Profit Forecasts Using Data from Brita's BASES Simulated Test Market

As part of the Brita case, you need to use the data from the simulate store (BASES) to forecast and analyze potential profit from different marketing scenarios.
I've created a problem set on simulated stores to walk you through the concepts. After you master the concepts you should find this worksheet easier.

This worksheet helps you analyze the data in the Brita case. You will gain insight by by making some critical assumptions for the cells in column P.
The assumptions are entered in cells P29 to P43. Current values are placeholders only and are not representative.

The formulae in the worksheet predict outcomes based on the assumptions you make in column P.
Don't guess. You can use case facts to zero in on good assumptions (although some judgment is required).
This worksheet is formatted to print on a single page if you want to bring to class.

We begin with Rows 18 through 29 and Columns A through O. This table uses the data from the simulated store to calculate the contribution of faucet filters and systems, but does not account for cannibalization and any savings in pitcher marketing costs. However, it does adjust for the filter growth factor adjustment.

This column assumes a ratio during growth of filters/system and a lifetime number of filters/system. (See column P.)

Data from case.

Columns M, N, and O are calculated from other values as indicated. Contribution is that of faucent filters & systems before adjusting for cannibalization.)

Columns B through I come straight from the BASES forecasts on page 9 of the case. Average price calculated as per case.

Scenario	Strategy	List Price	Min Price	Average Price	Promo & Trade ($M)	Adv. ($M)	Competition	Forecast Faucet Systems (millions)	Forecast Faucet Filters (millions)	Contritubiton per filter	Cost of system	Contrib ($M) Before mkting (Systems + Filters)	Marketing Cost (Promo, Trade, Adv.)	Contrib ($M) the scenario in column A
1	HLL	$39.99	$34.99	$36.49	$7.0	$5.4	low	0.340	0.10	$3.00	$15.00	$7.6	$12.4	**($4.8)**
2	HLL	$39.99	$34.99	$36.49	$7.0	$5.4	current	0.350	0.11	$3.00	$15.00	$7.8	$12.4	**($4.6)**
3	LLL	$34.99	$29.99	$31.49	$7.0	$5.4	low	0.395	0.12	$3.00	$15.00	$6.9	$12.4	**($5.5)**
4	HHH	$39.99	$34.99	$36.49	$11.4	$11.1	low	0.970	0.29	$3.00	$15.00	$21.7	$22.5	**($0.8)**
5	LHH	$34.99	$29.99	$31.49	$11.4	$11.1	low	1.125	0.34	$3.00	$15.00	$19.6	$22.5	**($2.9)**
6	LHH	$34.99	$29.99	$31.49	$11.4	$11.1	current	1.160	0.35	$3.00	$15.00	$20.2	$22.5	**($2.3)**
7	HHV	$39.99	$34.99	$36.49	$11.4	$15.0	current	1.205	0.36	$3.00	$15.00	$27.0	$26.4	**$0.6**
8	HVV	$39.99	$34.99	$36.49	$15.8	$15.0	current	1.245	0.37	$3.00	$15.00	$27.9	$30.8	**($2.9)**
9	LVH	$34.99	$29.99	$31.49	$15.8	$11.1	current	1.350	0.41	$3.00	$15.00	$23.5	$26.9	**($3.4)**
10	LVV	$34.99	$29.99	$31.49	$15.8	$15.0	low	1.395	0.42	$3.00	$15.00	$24.3	$30.8	**($6.5)**

Faucet Systems Only

In Rows 39 to 50, Columns B through J adjust faucet filter/system contribution for cannibalization. The results depend upon the assumptions in column P.

Based on an assumption of cannibalization

Placeholder value. Calculate from case.

This column assumes a ratio during growth of filters/system and a lifetime number of filters/system.

Placeholder value. Calculate from case.

Calculated from other values.

Assume some ratio of faucet marketing costs (you should change the assumption)

Calculated from other values.

Scenario	Strategy	Forecast Lost Pitchers	Contribution per Pitcher	Forecast Lost Filters	Contribution per Filter	Lost Profit due to Cannibalization	Contribution after cannibalization	Estimated savings in pitcher mkt cost	Contribution net of everything
1	HLL	0.170	$3.00	0.425	$2.00	($1.4)	($6.1)	$2.5	($3.7)
2	HLL	0.175	$3.00	0.438	$2.00	($1.4)	($6.0)	$2.5	($3.5)
3	LLL	0.198	$3.00	0.494	$2.00	($1.6)	($7.1)	$2.5	($4.6)
4	HHH	0.485	$3.00	1.213	$2.00	($3.9)	($4.7)	$4.5	($0.2)
5	LHH	0.563	$3.00	1.406	$2.00	($4.5)	($7.4)	$4.5	($2.9)
6	LHH	0.580	$3.00	1.450	$2.00	($4.6)	($7.0)	$4.5	($2.5)
7	HHV	0.603	$3.00	1.506	$2.00	($4.8)	($4.2)	$5.3	$1.0
8	HVV	0.623	$3.00	1.556	$2.00	($5.0)	($7.9)	$6.2	($1.7)
9	LVH	0.675	$3.00	1.688	$2.00	($5.4)	($8.8)	$5.4	($3.4)
10	LVV	0.698	$3.00	1.744	$2.00	($5.6)	($12.1)	$6.2	($6.0)

After Cannibalization

Use your judgment and case facts to change these placeholder values to values that make sense. With the right values you can use the BASES forecasts to select the best marketing tactics.

