



DATA-INTENSIVE WORKFLOWS: LEARNINGS & CHALLENGES

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IT ALL STARTS WITH THE CONSUMER...



2bn
consumers
worldwide use a
Unilever product
on any day

53%
of sales in
emerging markets

Products sold in
more than
180
countries

More than
50 years
experience in
Brazil, China, India
and Indonesia

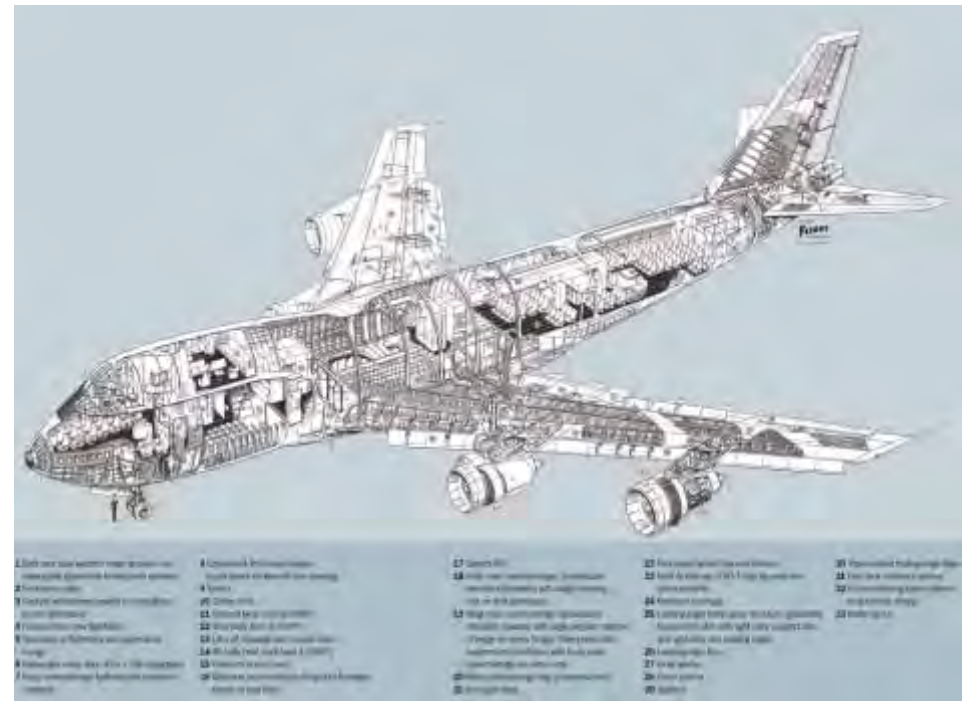


THE COMPLEXITY OF SOAP MAKERS HAS BECOME COMPARABLE TO THAT OF THE AIRLINE INDUSTRY...



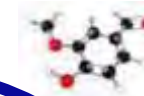
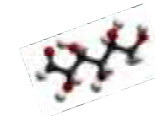
The FMCG product'

The 'Traditional Product'



One portfolio: >700 thousand specs across all Categories with 25% of these changing per annum

