

Context & Problem Statement

For the new LED bulb

Context

LED¹ – a new lighting technology

 Energy-efficient, long-life, compact

Competition

- Incandescent and CFLs²
- GE³ ~50% market share
- Sold through wholesale and retail channels

Problem statement

How should the new Philips LED be positioned in the market?

- Whom to target?
- What channels to sell through?
- At what price point?



Executive Summary

Key content of the deck



 We must avoid the same mistakes made with the Super Bulb

- Which segment(s) to target?
- At which price should we sell?
- Retailer margin of 55% too high

Situation

Problem

Impact

ct Solution

 Unless the Retailers are willing to reduce their margin to 40%, the LED bulb will not be profitable in the Consumer segment

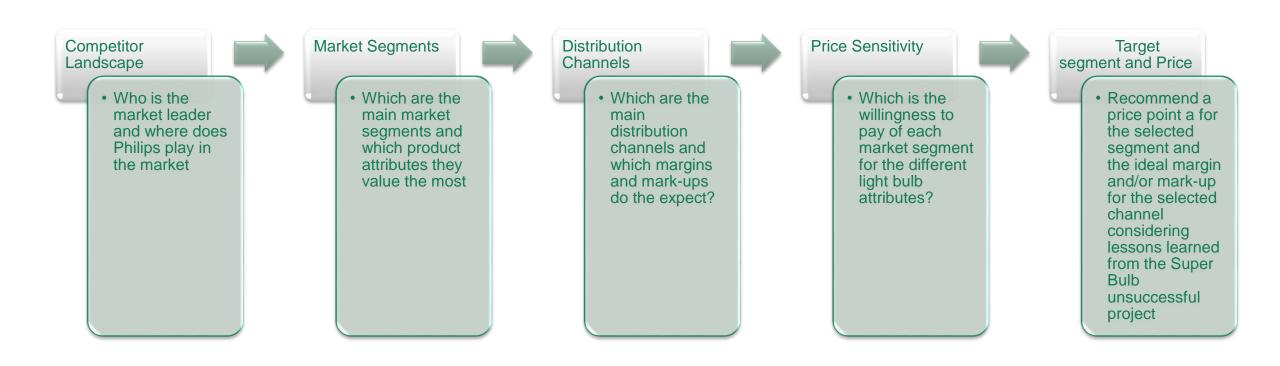
- Key focus on the Business segment at a price point of \$11 per LED bulb and Distributor mark-up of 20%
- Sell to Consumers at \$9 only if the Retailer margin is reduced to 40%



Approach

The thinking process to address the problem statement

The presentation follows a five step approach to address the problem statement and develop a recommendation





Analysis

From the data that is available

The Competitor Landscape

- The market leader is General Electric with a share of 51% followed by Philips with a share of 19%
- Philips competes through innovative products like the first generation of energy-saving Super Bulb in 1974 and now with the newer LED bulb

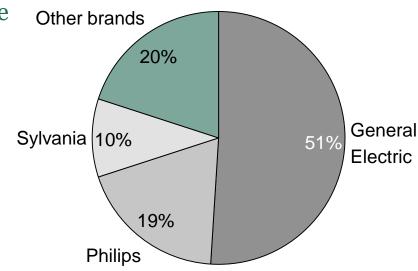
There are two main segments in the light bulb market:

Consumer Segment served by Retailers

- The Consumer segment is price sensitive because this is the attribute with the highest weight (46%)
- This segment will buy smaller quantities
- Consumers who live in states with higher electricity rates will be more interested in the LED bulbs

Business Segment served by Distributors

- The Business segment gives more importance to the number of Watts that are consumed by a LED bulb followed by the number of Lumens which is the brightness of the bulb (see Appendix D)
- This segment purchases large volumes



Max	$\overline{U_k}$	$\underline{U_k}$	Subtraction	Weight	Rank
Manufacturer	5.1	(8.0)	13.1	12%	4
Watts	12.5	(9.2)	21.7	20%	3
Lumens	9.1	(15.5)	24.6	22%	2
Price	30.7	(19.8)	50.5	46%	1
-	Total		109.9	100%	

Business Utilitie	25				
Max	$\overline{U_k}$	$\underline{U_k}$	Subtraction	Weight	Rank
Manufacturer	2.2	(4.3)	6.5	5%	4
Watts	23.8	(23.3)	47.1	39%	1
Lumens	21.4	(23.7)	45.1	37%	2
Price	11.9	(10.7)	22.6	19%	3
	Total		121.3	100%	

