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Do Higher Standards Help Drive Improvements in Marketplace?

Water Smart Innovations

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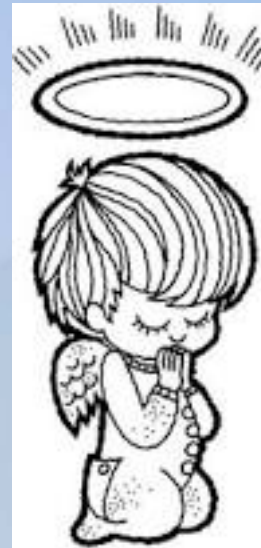
Constant Improvement?

- Each year companies try to increase product sales by making some minor change (or not) and listing the product as “New & Approved”
 - By now we should have perfect shampoo, toothpaste, breakfast cereal, vacuum cleaners, waffle makers...
- But change doesn't necessarily equal “improved”



Some products really are “Improved” versions of early models

- Question: Why would a company spend money and/or time to improve a product?
- Answer: Because they’re good corporate stewards?
 - (wait for laughter to die down)
- Real Answer: Because they expect greater profits
 - sell more products (greater market share) or
 - sell each product for a greater profit



But producing better product does NOT ensure greater profits because:

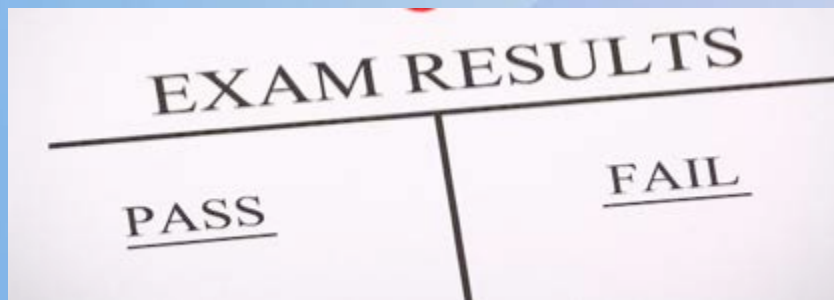
- 1) improvement may be minimal and not significantly increase sales volumes
- 2) improvement may increase cost of production and offset any potential gain in profit
- 3) consumer does not “believe” company’s “improvement” claim and sales do not increase
- 4) company’s marketing plan is terrible and fails to inform consumer of product improvement

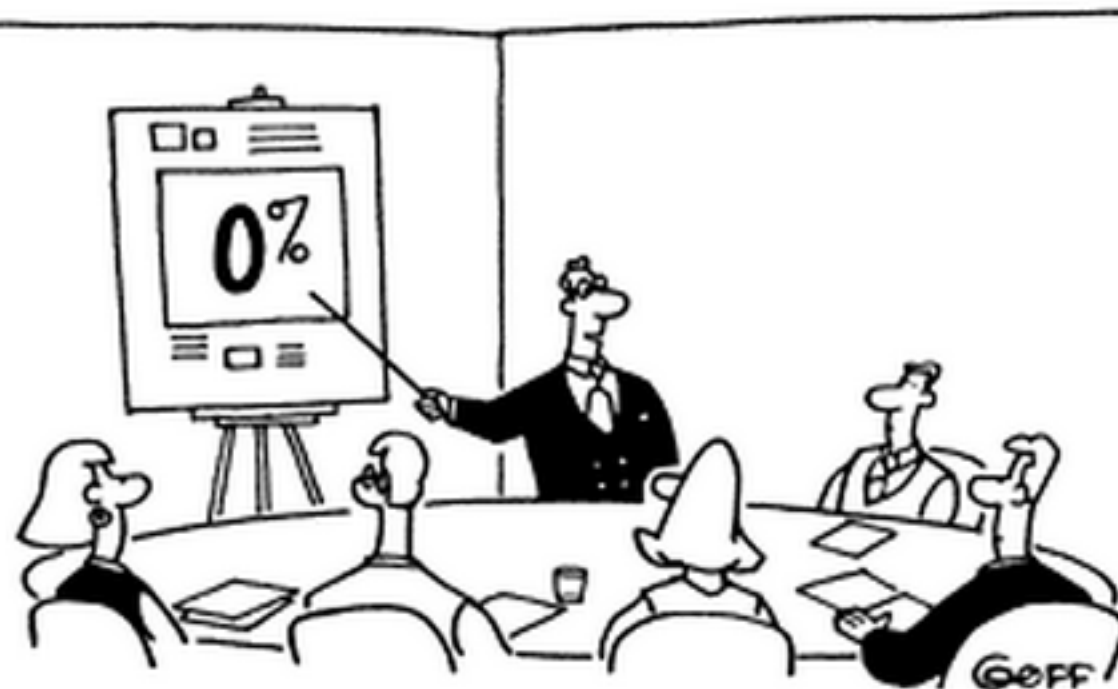
Example: Failed to Increase Market Share



Plumbing / Water-using Products

- Most must be certified as compliant with a set of Federal requirements (U.S. and Canada)
- But – certification is only Pass/Fail!
 - by definition, certification only ensures product meets minimum requirements for health and safety
- Minimum certification requirements are absolutely required, BUT...
 - Don't differentiate “Good, Better and Best” products
 - No reward for mfrs with “Better” or “Best” products





"Our study concludes that this is the percentage of our customers who will buy from us without any effort whatsoever on our part."

