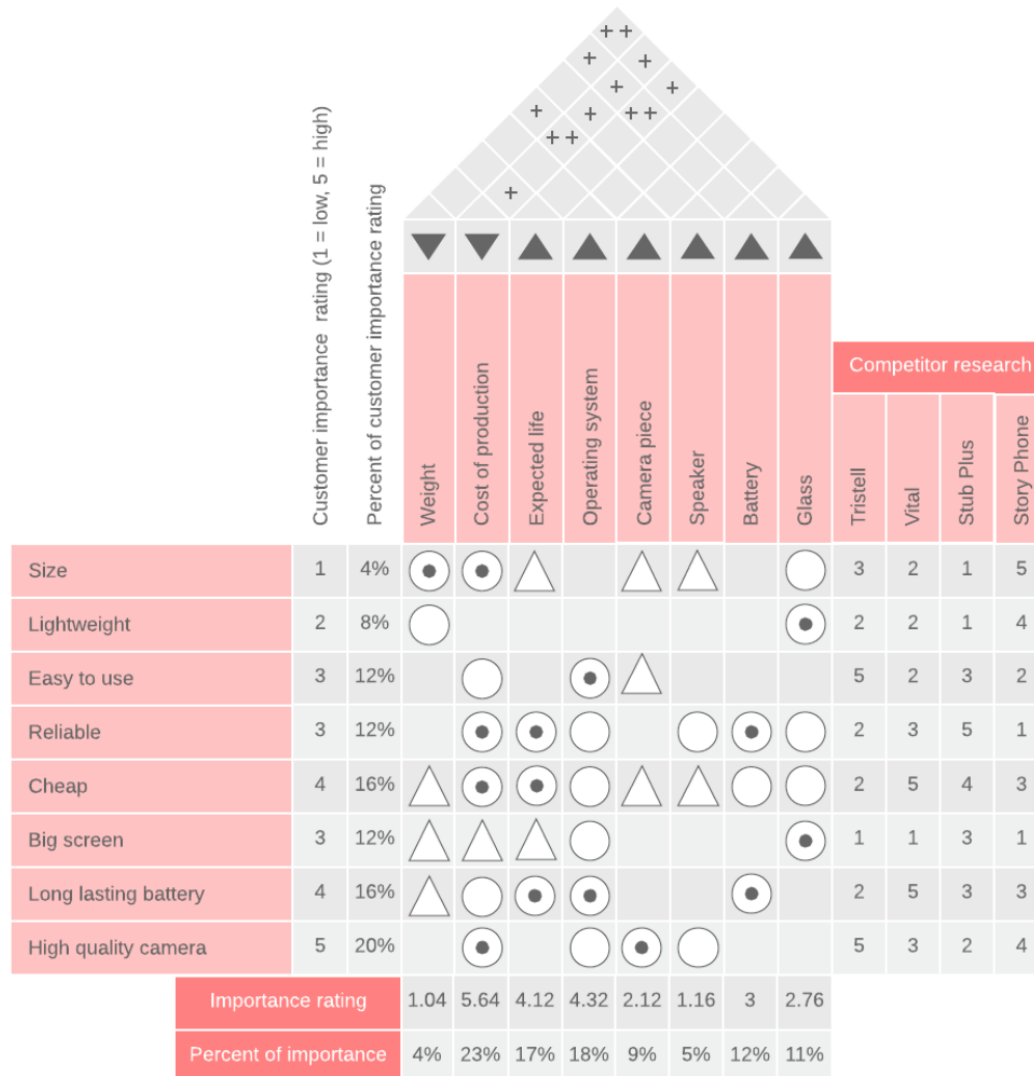
QFD Exercise – Mobile Phone Development



QFD Exercise – Mobile Phone Development

	Customer requirements	Customer Priority rating (1-10)
1	Have a good camera	5
2	Should have battery stand-by charge of 96 hours	4
3	Should be light weight	2
4	Should be easy to use	3
5	Should be cheap	4
6	Big screen	3
7	Reliable	3
8	Size not too big	1

