

# Container Self-Manufacturing – What Drives It?

**Mike Brunett – Inter-Tech Ltd.**



ESTABLISHED 1986

**Inter-Tech Ltd**

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# Subject Matter Qualification: Inter- Tech Ltd.

1. Inter-Tech, Ltd. (ITL) is a PET plastics engineering, project management and planning firm. Our customers are predominantly in the food and beverage industry and **our core competence is assisting our clients in PET container self-manufacturing.**
2. Established in 1986, our staff of professionals is comprised of engineers, designers and plant operational expertise in the plastics and food & beverage industries. Many of our technical staff have been active in the field of PET *since its development stages in 1977.*
3. Inter-Tech Ltd. has vertically integrated plastics container self-manufacturing in food & beverage plants worldwide in over 112 countries. In many of those countries, ITL was the first to introduce PET container technology to that market.
4. My Background: Pepsi Cola Bottling Group; Coca Cola Enterprises and Nestlé Waters North America.



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# Who's Who in PET Container Self-Manufacturing

“The Beverage World Global 100” list was recently published in *Beverage World's* October 15, 2007 issue. The published revenues for the major beverage players were (in U.S. dollars):

- Nestlé: \$27.7 bio
- The Coca Cola Company : \$24.1 bio
- Coca Cola Enterprises (CCE): \$19.8 bio
- PepsiCo: \$13.2 bio
- Pepsi Bottling Group (PBG): \$12.7 bio
- Cadbury Schweppes: \$4.7 bio
- Cott Beverages: \$1.8 bio

**Q: How many of these major end users are now self-manufacturing their PET containers?**

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**Answer: All of them.**

- **Every Major Soft Drink or Bottled Water Player in the U.S. is either vertically integrated, vertically integrating or insisting that their Co-Packers are vertically integrated through the price structure they require.**

