



2014 International Forum

DFMA® Boothroyd Dewhurst

Simply Complex™

June 04, 2014

Mike Davis, Director of Product Management
Dynisco



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Agenda



- Dynisco
- Left to themselves...things get out of hand
- Managing evolution
- Finding the balance
- Setting the stage
- How nature handles simplicity & complexity
- How not to handle simplicity & complexity
- Managing a portfolio—a story



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Who is Dynisco?

- B2B, market leader selling pressure sensors worldwide
- Parent: Roper Industries
- 61 years is good and not-so-good
- Over the years, the front-end of the portfolio became complex
 - Hard to move quickly
 - Lengthening lead times
 - Confusing messages (collateral, Ad's)
 - Unique and disconnected product designs
 - Declining Gross Margins
- VOC: listening to the market
 - Complexity could lead to loss of lead position



Left to themselves...things get out of hand



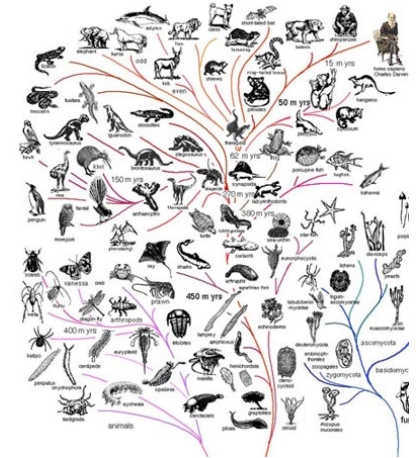
General premise...left to themselves, things will get out of hand

- Children at recess, Governments, Taxes, Civilizations, Product portfolio's
- Big idea, then the rules start, with more added
- Complexity sets in
- Collapse



Managing Evolution

- Successful companies manage their evolution well
- Add ideas/rules. Eliminate ideas/rules.
- Managing the “legacy syndrome”
 - “That’s the way we’ve always done it here”
- Product portfolio can suffer the same fate
 - Easy to add, difficult to eliminate
 - Complexity adds to the complexity
- Confusing customers is not being nice



Finding the Balance



- Simple has its issues too
- Simple is easy, but not differentiated
 - “Any color...if it’s black”; a one page menu
- Desired: simple, yet complex
- Goal: Simple, followed by Complex



Set the stage for Simply Complex

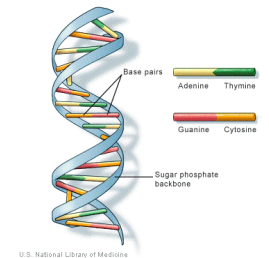
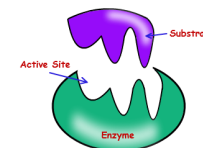
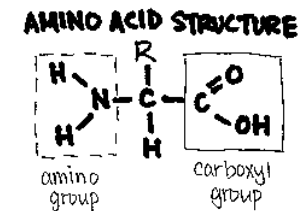
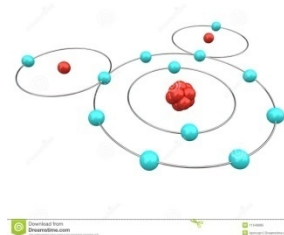
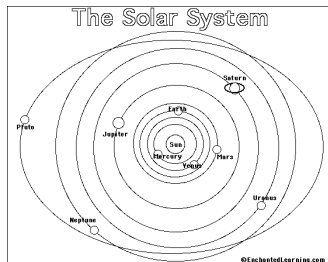


- Create the fewest fundamental, common building blocks
- Avoid customizing the building blocks
- Reuse the building block in an infinite assembly



