

# The Intelligent Dieline

## Value Adding Opportunities for Folding Carton

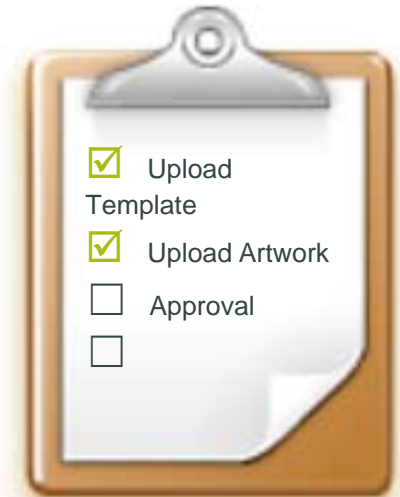
Jan De Roeck – Director Solutions Management

October 14<sup>th</sup>, 2009

41<sup>st</sup> International Circle Conference

# Today's Presentation

1. Challenging times for Folding Carton Converters
2. Meet Packaging Requirements ... and more!
3. Conclusion



# Challenging Times for Folding Carton Converters

# 1





## Brand owners and retailers – The industry drivers

What Brand Owners want ...

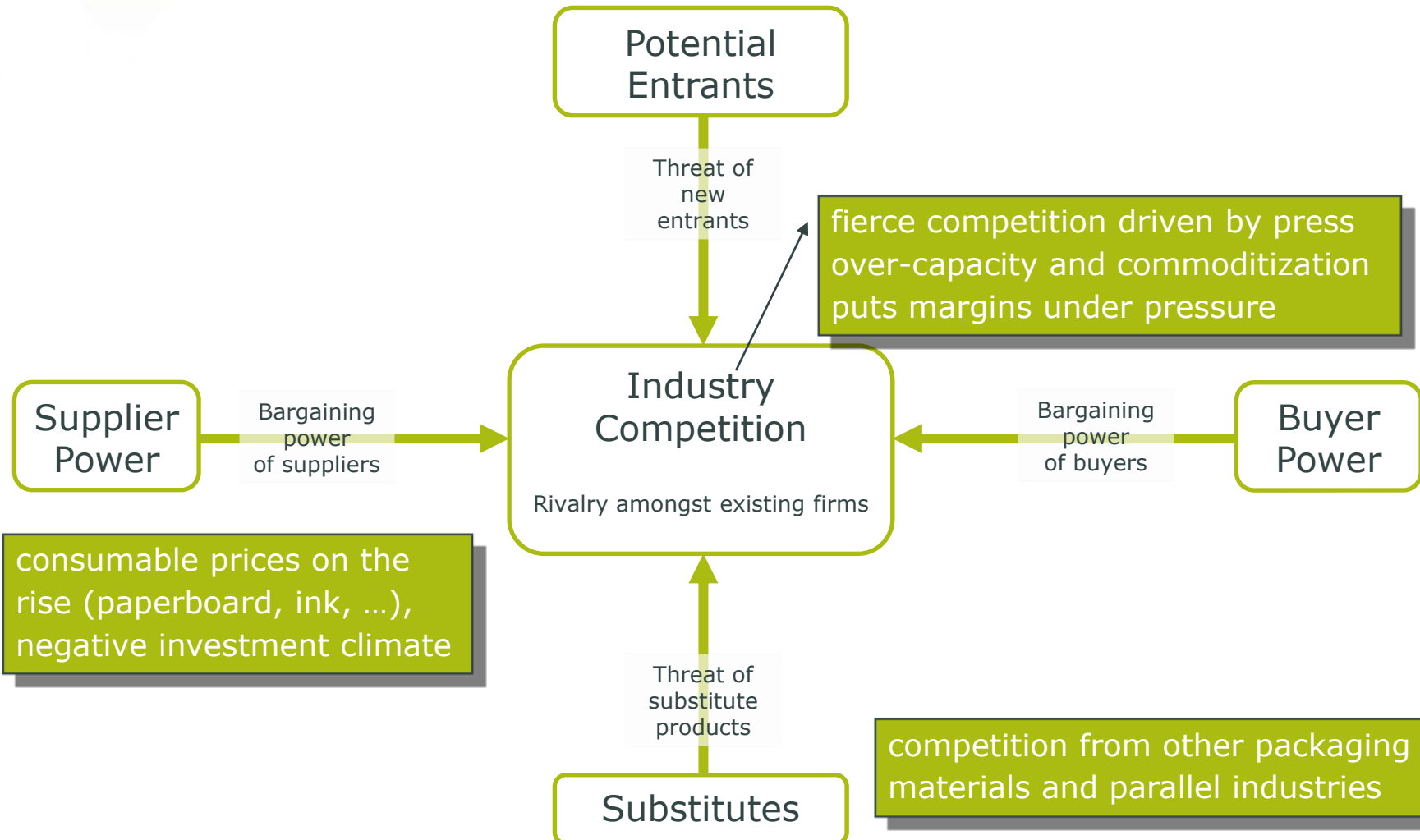
**“Faster  
Better  
Cheaper  
Greener”**