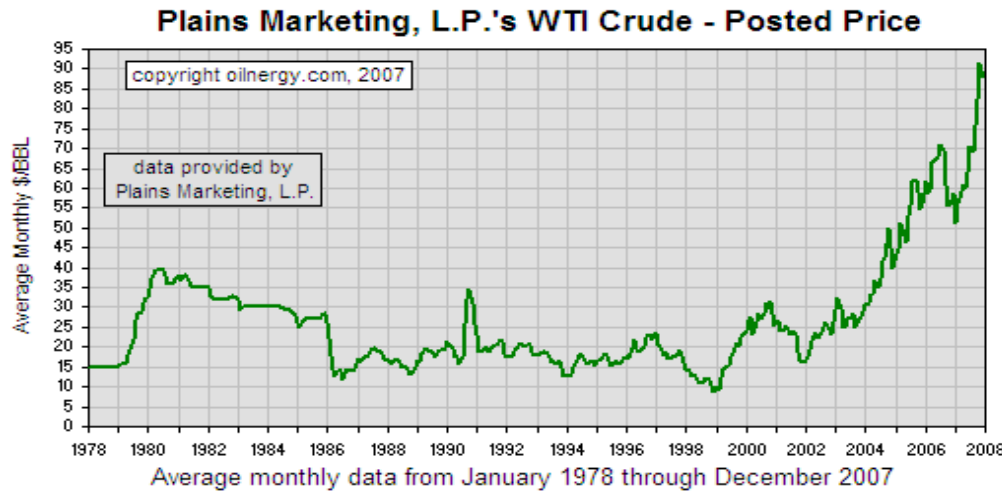
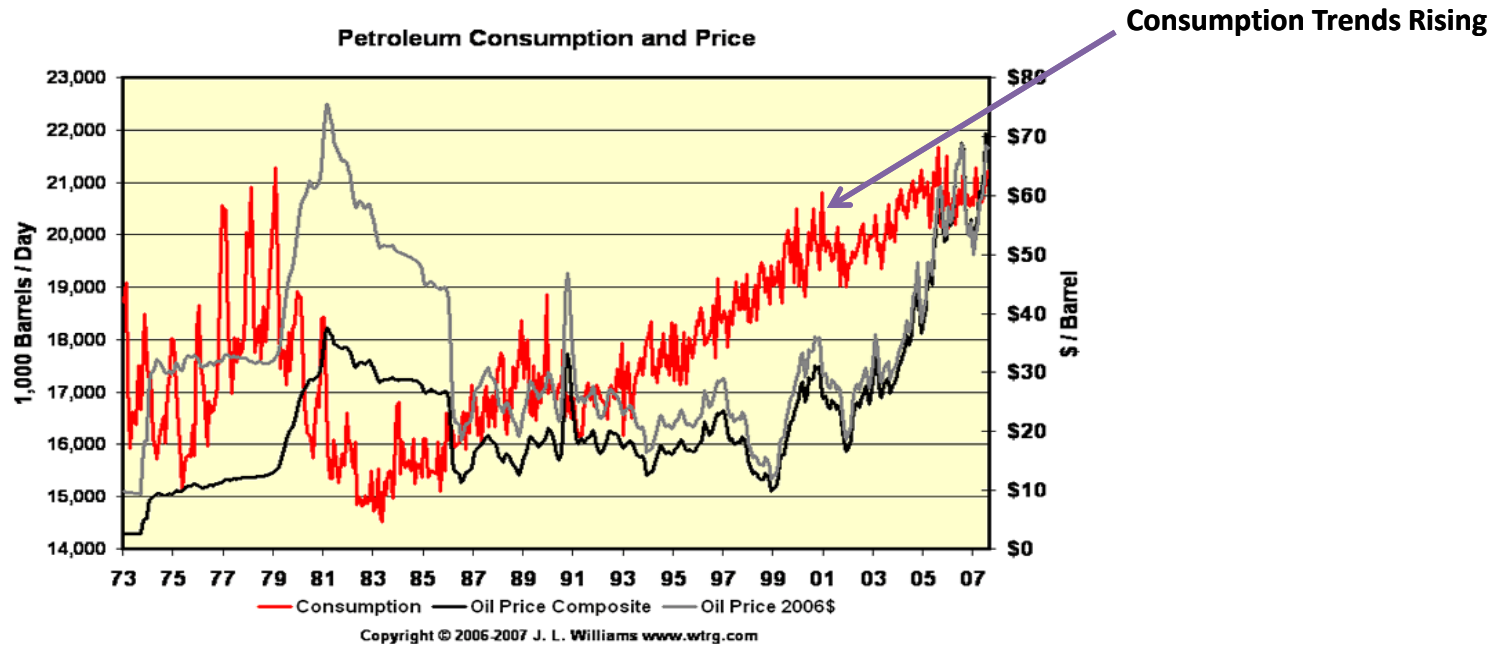
## And Recently . . . it's not just the High Volume Operations that are Migrating to Self-Manufacturing Anymore:

Last six months of Inter-Tech's experience:

- Client # 1: Justified self-manufacturing converting from HDPE to PET – only **5.0 million containers annual volume** 1-gallon – liquid consumer product.
- Client # 2: Justified self-manufacturing converting from HDPE to PET – **2.7 million 1-gallon containers annual volume** – liquid coatings product – about to do the same converting metal quarts to PET. This is a Beta Site with 30 – 40 other metal can and HDPE plants in their company .