One product: 4.5 million parts, 75 thousand drawings



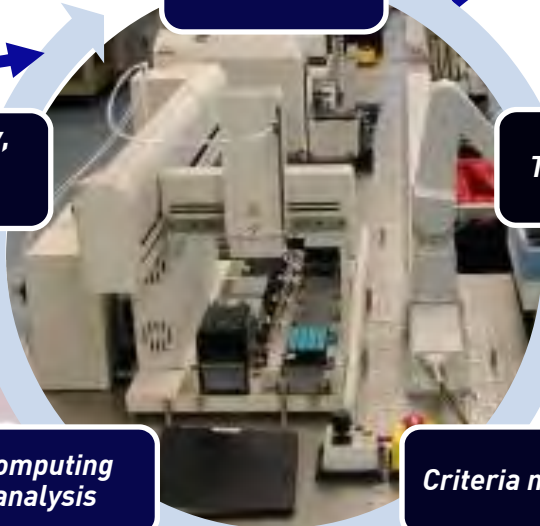
Design new experiment

Patentability, cost & availability

Test efficacy

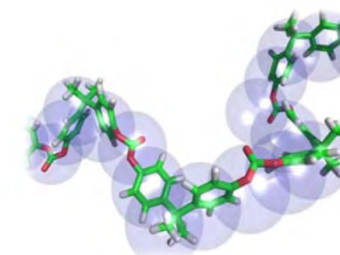
Computing analysis

Criteria match





built a model for liquid mixtures



coded the interface with the BlueGene/Q



A powerful supercomputer on the palm of you hand

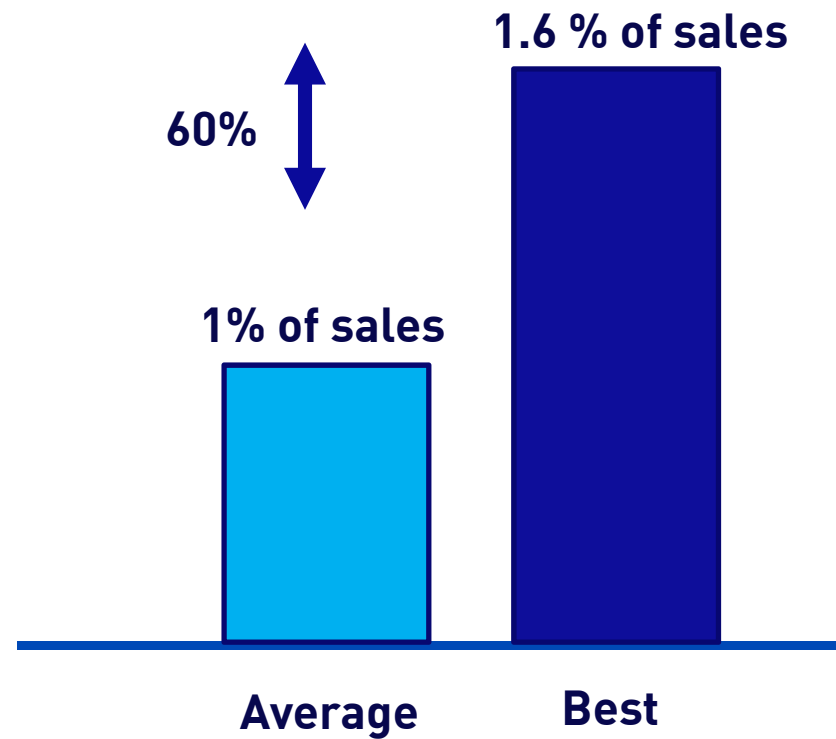
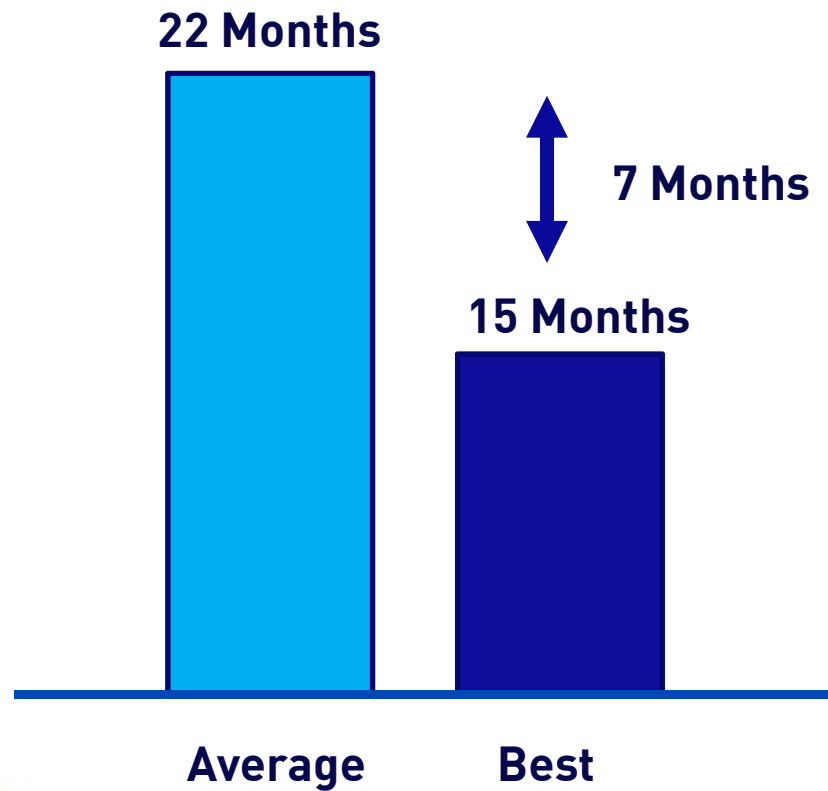


THE VALUE OF SPEED



Best in class FMCG Companies introduce Innovations seven months faster

Resulting in 60% higher sales in first year



*BCG Report Speed to Win April 2012

OUR FORMULATION JOURNEY

1 Litre FULL
Formulations
Per person per
day

In silico
1000's



Automated, 25



Manual, standardised, 5 - 7

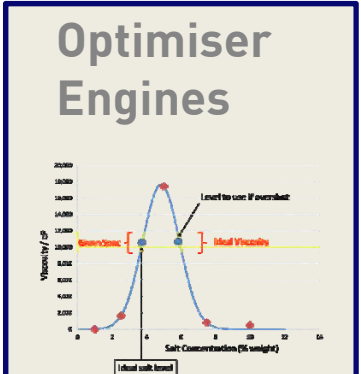


Manual, non - standard 2 -3

TO DRIVE SPEED TO MARKET FURTHER WE NEED TO LOOK END-TO-END



Computer Aided Formulation



Virtual Packaging Design

Factory Line Optimisation

Virtual Process Engineering