*“We will listen to suppliers who provide us a company wide, global solution that is applicable to all products”*

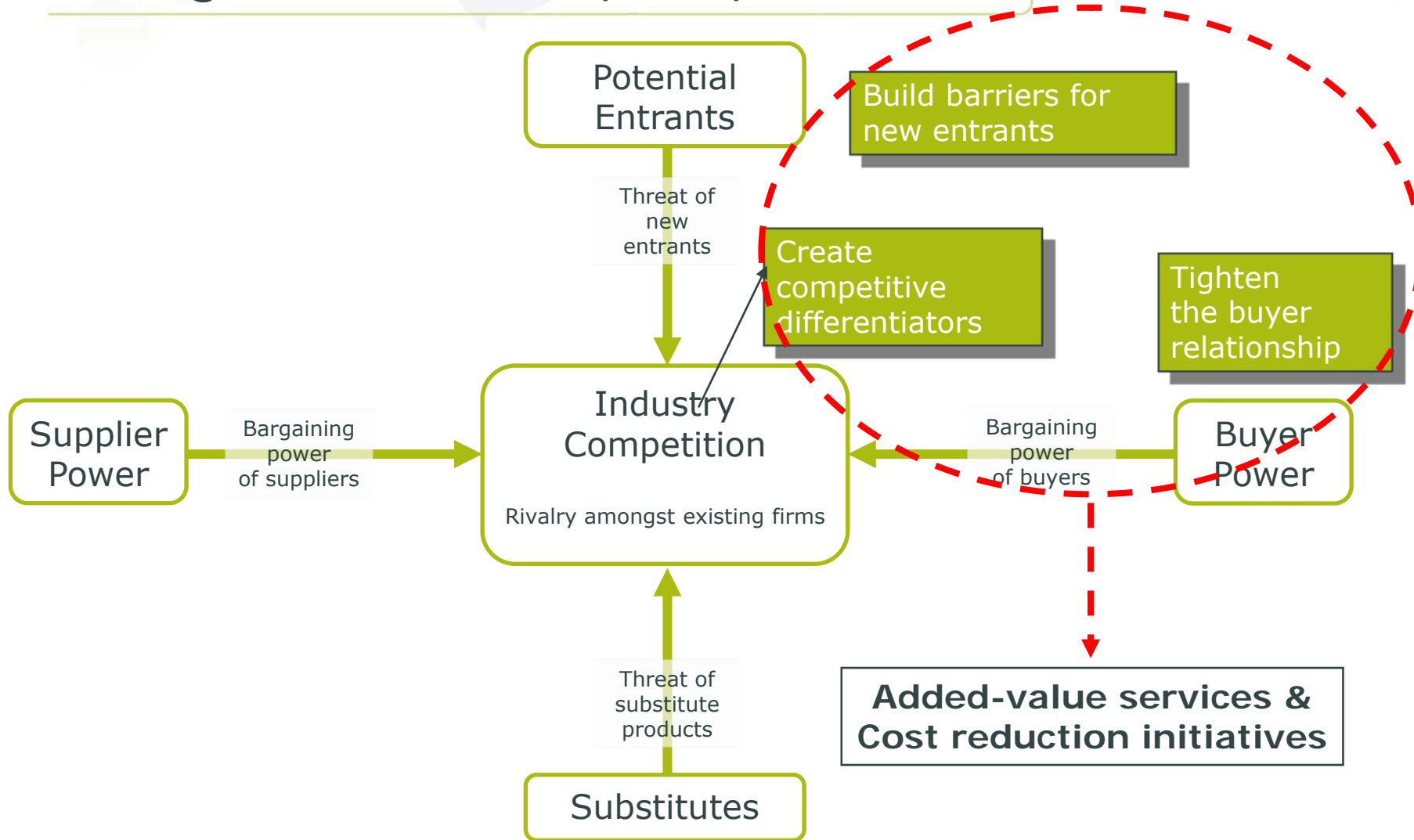
Quotes from Mr. Paul France, P&G, Digital Label Summit, March 2009

