

satisfying user needs & product design specification

key learning objective : how to document a pds

- target & product specification definitions
- case studies

pds is concerned with satisfying

customer needs

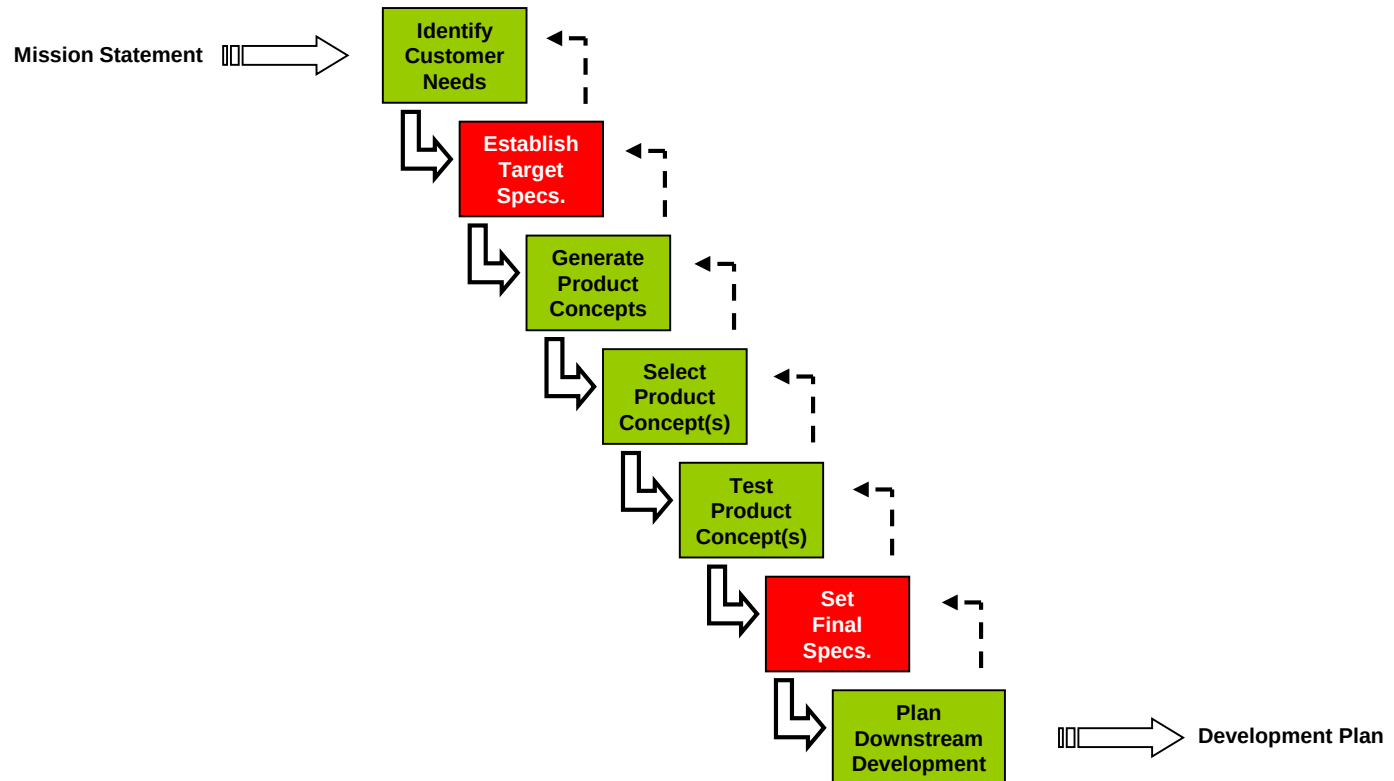
of a product or service through better understanding