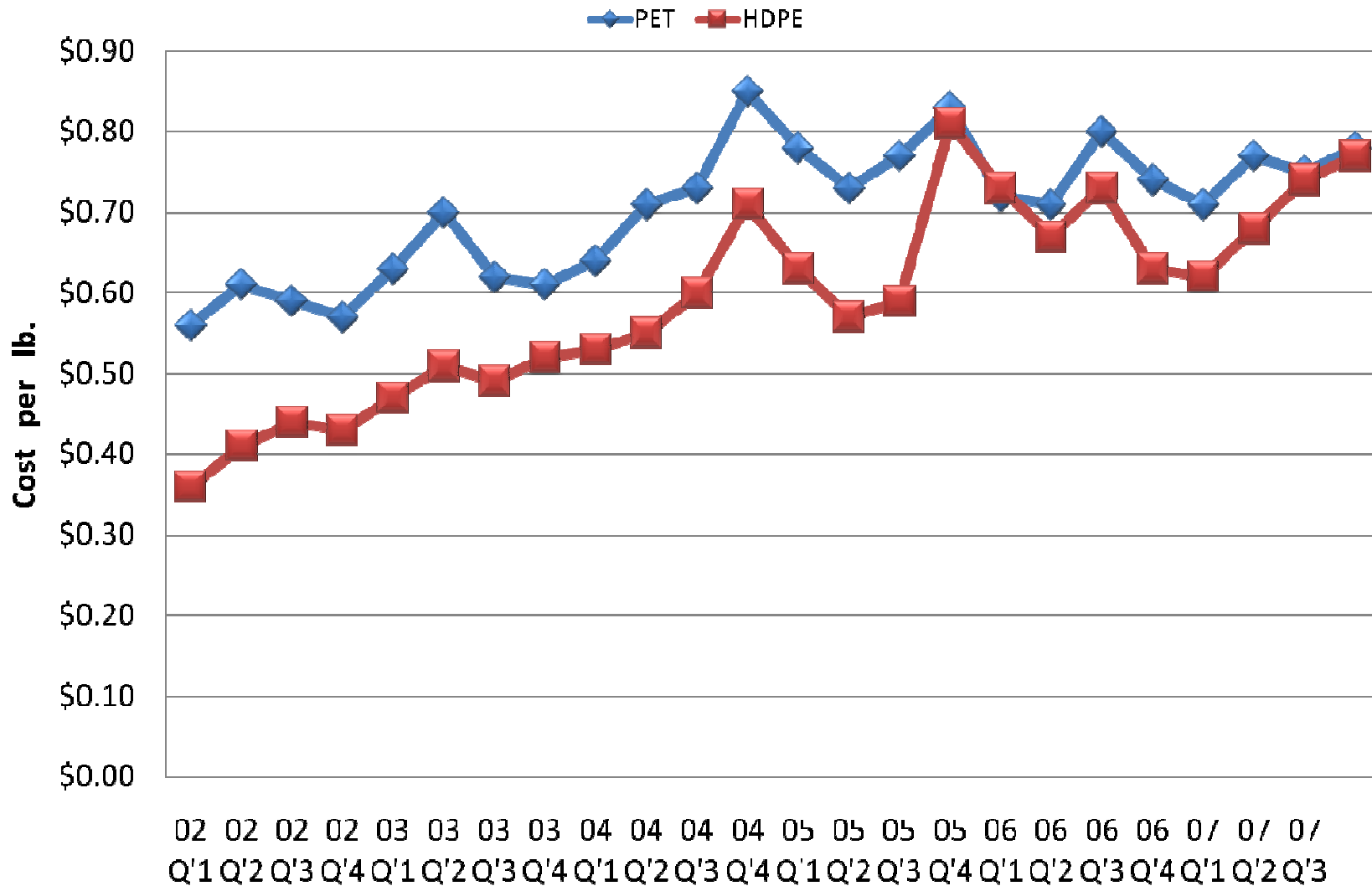
***So what are the driving influences that are swinging this pendulum for end – users to self-manufacture?  
. . . here are Five influencers.***

# # 1: A Loss of Control and the Concern Over Long-Term Pricing. . .



Price		Change	Trades	Volume
15:17 - \$ 95.09		↓ 2.82 2.88% ↓	69,088	187,031
Range	Open	52 Wk Range	1 Year Forecast	
94.47 - 98.40	95.18	90.28 - 99.58	<b>\$123.62 / Barrel</b>	