# Folding Carton – Industry Analysis



Based on 5 Forces Industry Analysis method by Michael Porter

# Folding Carton – Industry Analysis



Based on 5 Forces Industry Analysis method by Michael Porter



Meet Packaging Requirements ... and more

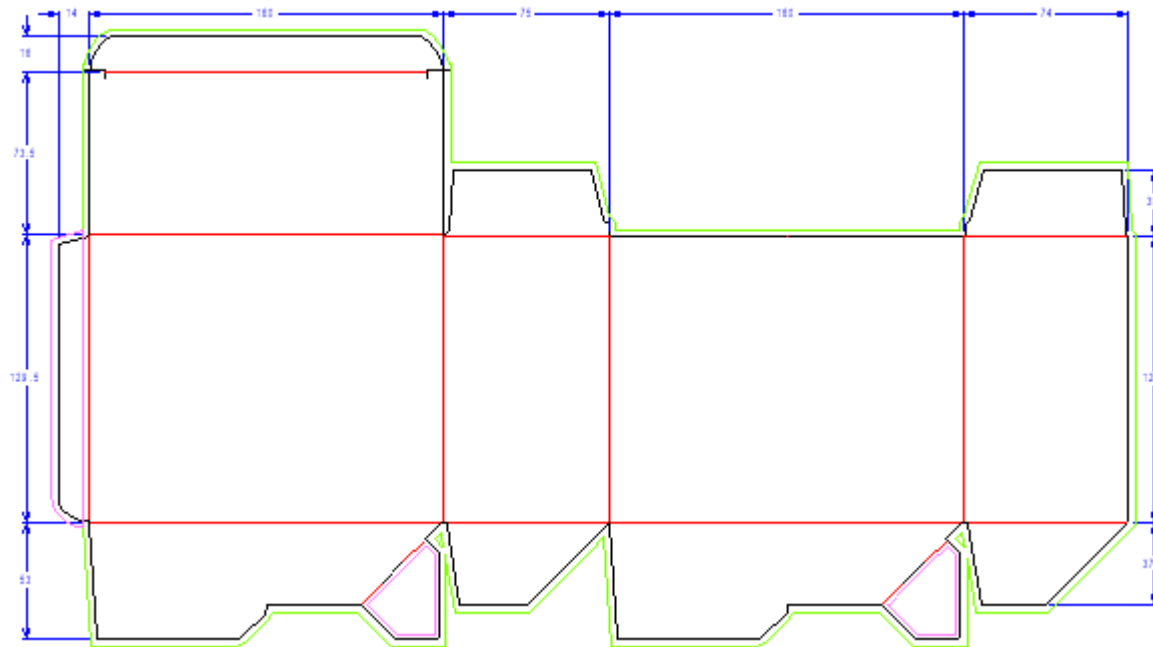
2