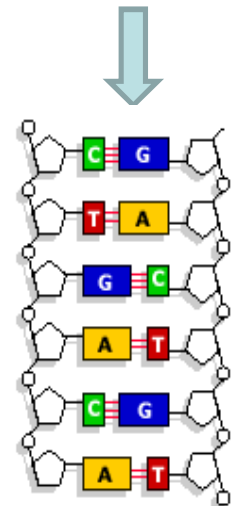
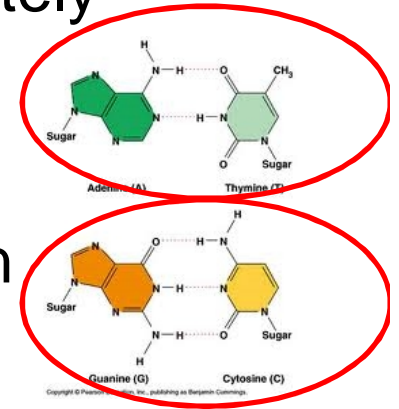
How it's done in nature

- Start with a few parts
- Construct many structures
- Use a few basic rules (processes)
- Deconstruct...Reconstruct as needed

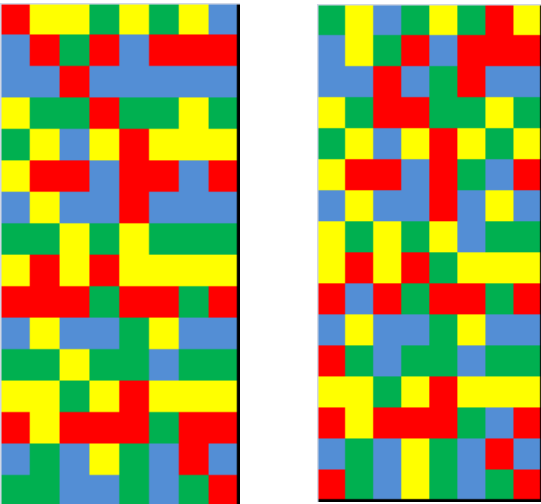


DNA: the most elegant of all

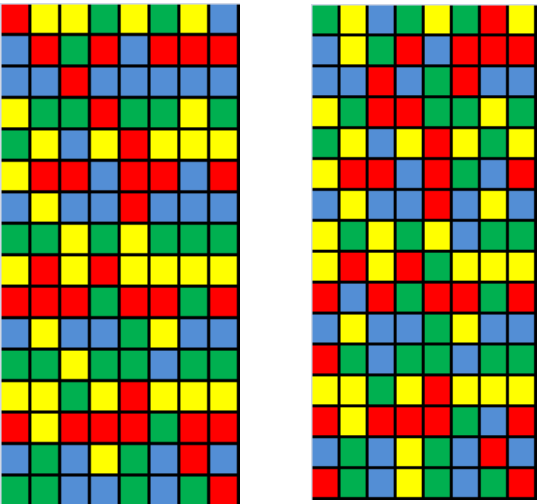
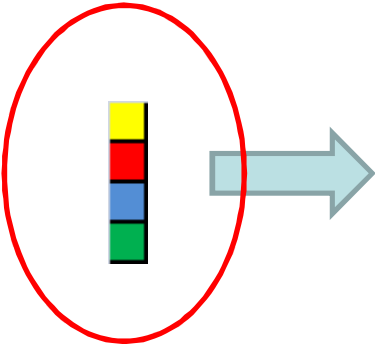
- Nature teaches us how to manage complexity by connecting a few simple components and infinitely repeating and/or resequencing. DNA...
 - Only two base pair molecules
 - Reorient / Reorder to create infinite variation
- Simply Complex
- All living things have the same DNA
 - Just a different amount and order
- Learning from a 2 billion year old professor



They Look The Same, But...



