



Medical Devices 2007 Ten Best Practices in Customer -Driven Innovation Outcomes

Best Practices Summary

Wayne Mackey
wmackey@pdcinc.com

Sheila Mello
smello@pdcinc.com

Annemari Cooley
annemari.cooley@welchallyn.com

Best Practices	Why?
1. Visit a cross section of people who do or would use your product or service to solve their own problems	Achieve the greatest depth and breadth of market inputs
2. Observe, interview and probe in customer environment	Gain context to understand what is getting in their way of doing their jobs
3. “Guide” with open - ended questions	“Chance favors the prepared mind”
4. Complete transcript. If you don’t have it word for word it didn’t happen	No filtering. “The real thing”
5. Information gathered and processed by cross functional teams	Internalize the experience to reach rapid consensus across team
6. Create a <i>story</i> with images	Understand what it’s like to experience the customers’ problems
7. Translate into measurable customer requirements	Measure meeting customer need, not meeting functional spec
8. Survey for quantitative results	Answers “How do you know that?” with confidence
9. Drive investment by competitive positioning and unmet needs of the customer	Put your dollars where the value is
10. Innovate where gaps that customer’s value	Create pull, not push

1. Customer Visitation



- Visit
 - A cross section of people
 - People who do or would use your product or service to solve their own problems
 - People who use other existing solutions than yours if you have one
- Visit enough people to gain an understanding of a high percentage of problems (Typically 15-25 interviews per distinct market segment)

2. Interview & Observe in Customer's Environment



- Observe before and after interview
 - Before to provide a foundation for your interviews
 - After because you will see different things
- Look for and probe for examples of:
 - Expectations, fears, doubts, wishes, mistakes
 - Combining or using products in unintended ways or locations
 - Creating products on their own to solve their problems
 - Frustration or complacency about results
 - Preparation activities

3. Open-ended Interview Guide

Ask for examples! What problem does that solve? How did that make you feel? How does that effect your ability to do your job? Likes & Dislikes?

4. Describe your typical day as it relates to MISSION. Include likes, dislikes, examples. Best case? Worst case?

a. ?

5. Describe a typical day of PRODUCT? Likes? Dislikes? Best day? Worst day?

a. ?

6. What about your job in MISSION gets under your skin or makes your blood boil?

7. Describe your ideal job as it relates to MISSION?

- What problem would this solve?

8. Describe the ideal MISSION PRODUCT?

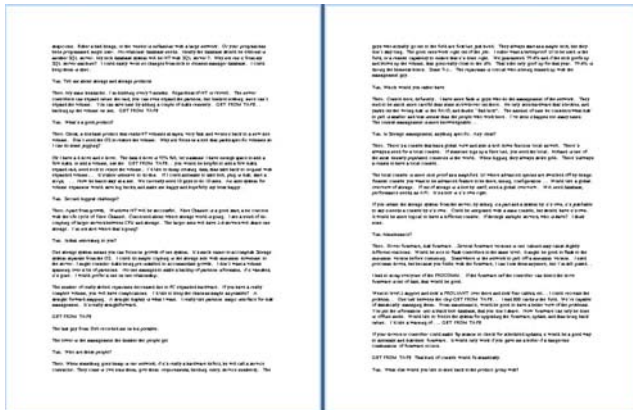
- What problem would this solve?

9. Describe the installation, training, maintenance, repair, and support issues you have with your MISSION. Likes? Dislikes?

10. Compare and contrast the way you currently do MISSION to what you see in the future?

- Interview with open ended questions and probe, probe, probe!
 - Your favorite questions should be:
 - “What problem does that cause for you?” or
 - “Could you explain and give an example?”
- Don't ask
 - Leading questions
 - Closed ended questions
- Practice! Practice! Practice!

4. Complete Transcript



- Get a complete transcript of each interview
- If you don't have it word for word, it didn't happen
- Eliminates the filters that you apply when you listen
- Audio Tape if possible, else word for word note taking

5. Cross-functional Team



- Gather and process the customer data with cross functional teams
- Build in consensus to your process
- Gain differing perspectives

6. Create a Story with Images

WE HATE GETTING BLOOD TAKEN

NO MORE BLOOD!