Average Rate Incandescent LED Watts 75 Average Life 750 18,000 0.127 0.127 Rates Cost 0.40 4.00 Commercial Discount 15% 15% Number of Bulbs 24 1 Consumer 171.45 20.57 Power Bulbs 9.60 4.00 Total Cost 181.05 24.57 156.48 Value Creation Commercial Power 145.73 17.49 Bulbs 9.60 4.00 Total Cost 155.33 21.49 Value Creation 133.84

Key Findings

Value Creation (see Appendix A for details)

- Higher value is created with the LED bulb compared to the Incandescent bulb because it consumes less Watts (9 vs 75) and one LED bulb has the average life of twenty four Incandescent bulbs.
- The Consumer segment vis-à-vis the Commercial segment because
 Price Sensitivity (see Appendix B and C for details)
- Based on the Conjoint Analysis data, Price sensitivity is higher in the Consumer segment compared to the Business segment which is served through the Retailer channel where the margin is 55%, meaning less profit for Philips



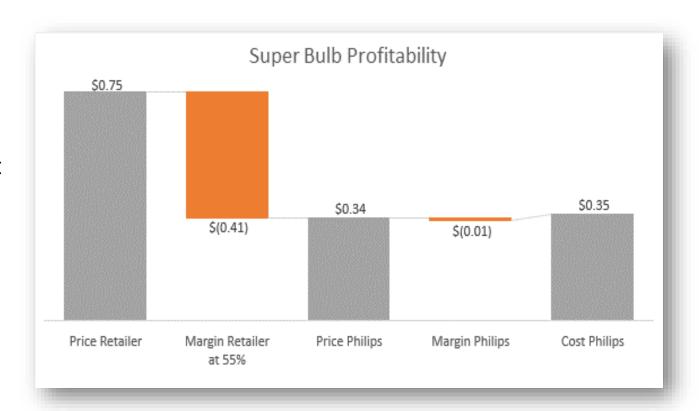


Implications

What we must consider while addressing the problem statement

Lessons Learned from the Super Bulb Project

- When Philips launched the Super Bulb at 75 cents to the Consumer segment through the Retailer channel while keeping the 55% margin, we lost 1 cent with every bulb that was sold
- We must avoid making the same mistake under the LED project, therefore it is important to for us to take into account the cost of \$4 to ensure we only sell to segments and through channels which are profitable.
- if the margin for Philips comes out negative again under the price point where Consumers are willing to pay, it is then imperative for Philips to renegotiate a lower margin (under 55%) with the Retail channel to avoid the same mistake considering the cost of \$4 of a LED bulb





Recommendations

Main Target segment is Business through Distributors

Business Segment through Distributors

Top priority is to sell to this segment since it is less sensitive to price

Selling Price of Distributors to Business at \$11.00 (see Appendix G for details)

- Selling price of Philips \$9.17
- Distributor margin will be \$1.83 at 20% mark-up
- Philips margin will be \$5.17

Comments

- Willingness to pay of this segment has a positive utility just at \$11
- Any price above \$13 will not be well received by the Business segment according to Appendix G
- This segment tends to buy large volumes, therefore will be profitable for Philips

Top choice

Consumer Segment through Retailers

Sell to this segment only if the margin of the Retailers can be reduced to 40% (otherwise don't sell the LED bulb to this segment and channel to avoid a loss similar to the Super Bulb)

Selling Price of Retailers to Consumers at \$9.00 (see Appendices E and F for details)

- Selling price of Philips \$5.40
- Retailer margin will be \$3.60 at 40% margin (reduced from current 55%)
- Philips margin will be \$1.40

Comments

- 1) Willingness to pay of this segment has a positive utility just at \$9
- 2) Any price below \$9 drives a loss and above \$11 will not be well received by the consumers
- 3) If the Retailer margin remains at 55%, Philips will only make a profit of 5 cents



Next Steps

Critical activities to be completed

For Consumer Segment

Rely on the 4 plus
 profitability drivers to
 negotiate a margin
 reduction from 55% to
 40% with Retailers to
 ensure Philips makes
 profit on the LED product
 at a price point of \$9