Each item is unique and comprised of 128 parts



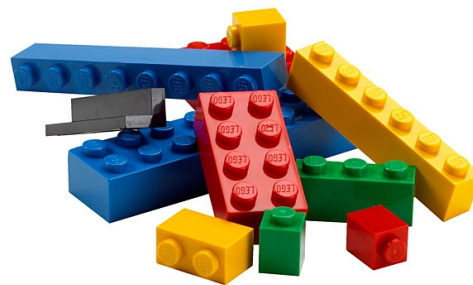
Each item is unique and comprised of 4 parts, repeated and resequenced infinitely



How it's done in business



- Soft serve ice cream
 - Same machine makes vanilla
 - Add the flavor & toppings at the end to customize
- Lego's
 - A few basic components
 - Create complex masterpieces



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How it's not done in business



- Dynisco sells 10's of thousands of pressure sensors
- A growing line of bolt-on's
 - Large majority of configurations are customer unique
 - Model codes are product unique and reinvented
 - Multiple model codes might mean the same thing
 - Designs not modular-friendly
 - Data sheets unique...many dozen per product line
 - Cost customized per order
 - Pricing not standard
 - 3,700 non-linked option codes to add to complexity



Enter Vertex



- Many re-starts to make a mercury-free sensor
- Specs drove new thinking (e.g. 2wk lead time)
- Simply Complex was introduced
- Goal:
 - Build a foundation of the fewest modules;
 - Continually challenge to go further
- Tools
 - VOC, DFMA; Postponement, Stage Gate; Team org, Nature



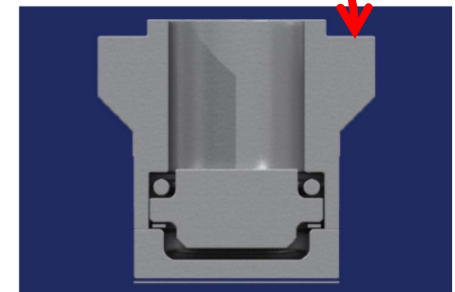
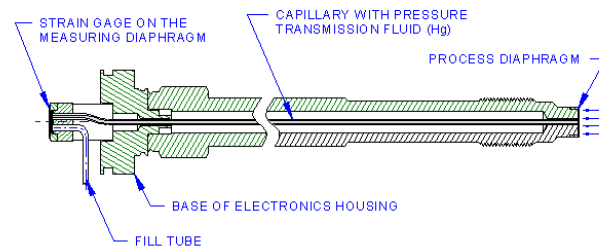
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Vertex improvements1

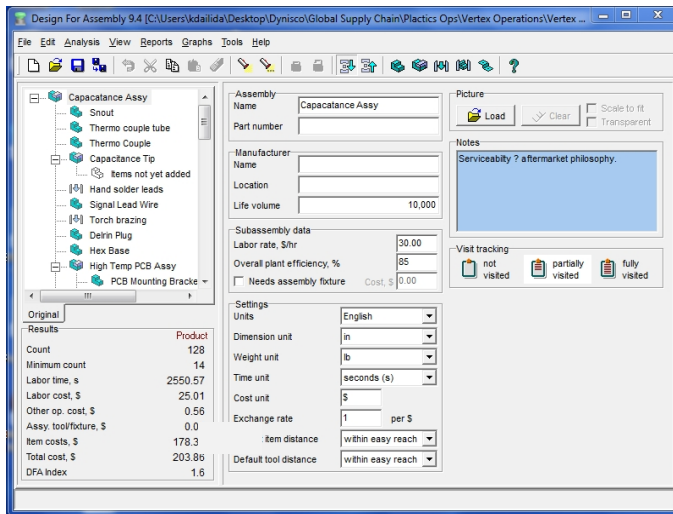


- Product design

- Modular components for easier configuration
- Direct sensing tip (versus fill, scaffolding, or moving)
- 95% standard; Tip is the secret sauce
- DFMA parts reduction in the early stage
- Competitive analysis DFMA