pds is concerned with understanding the

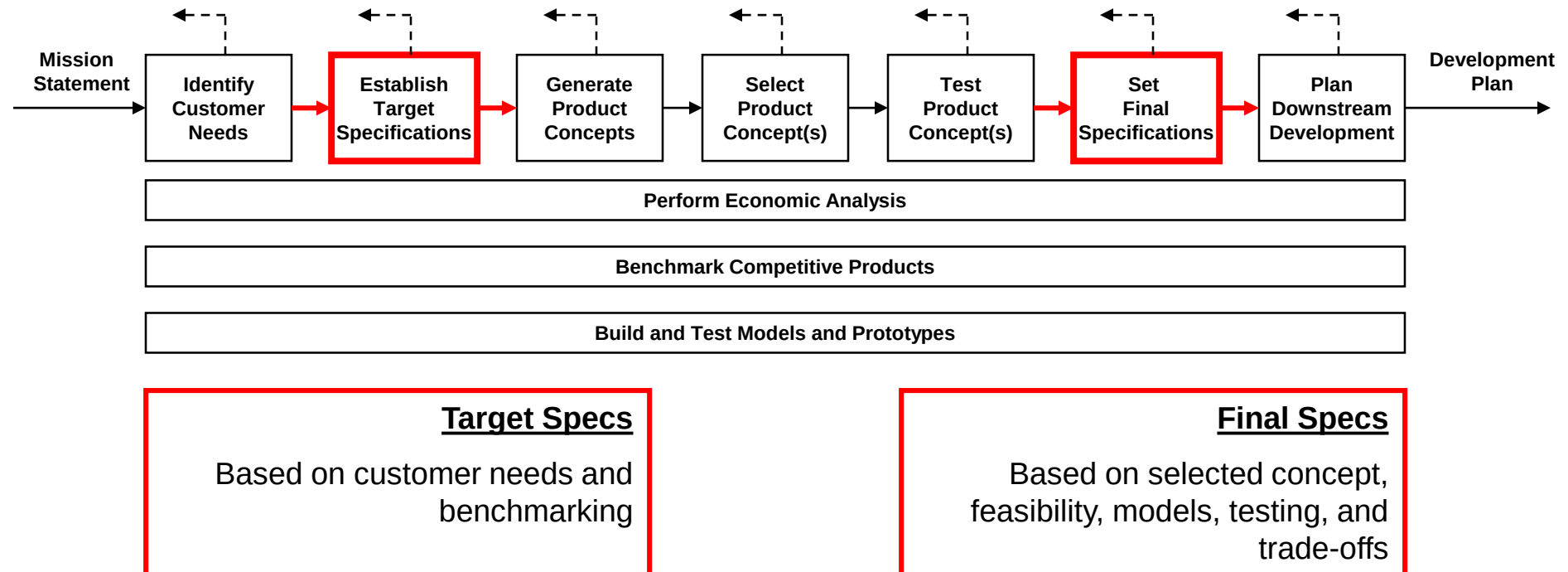
development

phases of a product or service through its evolution

concept development phase (U&E)



concept development process



the product specification process (U&E)

set target specifications

- based on customer needs and benchmarks
- develop metrics for each need (measurable characteristics)
- set ideal and acceptable values (measure of the characteristic in question)

the product specification process (U&E)

refine specifications

- based on selected concept and feasibility testing
- technical modeling
- trade-offs are critical

the product specification process (U&E)

reflect on the results and the process

- critical for ongoing improvement

pds is concerned with identifying

customer needs

and their impact on a product or service

who is the customer ?

external

consumer, purchaser, end-user, vendor, supplier

internal

everyone who touches the product or is touched by it

the process

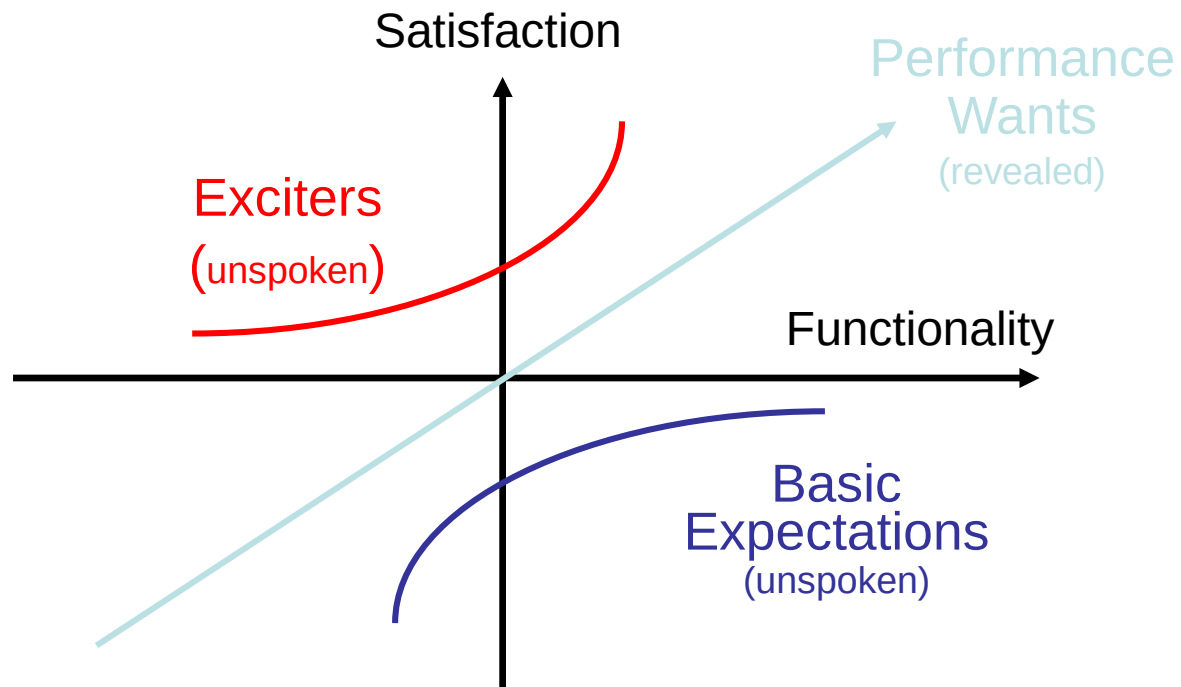
1. gather raw data from customers
2. interpret raw data in terms of customer needs
3. organize needs into a hierarchy (primary, secondary, etc.)
4. establish relative importance of each need
5. reflect on the results and the process