For Business Segment

Philips must start
 Research and
 Development to launch a
 5 Watts LED bulb for this
 segment which could be
 priced at \$12 or \$13 (see
 Appendix G)

Profitability Drivers of the LED Bulb for Retailers

- Philips brand power
- LED bulb size (space on shelf)
- LED bulb cost
- Cross-selling opportunities for Retailers

- Price awareness
- LED bulb shelf turnover

Appendix

Appendix A: Value Creation of the LED Bulb

Higher value created in the Consumer segment compared to the Commercial Segment for the LED Bulb

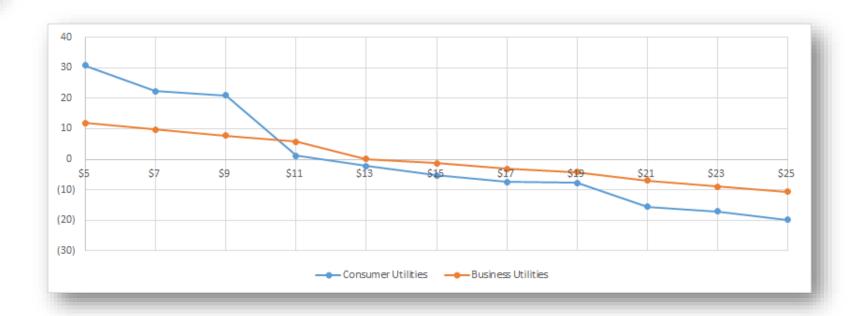
		Lowes	st Rate			Ave	rage			Highe	st Rate	
	Inca	ndescent		LED	Inca	ndescent		LED	Inca	ndescent		LED
Watts		75		9		75		9		75		9
Average Life		750		18,000		750		18,000		750		18,000
Rates	\$	0.091	\$	0.091	\$	0.127	\$	0.127	\$	0.296	\$	0.296
Cost	\$	0.40	\$	4.00	\$	0.40	\$	4.00	\$	0.40	\$	4.00
Commercial Discount		15%		15%		15%		15%		15%		159
Number of Bulbs		24		1		24		1		24		1
Consumer												
Power	\$	122.85	\$	14.74	\$	171.45	\$	20.57	\$	399.60	\$	47.95
Bulbs	\$	9.60	\$	4.00	\$	9.60	\$	4.00	\$	9.60	\$	4.00
Total Cost	\$	132.45	\$	18.74	\$	181.05	\$	24.57	\$	409.20	\$	51.95
Value Creation			\$	113.71			\$	156.48			\$	357.25
Commercial												
Power	\$	104.42	\$	12.53	\$	145.73	\$	17.49	\$	339.66	\$	40.76
Bulbs	\$	9.60	\$	4.00	\$	9.60	\$	4.00	\$	9.60	\$	4.00
Total Cost	\$	114.02	\$	16.53	\$	155.33	\$	21.49	\$	349.26	\$	44.76
Value Creation			Ś	97.49			Ś	133.84			Ś	304.50

Appendix B: Price Sensitivity per Segment

Price	Consumer Utilities	Business Utilities
\$5.00	30.7	11.9
\$7.00	22.3	9.8
\$9.00	21.0	7.7
\$11.00	1.1	5.7
\$13.00	(2.2)	0.1
\$15.00	(5.3)	(1.3)
\$17.00	(7.4)	(3.1)
\$19.00	(7.7)	(4.2)
\$21.00	(15.6)	(6.9)
\$23.00	(17.1)	(9.0)
\$25.00	(19.8)	(10.7)

Important findings based the conjoint analysis data

- Price sensitivity is higher in the Consumer segment compared to the Business segment
- The Consumer segment is served through the Retailer channel where the margin is 55%, meaning less profit for Philips
- The Business segment is served through distributors with lower margin, meaning more profit for Philips



Appendix C: Conjoint Analysis

While both Consumers and Business have a preference for LED bulbs with lower Watts, this feature is important for the Business segment.

Only price points \$11 and \$9 have positive utility while allowing Philips to make a profit.