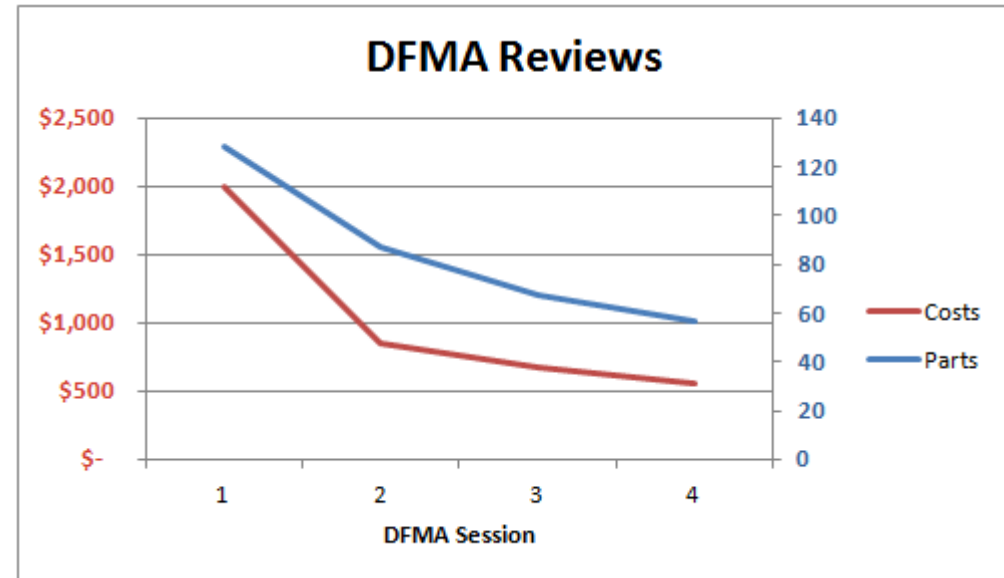


Vertex DFMA



Parts: 128 > 87 > 67 > 57 >

Costs: \$2,000 > \$850 > \$670 > \$560 >



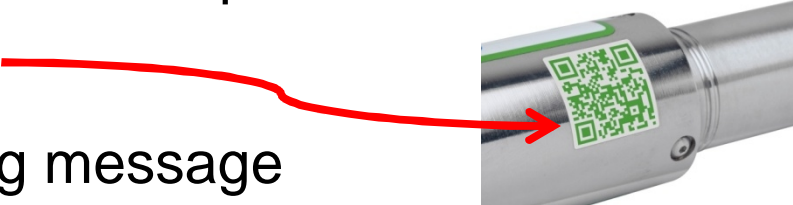
Multiple reviews drove significant results



Vertex improvements2

- Model code
 - Common set of options with the same codes
 - Code now usable on the entire portfolio
- Data sheet
 - From many dozens, to one
- Cost & Price
 - Cost & Price on standard updated 1/yr (80%)
 - Custom cost and price (20%)
 - DFMA: cost reduction even before launching

Vertex improvements3

- Easier build location decisions
- Faster production reaction
 - Postponement production: Flexibility in design
- QR code 
- Positioning message
 - Added product, but simplified the message
 - Simplified to 'Good, Better, Best'. Value Curve.
 - Selling Value (vs. features). Transferable.
 - Customer clarity (VOC)
- Transferable (modular) technology
 - Patents (3)

Vertex & Customers wins



- Awards
 - 5 awards for process & product innovation and sustainability
- Lead time reduced 8 to 4 weeks. 2 weeks is common.
 - Next goal: 48hr or faster.
- Simpler design means a more robust sensor
 - Warranty extended from 1 to 4 years
- eCommerce

“Simplicity is the ultimate sophistication. It takes a lot of work to make something simple, to truly understand the underlying challenges and come up with elegant solution.”

Steve Jobs



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Simply Complex



1. Simplify the fundamental building blocks
2. Rearrange the building blocks for infinite solutions



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Thank You For Listening



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Bio—Mike Davis



- Director of product management at Dynisco
- Science teacher, Lab manager, Industrial sales, City councilor
- Specialist, Manager, Director, VP, GM, President, Owner
- Turn-arounds, Marketing, Process flow
- Co-writing book: The Nature of Business



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