		Default Values
Lifetime number filters per faucet system (use case facts)	**1**	1
Ratio due to faucet growth vs. steady state (filters/system): (see comments starting in cell B52)	**30%**	30%
Cannibalization (lost pitchers systems per faucet system sold): (use results from BASES)	**50%**	50%
Contribution per pitcher (calculate from case)	**$3.00**	$3.00
Lifetime number of filters per pitcher system (can be calculated from case facts on page 4, but be careful, it is not 2.5)	**5**	5
Ratio due to pitcher growth (filters/system, forecast spreadsheet): (see comments starting in cell B52)	**50%**	50%
Contribution per pitcher filter (calculate from case)	**$2.00**	$2.00
Percent reduction in pitcher marketing	**20%**	20

We entered an arbitray assumption for synergies in marketing faucets and pitchers in P49 (20% of pitcher marketing).
You are encourged to marshall case facts and use your judgment to estimate the reduction in the marketing costs for pitchers due to synergies.

With some thought about the meaning of the ratios of filters per system (P35 for faucets, P43 for pitchers), you can develop a back-of-the-envelope formula.
You can then calculate long term values. This is extra credit should you write up the case.

These ratios are extremely important and are a key lesson from the case. But they are not obvious.
The last set of questions in the simulated store problem set attempt to walk you through this ratio.
You can also use the "Forecast of Systems & Filters" worksheet to explore this ratio.
Perhaps the following explanation might help further.

Suppose you estimate that, over the lifetime of a customer, the customer will buy X filters for every system sold.
However, these sales do not happen immediately. They happen over the lifttime of the customer.
If sales are growing rapidly, systems sales are growing, but the firm is only beginning to get filter sales. As a result, during the growth years, the ratio of filters sold to systems sold will be less than X
The actual ratio depends upon how rapidly the market is growing. See if you can derive the correct ratio. A graph might help. For example, assume a simple growth curve auch as linear growth.
All too often, firms mistake the observed ratio of filter sales to system sales (blades to razors) and use that ratio (incorrectly) to compute the lifetime value of filter sales from a single system sale.

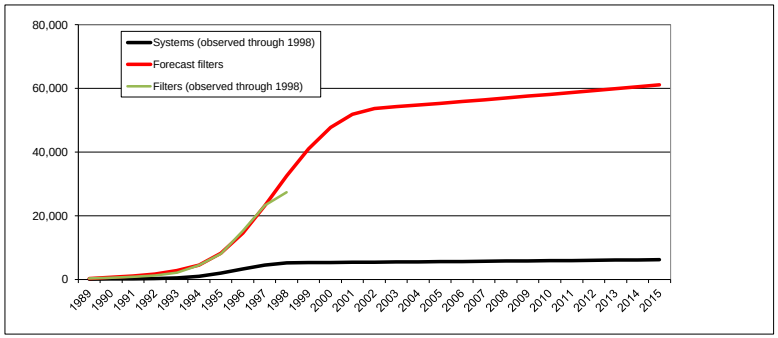
Forecasting Sales of Brita's Systems and Filters

This worksheet helps you analyze the data in the Brita case.

Rows 17 and 18 are color-coded to the explanations starting in column N.
The Problem Set on Simulated Stores explores growth factors and the ratio of "blades" to "razors."
This worksheet uses those concepts for the Brita case.
This worksheet is formatted to print on a single page if you want to bring to class.

Brita Unit Sales

Year	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Systems (observed through 1998)	171	194	202	302	546	1,056	2,030	3,363	4,565	5,266	5,319	5,372	5,426	5,480	5,535	5,590	5,646	5,702	5,759	5,817	5,875	5,934	5,993	6,053	6,114	6,175	6,237
Filters (observed through 1998)	402	581	876	1,292	2,205	4,458	8,164	15,246	23,293	27,413	41,085	47,769	51,894	53,724	54,261	54,804	55,352	55,905	56,464	57,029	57,599	58,175	58,757	59,344	59,938	60,537	61,143
	At one level the installed base in the sum of all systems sold, but you need to assume some churn.																										
Installed base	137	292	454	695	1,132	1,840	3,309	5,838	9,248	13,024	16,434	19,108	20,758	21,490	21,704	21,921	22,141	22,362	22,586	22,812	23,040	23,270	23,503	23,738	23,975	24,215	24,457
Forecast filters	342	730	1,134	1,738	2,830	4,600	8,272	14,594	23,120	32,560	41,085	47,769	51,894	53,724	54,261	54,804	55,352	55,905	56,464	57,029	57,599	58,175	58,757	59,344	59,938	60,537	61,143
Growth of systems		13%	4%	50%	81%	93%	92%	66%	36%	15%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Growth of filters		45%	51%	47%	71%	102%	83%	87%	53%	18%	50%	16%	9%	4%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Ratio of filters per system	2.4	3.0	4.3	4.3	4.0	4.2	4.0	4.5	5.1	5.2	7.7	8.9	9.6	9.8	9.8	9.8	9.8	9.8	9.8	9.8	9.8	9.8	9.8	9.8	9.8	9.8	9.8



Default Values

This worksheet assumes a constant growth rate, now 1%. **Enter growth rate in cell X27** **1%** 1%
This growth rate underlies the forecasts in Row 13 from 1999 onwards.
Feel free to assume a different growth rate if you want.
Alternatively, you can manually enter a growth rate in each year. (It might slow over time.)

Page 4 of the case recommends you forecast with
80% of installed base from last five years
The formulae in the Row 17 cells implement the case recommendation.

Starting in 1999 we can take 2.5 filters per installed base. **Enter filters/installed in X36** **2.5** 2.5
The number, 2.5, comes from page 4 of the case.
If your analysis suggests another number, enter it is cell X36.
The number you want is the lifetime ratio of filters per system.
With zero growth, row 23 provides a steady state ratio.
Is this the appropriate lifetime ratio (which you will use in profit calculations).
Can you use case facts to derive a simple formula?

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