Attribute	Code	Level	Consumer Utilities	Business Utilities	Difference
Manufacturer	M1	GE	5.1	2.2	(2.9)
	M2	CREE	(8.0)	(4.3)	3.7
	M3	Philips	2.9	2.1	(0.8)
Watts	W1	25	(9.2)	(23.3)	(14.1)
	W2	20	(7.0)	(12.9)	(5.9)
	W3	15	(2.4)	0.3	2.7
	W4	10	6.1	12.1	6.0
	W5	5	12.5	23.8	11.3
Lumens	L1	300	(15.5)	(23.7)	(8.2)
	L2	500	(7.7)	(18.5)	(10.8)
	L3	700	(0.4)	(2.1)	(1.7)
	L4	900	9.1	3.0	(6.1)
	L5	1100	9.0	19.9	10.9
	L6	1300	9.1	21.4	12.3
Price	P1	\$5.00	30.7	11.9	(18.8)
	P2	\$7.00	22.3	9.8	(12.5)
	P3	\$9.00	21.0	7.7	(13.3)
	P4	\$11.00	1.1	5.7	4.6
	P5	\$13.00	(2.2)	0.1	2.3
	P6	\$15.00	(5.3)	(1.3)	4.0
	P7	\$17.00	(7.4)	(3.1)	4.3
	P8	\$19.00	(7.7)	(4.2)	3.5
	P9	\$21.00	(15.6)	(6.9)	8.7
	P10	\$23.00	(17.1)	(9.0)	8.1
	P11	\$25.00	(19.8)	(10.7)	9.1

Appendix D: Conjoint Analysis

$$I_{k} = \frac{\overline{U_{k}} - \underline{U_{k}}}{\sum_{k \in K} \overline{U_{k}} - \underline{U_{k}}}$$

Consumer Utilities

Max	$\overline{U_k}$	$\underline{U_k}$	Subtraction	Weight	Rank
Manufacturer	5.1	(8.0)	13.1	12%	4
Watts	12.5	(9.2)	21.7	20%	3
Lumens	9.1	(15.5)	24.6	22%	2
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Business Utilities

Max	$\overline{U_k}$	U_k	Subtraction	Weight	Rank
Manufacturer	2.2	(4.3)	6.5	5%	4
Watts	23.8	(23.3)	47.1	39%	1
Lumens	21.4	(23.7)	45.1	37%	2
Price	11.9	(10.7)	22.6	19%	3
	Total		121.3	100%	

For Consumers the most important attribute is Price while for Business the most important attribute is Watts followed by Lumens.

This confirms that Business is less sensitive to Price compared to Consumers

Appendix E: Conjoint Analysis – Consumer Segment Pricing at 55% margin

Consumer U	Itilities												Margin	55%			
				Attril	outes		Code			Utilitie	28						
Package Numbe *	Manufacturor	Туре	ľv	W/	Ţ	P	*	M	w	L_u_	P_UT	Total_;	R _{price}	M _{price}	R _{margin}	Cost 🔻	M _{margir}
214	CREE		M2	W4	L4	P4	M2_W4_L4_P4	(8.00)	6.10	9.10	1.10	8.30	\$11.00	\$4.95	\$6.05	\$4.00	\$0.95
244	CREE		M2	W4	L4	Р3	M2_W4_L4_P3	(8.00)	6.10	9.10	21.00	28.20	\$9.00	\$4.05	\$4.95	\$4.00	\$0.05
544	GE		M1	W4	L4	P4	M1_W4_L4_P4	5.10	6.10	9.10	1.10	21.40	\$11.00	\$4.95	\$6.05	\$4.00	\$0.95
574	GE		M1	W4	L4	Р3	M1_W4_L4_P3	5.10	6.10	9.10	21.00	41.30	\$9.00	\$4.05	\$4.95	\$4.00	\$0.05
874	Philips		M3	W4	L4	P4	M3_W4_L4_P4	2.90	6.10	9.10	1.10	19.20	\$11.00	\$4.95	\$6.05	\$4.00	\$0.95
904	Philips		M3	W4	L4	Р3	M3 W4 L4 P3	2.90	6.10	9.10	21.00	39.10	\$9.00	\$4.05	\$4.95	\$4.00	\$0.05

Ideal price point for the LED bulb in this segment is \$9, but Philips margin is barely 5 cents under a Retailer margin of 55%.

Pricing the LED bulb at \$11 for this segment at 55% Retailer margin does result in a 95 cent margin for Philips, but the utility ratio drops to slightly above zero (1.10 vs 21.00). Philips must negotiate a lower Retailer margin.