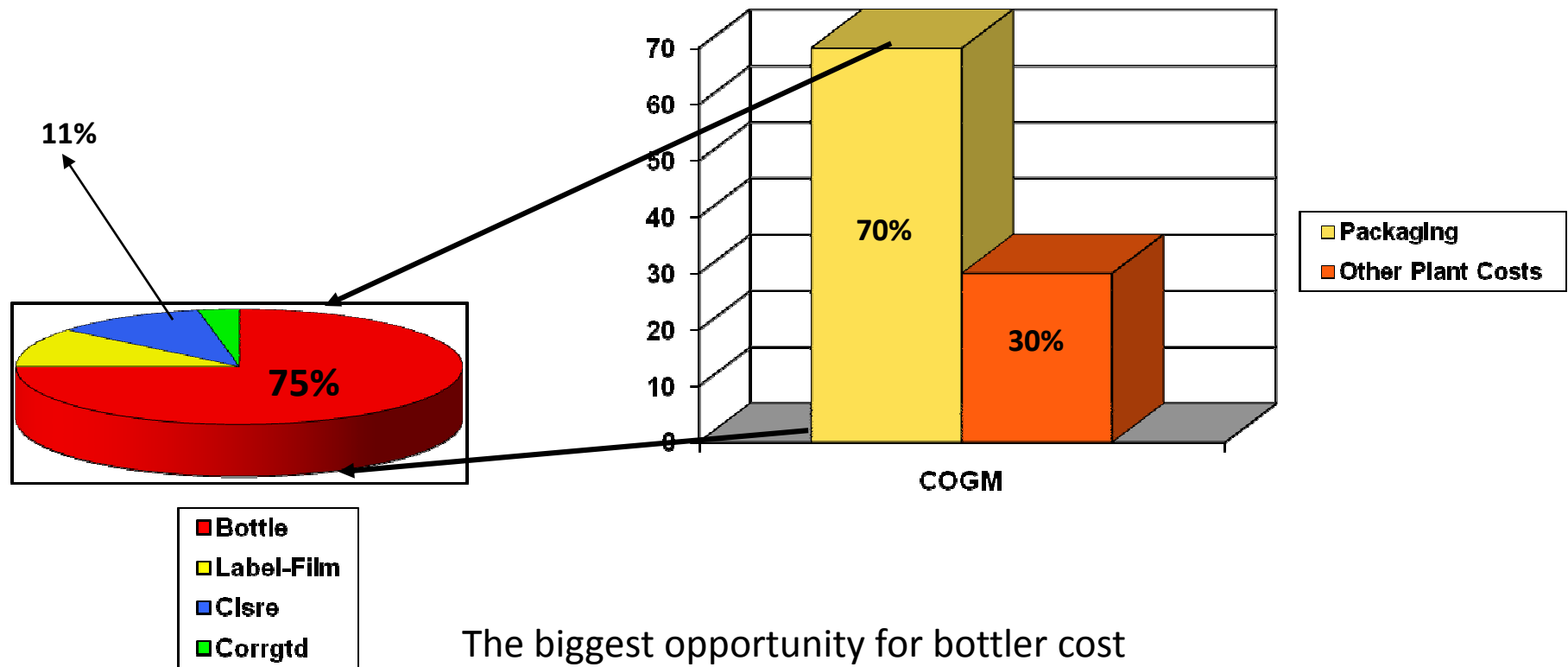
## #2: PET is Starting to Look Pretty Good to a Lot of End Users Who Have Not Been Involved With This Plastics Type Before . . .