QFD Exercise – Mobile Phone Development



QFD Exercise – Tape Measure Development



QFD Exercise – Tape Measure Development

- You are employed within a company which would like to expand their product range by designing and developing a tape measure
- A target/focus group has been questioned and 7 key customer requirements have been identified.
- Conduct a QFD exercise based on the information available and making appropriate assumptions where necessary.
- You will need to identify suitable design requirements
- Use the 4 steps and to structure the process

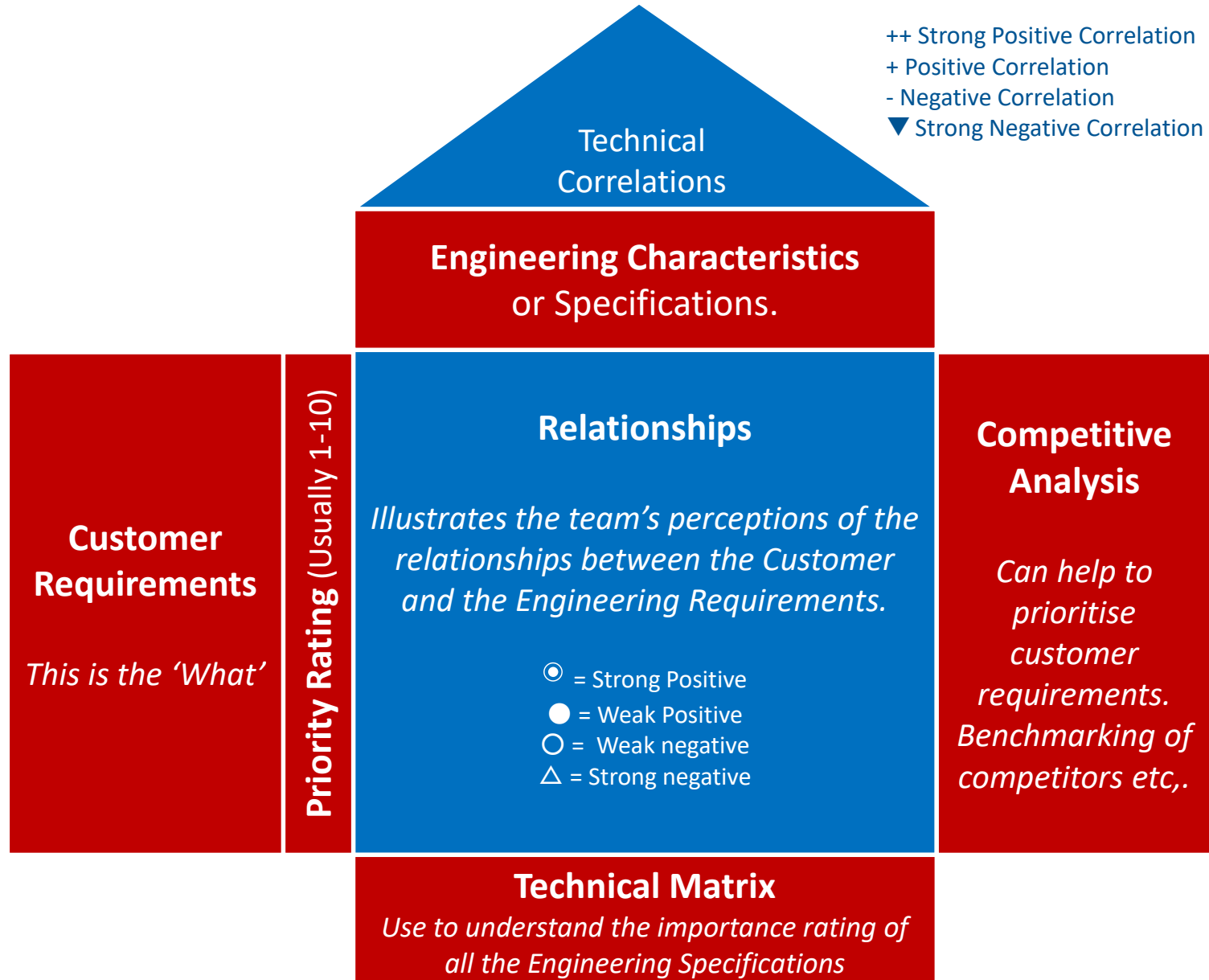
QFD Exercise – Tape Measure Development

	Customer requirements	Customer Priority rating (1-10)
1	Is able to take long measurements	7
2	Should be easy to read measurements	8
3	Should be easy to start/stop the tape from retracting	3
4	Should be low cost	6
5	Should be light weight	2
6	Should be robust (resistant to impact)	5
7	Tape should have a long 'stand out'	5