Appendix F: Conjoint Analysis – Consumer Segment Pricing at 40% margin

Consumer U	Itilities												Margin	40%			
				Attrib	utes		Code			Utilitie	28						
Package Numbe *	Manufactur	Туре	ľv	W,T	Ţ	P_	~	M	w	L_U_	P_U_	Total	R _{price}	M _{price}	R _{margin} 🕌	Cost	M _{margir}
244	CREE		M2	W4	L4	P3	M2_W4_L4_P3	(8.00)	6.10	9.10	21.00	28.20	\$9.00	\$5.40	\$3.60	\$4.00	\$1.40
574	GE		M1	W4	L4	P3	M1_W4_L4_P3	5.10	6.10	9.10	21.00	41.30	\$9.00	\$5.40	\$3.60	\$4.00	\$1.40
904	Philips		М3	W4	L4	P3	M3_W4_L4_P3	2.90	6.10	9.10	21.00	39.10	\$9.00	\$5.40	\$3.60	\$4.00	\$1.40

Ideal price point for the LED bulb in this segment is \$9 with a Retailer margin of 40% for a \$1.40 of margin for Philips.

Appendix G: Conjoint Analysis – Business Segment Pricing at 20% mark-up

Business Ut	ilities												Mark-up	20%			
				Attrik	outes		Code			Utilitie	es						
Package Numbe 🔻	Manufactur	Туре	L/v	W/ "T	Ţ	P	▼	M	w	L_U_	P_μ_	Total	D _{price}	M _{price}	D _{margin}	Cost	M _{margir}
181	CREE		M2	W5	L4	P5	M2_W5_L4_P5	(4.30)	23.80	3.00	0.10	22.60	\$13.00	\$10.83	\$2.17	\$4.00	\$6.83
184	CREE		M2	W4	L4	P5	M2_W4_L4_P5	(4.30)	12.10	3.00	0.10	10.90	\$13.00	\$10.83	\$2.17	\$4.00	\$6.83
211	CREE		M2	W5	L4	P4	M2_W5_L4_P4	(4.30)	23.80	3.00	5.70	28.20	\$11.00	\$9.17	\$1.83	\$4.00	\$5.17
214	CREE		M2	W4	L4	P4	M2_W4_L4_P4	(4.30)	12.10	3.00	5.70	16.50	\$11.00	\$9.17	\$1.83	\$4.00	\$5.17
511	GE		M1	W5	L4	P5	M1_W5_L4_P5	2.20	23.80	3.00	0.10	29.10	\$13.00	\$10.83	\$2.17	\$4.00	\$6.83
514	GE		M1	W4	L4	P5	M1_W4_L4_P5	2.20	12.10	3.00	0.10	17.40	\$13.00	\$10.83	\$2.17	\$4.00	\$6.83
541	GE		M1	W5	L4	P4	M1_W5_L4_P4	2.20	23.80	3.00	5.70	34.70	\$11.00	\$9.17	\$1.83	\$4.00	\$5.17
544	GE		M1	W4	L4	P4	M1_W4_L4_P4	2.20	12.10	3.00	5.70	23.00	\$11.00	\$9.17	\$1.83	\$4.00	\$5.17
841	Philips		M3	W5	L4	P5	M3_W5_L4_P5	2.10	23.80	3.00	0.10	29.00	\$13.00	\$10.83	\$2.17	\$4.00	\$6.83
844	Philips		М3	W4	L4	P5	M3_W4_L4_P5	2.10	12.10	3.00	0.10	17.30	\$13.00	\$10.83	\$2.17	\$4.00	\$6.83
871	Philips		M3	W5	L4	P4	M3_W5_L4_P4	2.10	23.80	3.00	5.70	34.60	\$11.00	\$9.17	\$1.83	\$4.00	\$5.17
874	Philips		M3	W4	L4	P4	M3 W4 L4 P4	2.10	12.10	3.00	5.70	22.90	\$11.00	\$9.17	\$1.83	\$4.00	\$5.17

Ideal price point for the LED bulb in this segment is \$11 with a margin of \$5.17 for Philips.

Please note that Business segment has a higher preference for a 5 Watts bulb (utility of 23.80) compared to 10 Watts (utility of 12.10). Philips must focus their Research and Development effort in launching a 5 Watt bulb in the market before any of the competitors does first.