Source: Chem Data

### #3: You gotta fish where the fish are . . .

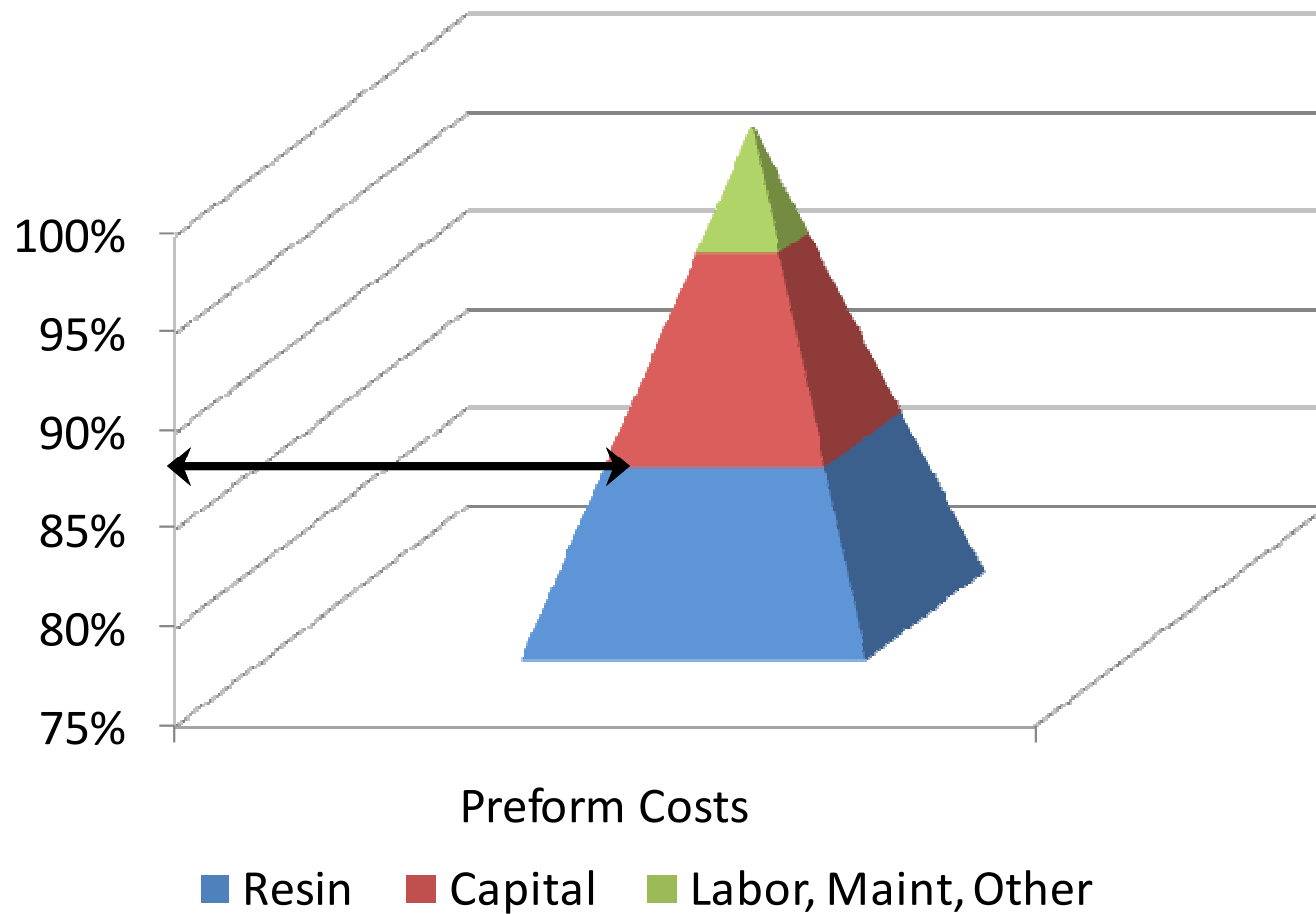
(Cost of Goods Manufactured – Bottled Water  
% Costs Breakdown)



The biggest opportunity for bottler cost reductions reside in the area of packaging and more specifically, containers with closures as a distant second.



## #4: To Drive Real Cost Reductions. . . Material Reductions are Where it's At!



**80 – 90% of Preform Costs are Resin**

## Actual Injection Molding/Preform Typical Costs:

	Year 1	Year 2	Year 3	Year 4	Year 5
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**Cost/1000 for Preform #1 [24-Grams]**