...IF AT ALL WE HAVE A BATTERY OF TESTS... WE WILL USE EVEN 20ML SYRINGE. LOOKING AT THE SIZE OF THE SYRINGE PEOPLE OBVIOUSLY GET SCARED.

THE PATIENTS LOOKS AT YOU THAT YOU ARE DRAWING THE BLOOD IN 4 OR 5 TUBES AND ONE TUBE THAT IS VERY LONG (ESR). THEY THINK WE ARE WASTING THE BLOOD OR USING IT FOR SOME OTHER PURPOSE.

PATIENTS ARE ALARMED AT THE QUANTITY OF BLOOD THAT WE COLLECT..."WHY DO YOU NEED SO MUCH, I'M ALREADY WEAK."

REDRAWS PISS PEOPLE OFF

THE BAD PART IS EXPLAINING TO THE PATIENT WHAT HAS HAPPENED TO THEIR BLOOD AND WHY WE ARE REPEATING. THE PATIENT GETS VERY APPREHENSIVE. THEY WANT TO KNOW WHY ARE YOU REPEATING? AM I REALLY OK?

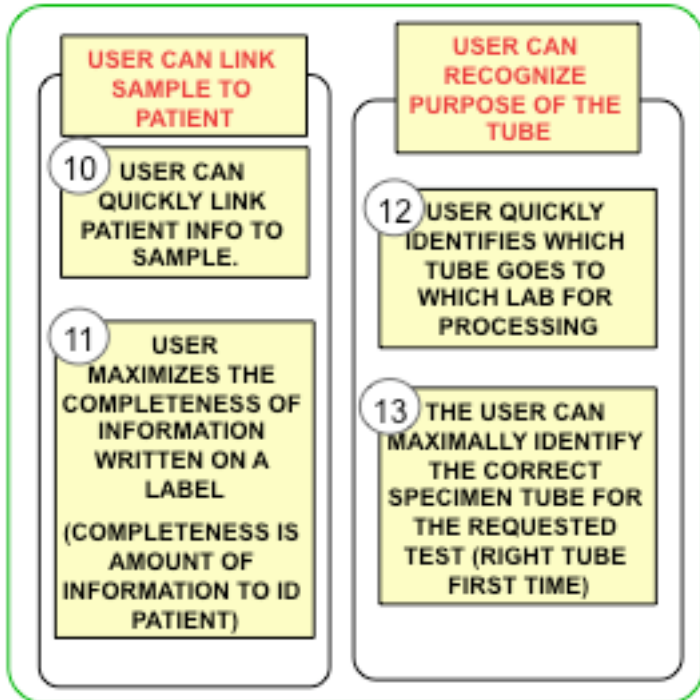
SOMETIMES THE SAMPLES ARE LYSED...WE REPEAT FROM THE PATIENTS. SOMETIMES PATIENTS WILL AGREE. BUT SOMETIMES PATIENTS WILL ARGUE...ONCE WE HAVE GIVEN SAMPLES WE WANT RESULTS...WE REALLY FEEL BAD.

WE HAD TO REPEAT SAMPLES...AND THEN THE PATIENTS THEY USED TO GRUMBLE, HOW COULD YOU GIVE ME SECOND PRICK.

- Extract key images of your customers from your transcripts
- Creates a story of what it is like to be a person with problems your product would solve

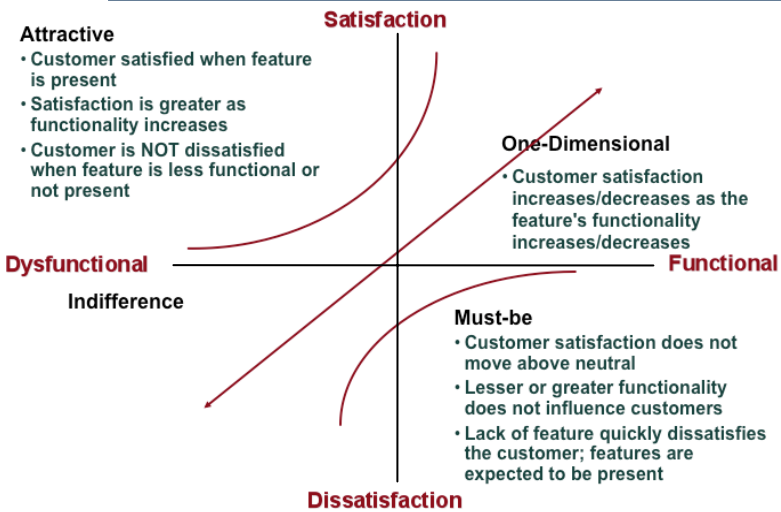
7. Translate Transcripts Into Requirements