PRICE
IS WHAT YOU PAY
VALUE
IS WHAT YOU GET

WARREN BUFFETT

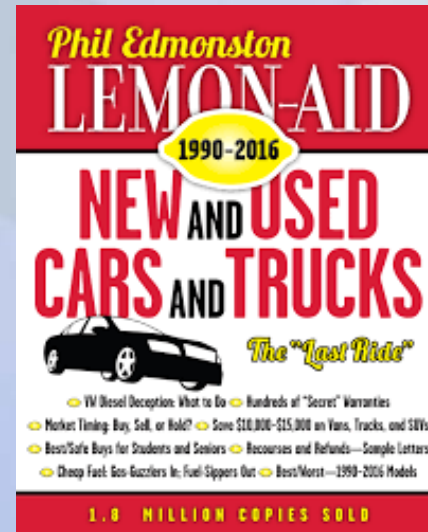
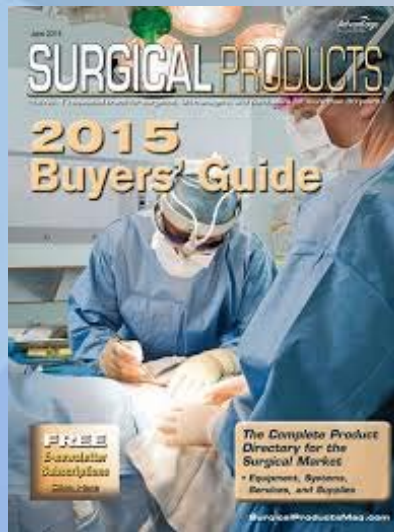
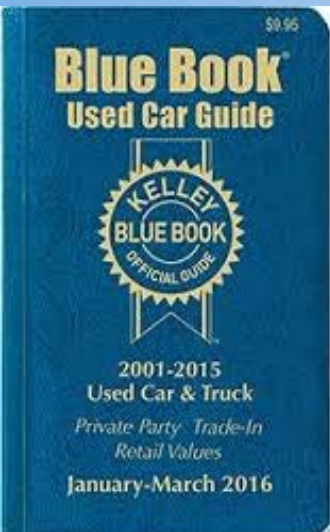
Range in Product Quality

- When EPA Act 92 was enacted
 - A few toilet models provided very high level of flushing performance
 - A few provided ‘acceptable’ flushing performance
 - A few offered terrible flushing performance
- But ALL models were certified!
 - Certification is required to sell product
 - PASS/FAIL testing does not foster product improvement
 - Consumer: Which to choose???



“Better-Best”

- Being ‘Better or Best’ is only an advantage...
 - When 3rd-party (independent) testing is performed
 - When performance scores are publicly available
 - When consumer satisfaction ratings are available (typically online)



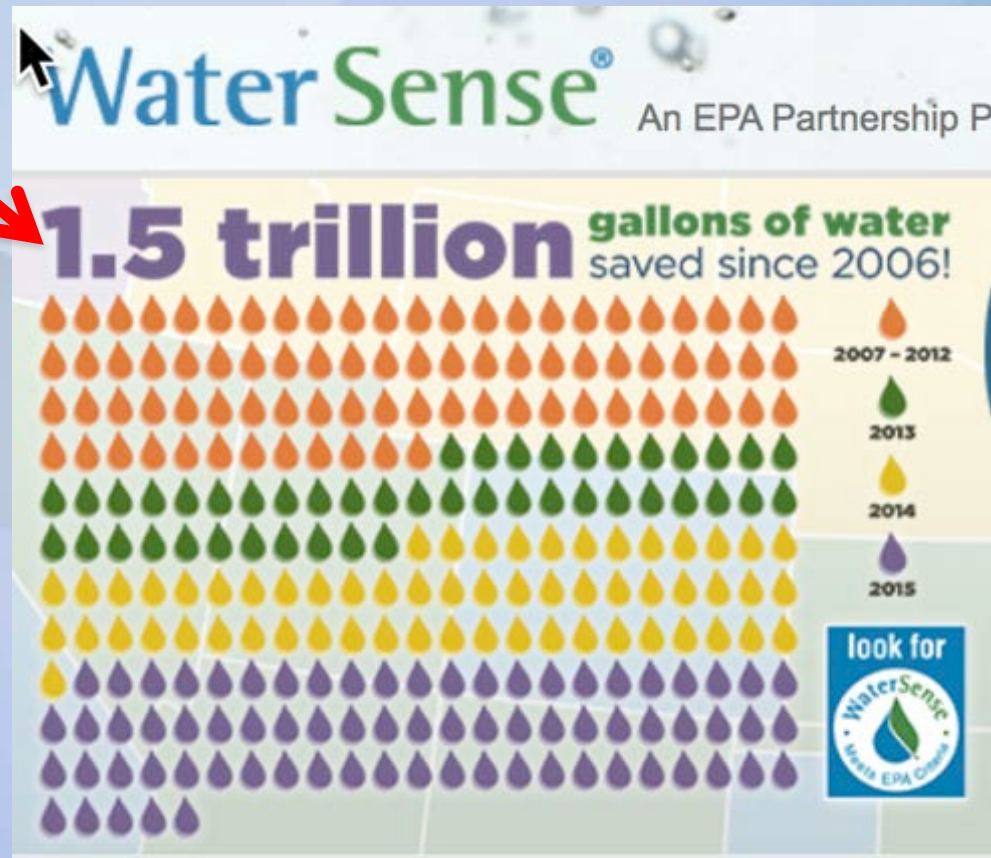
Maximum Performance (MaP)