Resin	\$37.74	\$37.74	\$37.74	\$37.74	\$37.74
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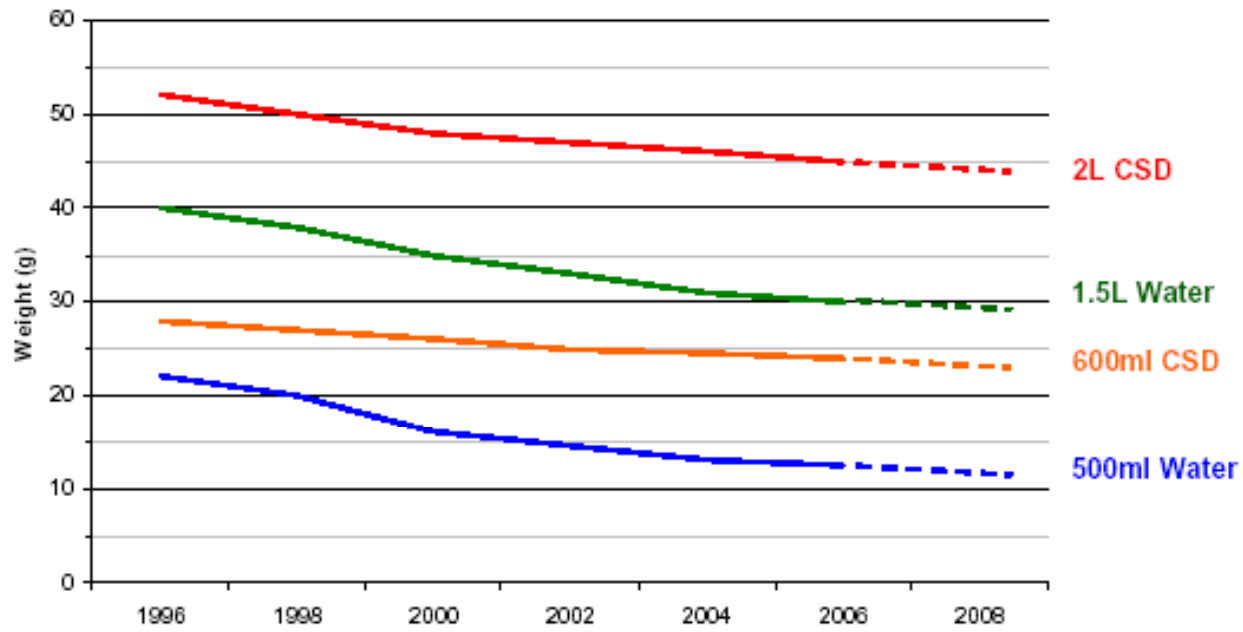
Power	\$1.09	\$1.09	\$1.09	\$1.09	\$1.09
Labor	\$0.62	\$0.62	\$0.63	\$0.63	\$0.64
Repairs	\$0.60	\$0.59	\$0.58	\$0.57	\$0.56
Warehouse (sq. ft.)	1,467	1,497	1,527	1,557	1,588
Warehousing Cost	\$0.10	\$0.10	\$0.10	\$0.10	\$0.10
Cost of Capital	\$4.24	\$4.16	\$4.07	\$1.76	\$3.19
Gaylord Cost	\$0.38	\$0.38	\$0.37	\$0.37	\$0.37

Total Cost	\$44.78	\$44.68	\$44.59	\$42.27	\$43.69
Conversion Cost	\$7.03	\$6.94	\$6.85	\$4.52	\$5.95

### 24 Gram Beverage Preform:

1. Cost of Resin = 84% of the total cost plus . . .
2. Conversion Costs of anywhere from \$0.007 – \$0.009 per preform - - 16%

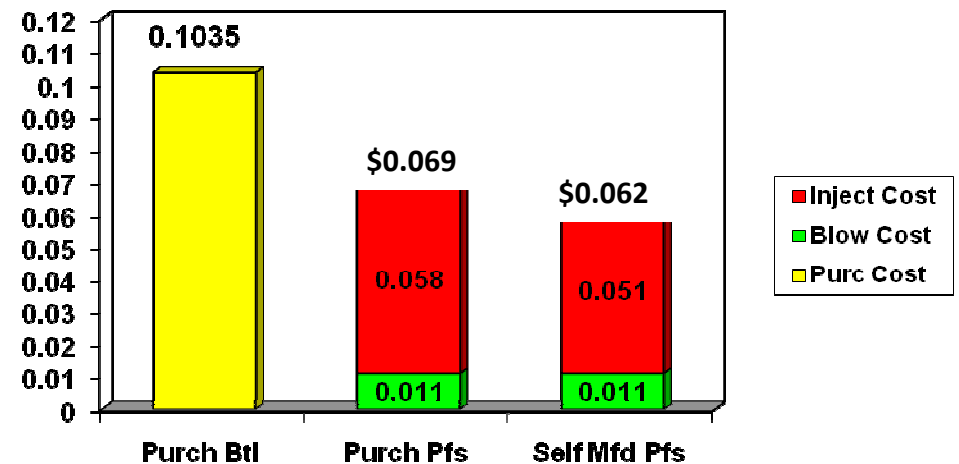
# Trends in Preform Lightweighting



1. 0.5L bottles were 24.5 grams . . . now 12.5 gr. moving to <10 gr.
2. 2.0 L CSD bottles were 52 grams now less than 45 grams
3. 1.5 L bottles were 40 grams now less than 30 grams.
4. 20 oz. CSD bottles were 28 grams – now 24 grams.