USER NEEDS TO AVOID ID MISTAKES



- Translate what the customer / consumer told you into measurable customer requirements
- Each requirement has
 - A “who” that has the problem
 - A verb describing the missing functionality they have
 - A scalable component to enable you to compare solutions and see which one is best, next, etc.
- Remove ambiguity
- Don't include
 - Targets
 - Solutions

8. Quantitative Results Using Survey



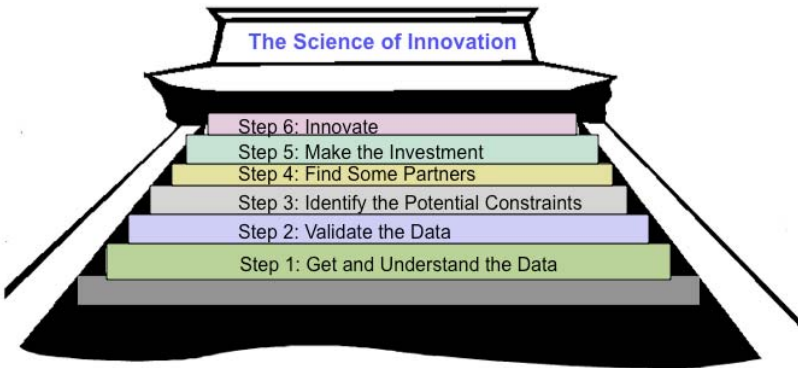
- Get statistically significant results
- Prioritize, validate, analyze each key customer requirement

9. Drive Investment to Opportunities

REQUIRE- MENT	#	ALL			Segment 1			Segment 2			What To Do?	Solution 1		Solution 2		Solution 3		Solution 4		
		RSOR	IBT	IWT	RSOR	IBT	IWT	RSOR	IBT	IWT		RAW	WGT	RAW	WGT	RAW	WGT	RAW	WGT	
Blue Label	Red	REQUIREMENT 1	368	48	41	135	42	49	44	54	29	Nothing	0	0	-1	-49	0	0	0	0
Blue Label	Red	REQUIREMENT 2	45	41	35	23	35	37	21	43	39	Nothing	-1	-37	-1	-37	1	35	1	35
Blue Label	Red	REQUIREMENT 3	456	52	33	135	45	33	96	60	30	Nothing	-1	-33	-1	-33	1	45	1	45
Blue Label	Red	REQUIREMENT 4	108	54	37	23	48	30	69	61	38	WOW	1	61	1	61	0	0	1	61
Blue Label	Red	REQUIREMENT 5	1596	70	51	168	61	48	420	67	53	Parity +	1	67	0	0	0	0	0	0
Blue Label	Red	REQUIREMENT 6	108	63	47	0	48	48	21	66	45	WOW	1	66	0	0	1	66	0	0
Blue Label	Red	REQUIREMENT 7	108	50	36	0	33	40	0	53	42	WOW	1	53	-1	-42	-1	-42	0	0
Blue Label	Red	REQUIREMENT 8	621	57	40	104	49	35	21	59	39	WOW	1	59	0	0	1	59	0	0
											540	-70	301	-209						
Technical Risk											H	L	M	L						
Product Cost											\$100	\$90	\$95	\$95						
Development Cost											H	L	M	L						
Resource Skill											OK	OK	OK	OK						
Schedule											9mths	6mths	6mths	6mths						
Capital Cost											\$1M	\$5M	\$7.5M	\$5M						
Manufacturing Risk											L	M	L	L						

- Match investments to customer value
- Evaluate alternative competitive offerings to create sufficient customer value
- Balance selection against business constraints

10. Innovate to Fill Gaps



- Use tools and techniques to generate, strengthen, and shape ideas, build competitive advantages, and develop paths for opportunity
- Develop the most innovative, creative solutions possible
- Stretch the envelope of what is currently considered as means to meeting the customer's requirements