MADE



												Correlation matrix							
												- positive, supporting - negative, tradeoff							
												Customer Rating							
												5 High, 1 Low							
Interrelationship matrix												Major sales point: 1-4 Minor sales point: 1-1							
	Product Requirements	REQUIREMENT #1	REQUIREMENT #2	REQUIREMENT #3	REQUIREMENT #4	REQUIREMENT #5	REQUIREMENT #6	REQUIREMENT #7	REQUIREMENT #8	REQUIREMENT #9	REQUIREMENT #10	CUSTOMER INFORMATION	DURABILITY	ECONOMY	COMFORT	IMPROVEMENT	SOCIAL	SALES FACTOR	DESIGN
Customer Requirements																			
Organizational Difficulty (Low=0, High=100%)																			
Our Company																			
Company A																			
Company B																			
Target Benchmark																			



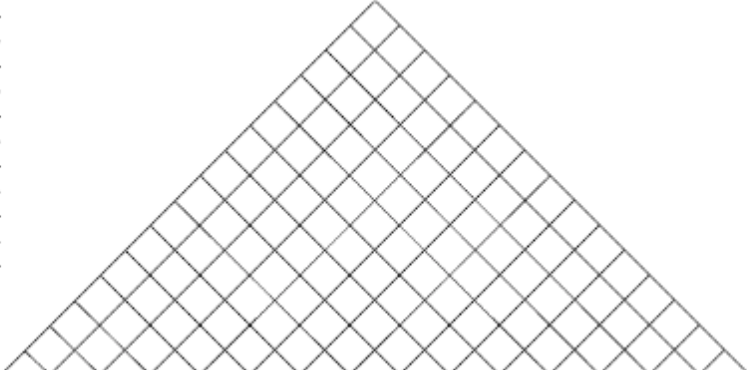
Title: _____

Author: _____

Date: _____

Notes: _____

Legend		
⊖	Strong Relationship	9
○	Moderate Relationship	3
▲	Weak Relationship	1
++	Strong Positive Correlation	
+	Positive Correlation	
-	Negative Correlation	
▼	Strong Negative Correlation	
▼	Objective Is To Minimize	
▲	Objective Is To Maximize	
X	Objective Is To Hit Target	

Title: _____																			Legend			
Author: _____																				Strong Relationship	9	
Date: _____																				Moderate Relationship	3	
Notes: _____																				Weak Relationship	1	
_____																				Strong Positive Correlation		
_____																				Positive Correlation		
_____																				Negative Correlation		
_____																				Strong Negative Correlation		
_____																				Objective Is To Minimize		
_____																				Objective Is To Maximize		
_____					Objective Is To Hit Target																	

				Column #															Competitive Analysis (0=Worst, 5=Best)								
				1																							
				Direction of Improvement: Minimize (▼), Maximize (▲), or Target (x)																							
Row #	Max Relationship Value in Row	Relative Weight	Weight / Importance	Quality Characteristics (a.k.a. "Functional Requirements" or "How's")																							
					Demanded Quality (a.k.a. "Customer Requirements" or "What's")																						
1																											
2																											
3																											
4																											
5																											
6																											
7																											
8																											
9																											
10																											
Target or Limit Value																											
Difficulty (0=Easy to Accomplish, 10=Extremely Difficult)																											
Max Relationship Value in Column																											
Weight / Importance																											
Relative Weight																											

Our Company

Competitor 1

Competitor 2

Competitor 3

Competitor 4

Competitor 5

0

1

2

3

4

5

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