## # 5: End Users Want the Biggest Bang for their Buck . . .

- The biggest savings in bottle self-manufacturing comes in the blow step –but less from the benefit of blow molding on-site and more from the indirect benefit of gaining **direct access to preforms** either by buying them or making them.
- Cost Detail:
  - Purchased Btl: \$0.1035
  - Purchased Preform & Blown Btl: \$0.069
  - S.M. Preform & Blow m Btl: \$0.062
- If volume growth justifies movement to preform self-manufacture, it should be pursued. If not, the option/investment can always be grown into later (in other words, your volume will tell you what to do).



# Blow Molding Typical Costs:

	Year 1	Year 2	Year 3	Year 4
<b>Cost of 24 Gram Preform</b>				
Cost 24 Gram Self Manufactured Preform	\$44.78	\$44.68	\$44.59	\$42.27
<b>Blow Molding Conversion Costs</b>				
Power	\$2.35	\$2.35	\$2.35	\$2.35
Labor	\$0.99	\$1.00	\$1.00	\$1.01
Repairs	\$0.95	\$0.93	\$0.91	\$0.89
Warehouse Space (30-Days)	6,008	6,128	6,251	6,376
Cost for Warehousing	\$0.87	\$0.89	\$0.90	\$0.92
Cost of Capital	\$4.50	\$4.42	\$4.33	\$4.24
Sales & General	\$0.00	\$0.00	\$0.00	\$0.00
Stretch, Slip Sheets, Pallets & Straps	\$0.96	\$0.96	\$0.95	\$0.95
<b>Total Cost</b>	<b>\$55.40</b>	<b>\$55.22</b>	<b>\$55.05</b>	<b>\$52.65</b>
<b>Conversion Cost</b>	<b>\$10.62</b>	<b>\$10.54</b>	<b>\$10.46</b>	<b>\$10.38</b>

<b>Material Costs:</b>	<b>68%</b>
<b>Injection Costs:</b>	<b>13%</b>
<b>B.M./Converting Costs:</b>	<b>19%</b>
<b>Total:</b>	<b>100%</b>

## Typical Costs Are:

1. Cost of Preform (Purchased or Self Manufactured) plus . .
2. Conversion Costs also of anywhere from \$0.008 – \$0.011 per bottle (to blow the bottle).

***And this says it much better . . .***

*“ . . . it costs about 8 cents to ship an empty bottle-  
shipping a preform instead costs us about 3 cents. Add  
an additional penny to blow mold the bottle and you can  
shave about 4 cents, cutting PET costs in half.”*

John Stacks, President  
Pure Mtn LLC  
Feb 2006 *Beverage World*

## **PET Container Self-Manufacturing . . . Why is it Worth it for an End User to Do This . . .**

- **What are the Important Things an End User Gains Through Container Self-Manufacturing:**
  1. Costs Reduction
  2. Flexibility - - Innovation Edge
  3. Margin Protection Through Packaging Innovation
  4. Sustainability

# 1. Costs Reductions – What Should They Look Like to an End User . . .

- Financial Returns:**

- Typically Returns range from 30 – 40% IRR.
- Paybacks should range in the 2.5 – 3.0 yr payback range.
- Only integrating blow molding, reductions in the \$0.03 -\$0.045 cost per bottle are not uncommon.

<u>Option #</u>	<u>Option</u>	<u>Rate Blow (bpm)</u>	<u>Cost Per 1000</u>	<u>Capital</u>	<u>Savings/Yr vs. Purchsd Btl</u>	<u>IRR</u>	<u>Payback (Yrs)</u>	<u>Svgs: 24-Ct Case</u>
1	Linear SFL 6 Buy Preforms	150	\$ 68.71	\$2,090,625	\$ 1,917,118	58.4%	1.69	\$ 0.84
2	Rotary 16 Buy Preforms	480	\$ 70.83	\$3,475,899	\$ 1,800,639	33.1%	2.85	\$ 0.79
3	Linear SFL 6 Make Preforms	150	\$ 62.56	\$3,818,125	\$ 2,255,408	37.9%	2.54	\$ 0.98
4	Inject-Blow Preforms 1-Step HS 12/40	166	\$ 58.49	\$3,932,962	\$ 2,479,489	40.4%	2.39	\$ 1.08
5	Rotary 16 Make Preforms	480	\$ 64.68	\$5,203,399	\$ 2,138,929	25.8%	3.49	\$ 0.93



## 2. Flexibility . . . and an Edge on Innovation

- **More sizes . . . more offerings, more multi packs . . .**
- **Better Control of this execution . . .**



Nestlé Waters N.A. Line-Up of Container Sizes for  
Their Six Big Brands - *Source: NWA Website*

### 3. Margin Preservation

- **Control of your packaging gives you an opportunity to :**
  - Innovate and launch new package sizes that cannot be quickly replicated.
    - Competitive threats are blunted because of their limited capability to “turn on a dime” with you.
    - Self - manufactured pricing provides long term sustainability to endure lower pricing defensively or offensively with competitors .