- Released 2003 - Identified “better and best”
- MaP goal: promoted development of more water-efficient toilets by “rewarding” models that provided better flushing performance
 - Voluntary participation by manufacturers
 - Publish performance results (for free)
- Result: manufacturers voluntarily began improving the performance of their toilet models
- Instrumental to development of voluntary WaterSense[®] toilet standard (pass/fail)
- Market Change – nearly 100% of new toilet models meet WaterSense[®] 1.28G requirement!

Marketplace vs. Regulations

- MARKETPLACE: best tool for ‘weeding’ out poor products & identifying top-performing, cost-effective products
- REGULATIONS (codes & standards): best tools to help protect public health and safety –
 - Regulations reflect only minimum requirements
 - Regulations do not (usually) reward product innovation
 - Regulations should not...
 - Be design restrictive (except for health & safety)
 - Be used to stymie product innovation
 - Be used to protect the market share of existing producers
 - Regulations should...
 - Be based upon sound ‘real world’ research

Marketplace Change



Regulation Example #1 – Protect a Manufacturer's Market Share

- 1980: Dual-flush toilet developed in Australia
(simultaneous development in the U.S.)
- 1993: Australia (except NSW) makes dual-flush toilets mandatory in new buildings –
 - Design restrictive
 - Completely changes marketplace
 - Other product designs excluded
- Today: Limited designs available in Australia's 'captive market'

Regulation Example #2 – Adopt Lowest Common Denominator

- 2011: Canada begins update of (voluntary) National Plumbing Standard, including max toilet flush volume
- Traditional approach: Adopt the ‘least’ aggressive provincial requirement, i.e., 3.5 gallons per flush*
- Result:
 - Mandate a flush volume that no longer exists in mktplace
 - Move away from or postpone water efficient products

*Committee members finally succeeded in forcing adoption of 1.28-G flush

Regulation Example #3 – Adopt Regulations Without Research

- California Energy Commission (CEC) adopts more rigorous urinal and faucet standards effective 2016
 - Affects all residential and public restrooms
 - Residential lav faucets: ≤ 1.2 gpm (WaterSense: 1.5)
 - Wall-mount urinals: ≤ 0.125 gpf (WaterSense = 0.5)
- *Predicted* to save 105 billion gallons per year
 - BUT, prediction based solely upon dubious engr estimates
 - No ‘real world’ measurement or analysis!

Example: Residential Lav Faucets

- Do water savings always result from reduced flows?
 - Two residential end-use studies (North America)

	1999	2016
No. of houses logged	1,187	762
Avg. daily faucet use (gallons per household)	26.7	26.3
Avg. faucet flow rate (gallons per minute)	1.4 gpm	1.0 gpm

- Answer to question: Not necessarily!

Next Market Change for MaP...

- MaP PREMIUM developed 2012 (residential toilets)
 - Requires higher minimum performance (600g)
 - Requires lower maximum flush volume (1.1G - 4.0L)
 - Pushes efficiency/performance closer to “sweet spot”
- Cannot keep pushing ‘envelope’ indefinitely
 - Reach point where further improvements not physically possible or practical (law of diminishing returns)
 - e.g., further flush volume reductions may...
 - endanger drain system performance,
 - affect flushing performance,
 - Create unforeseen health impacts, etc.

Commercial Fixtures

- Will further reductions in flush volumes lead to drain system problems (dry drains), especially in commercial installations?
- Should minimum flush volume be specified?
 - As recommended in the PERC study
 - As incorporated into the WaterSense specification (1.0 gpf)
 - Concerns over retrofitting older buildings with very low consumption fixtures (toilets & urinals)
- Jan. 2008 - MaP began reporting on commercial toilets
 - Most models 800g and 1,000g MaP scores.
- Dec. 2015 - WaterSense spec/standard for flushometer toilets
 - Increasing emphasis upon water efficiency in CI, including...
 - Toilets, urinals, faucets, and others
 - WaterSense threshold for solid waste is 350g, which is an absolute minimum performance requirement for Commercial

Conclusion

- Regulations have minimum impact on advancing the marketplace
 - Minimum standards, pass/fail, no reward for excellence
 - Designed for “lowest common denominator”
- Independent 3rd-party testing and consumer rating programs identify “Best in Class” products
- 3rd-party evaluations must be fair, representative of real world, cost-effective, and relate to the marketplace
 - *BUT manufacturers of marginal quality products will NOT endorse rating systems*



Questions?

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