			Total System Expectations									
			Misfeed rate	Multifeed rate	Jam rate	Copy rate	Jam clearance time	Paper damage rate	UMC			
Voice of the Customer			A	B	C	D	E	F	G			
1	Always get a copy		O									
2	No blank sheets			O								
3	No jams to clear			O	O							
4	Medium speed					O						
5	Copies on cheap paper		O	O	O							
6	Copies on heavy paper		O		O							
7	Copies on light paper			O	O							
8	Easy to clear jams						O					
9	No paper damage							O				
10	Low cost								O			
			<50/10 ⁶	<50/10 ⁶	<100/10 ⁶	70+2/-0CPM	<20 sec	<100/10 ⁶	<\$6000			

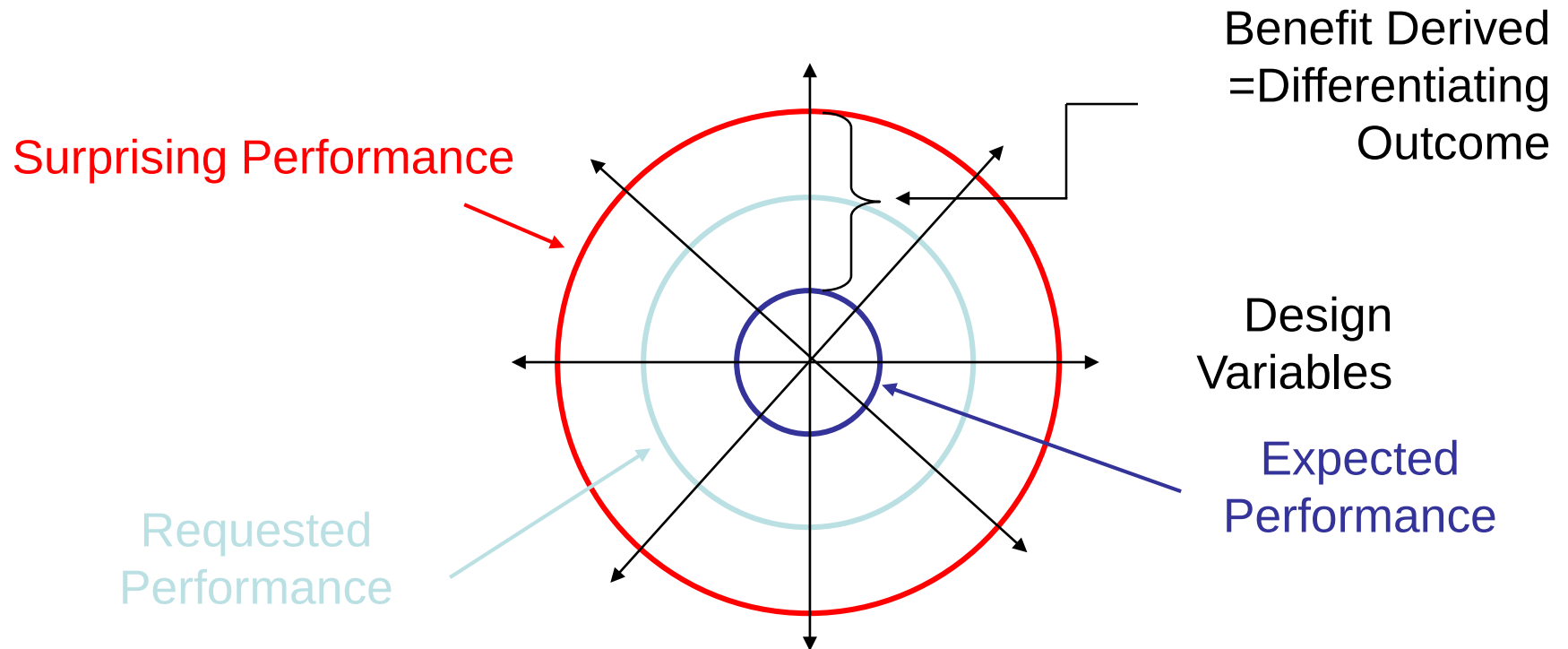
Target Specifications

Core of House of Quality Example: Xerox Copier

Kano diagram



expected, requested, and surprising performance



establish the hierarchy and relative importance of features

pds is concerned with defining target

parameters

of a product or service

project specification steps



requirements

define what the customer wants
may be subjective, qualitative,
difficult to measure

vs.

specification

define what will actually be delivered
respond to:
customer's needs, organizational
capabilities, technology & resource
availability
Always measurable

specifications

1.

1. **precisely** define the end product or result
2. **quantify** the customer's needs and specify the degree to which these needs will be met
3. **should not** limit how the customer's needs are to be addressed

specifications

2.

Consist of:

1. **metric** - characteristic being measured
2. **value** or range of values
3. **unit** of measurement

the process

1. **focus** on the end **RESULTS**
2. **do not** build your ideas of **HOW** to achieve the results into the specifications
3. **make sure** that each requirement is covered
4. **make sure** that the customer's interests are protected
5. **make sure** that your interests are protected

the pds is the yardstick for

determining

project success