Early 1990's Southern CA  
Anecdote . . . .



## 4. Sustainability

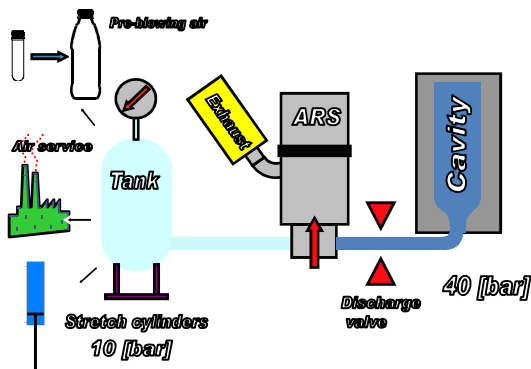
- Sustainability is no longer the corporate “buzzword of the month” – consumers and regulators/legislators are expecting reduced footprints from manufacturers (end-users) within the ecosystem.
- PET container self-manufacturing can play an important part in a **lighter ecological footprint**:
  - Container weight reductions resulting in less landfill impact for any non-recycled bottles.
  - Recycled content in blow molding
  - Less energy required to produce these containers
  - Less fuel and impact for highway use due to in-house manufacturing. *(For example, last year Nestle Waters produced 98% of their PET containers and eliminated the need for 160,000 loads of empty bottles and 6.6 million gallons of fuel last year).*  
*Source: U.S. Today*



**Nestlé Waters Eco Shape 12.5 gram bottle**

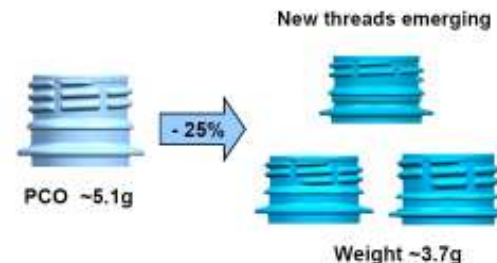
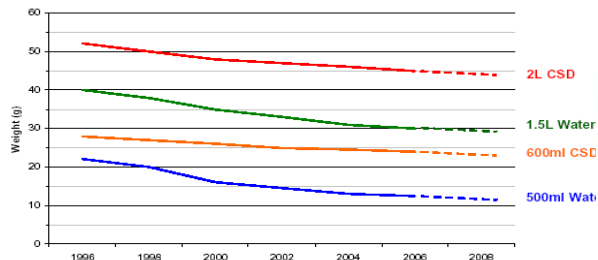


# End-User Sustainability Translated . . .



**Air Recovery Systems**

## Trends in Preform Lightweighting



**Self Manufacturing, Preform & Container Light Weighting**

- Less Material in the Bottle
- Less Material in the Closure
- Less Material in the Printed Shrink
- Zero Corrugated or a Slip Pad

**Reduced – Radical Packaging Light Weighting**



**Micro Plants**



**Hot Fill versus Aseptic Analysis**



**LEED - Leadership in Energy & Environmental Design For all New Facilities**



**11 oz. Glass - Tray & Shrink Wrap**



**0.5 L PET – zero corrugated**

**Reduced Secondary Packaging Focus**

## Summation . . .

- Become a part of the solution . . .
- If we know what is important to an end user... then we have an idea how to craft a solution for them . . .
  1. Costs Reduction (Understand ROI break points; On-Sites, Near Sites? - - Pricing Visibility)
  2. Flexibility - - Innovation (Do whatever doesn't make sense for them)
  3. Margin Protection Through Packaging Innovation (Bring it to Them)
  4. Sustainability (recycling solutions; barriers; more radical light weighting)



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***“If you always do what  
you’ve always done you’ll  
always get what you’ve  
always got”***

**Tony Robbins**

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