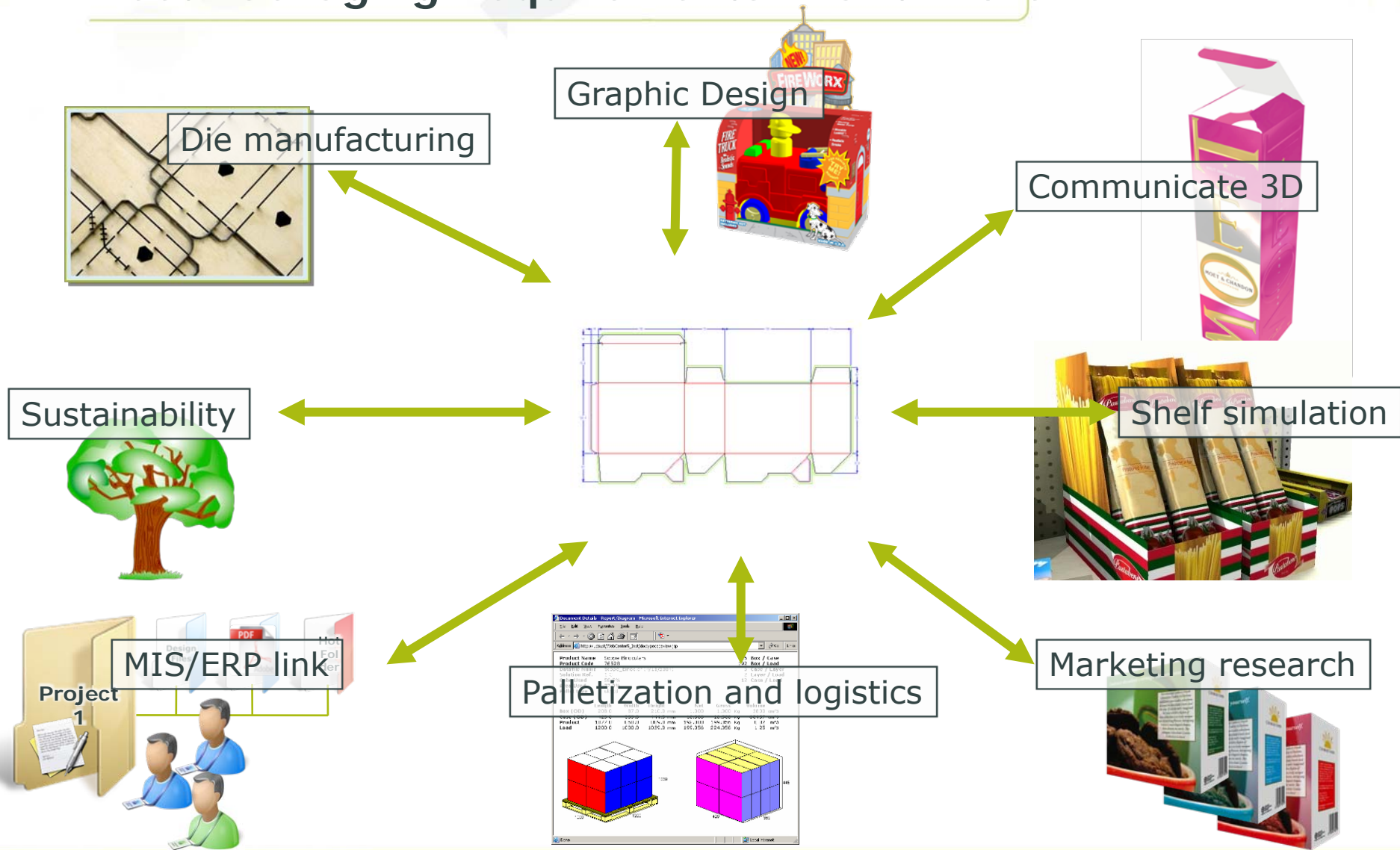
# Meet Packaging Requirements ... and more

Back to your core competencies – the **structural design file**

- Don't look too far for opportunities to create unique add value
- You own critical assets in the packaging value chain



# Meet Packaging Requirements ... and more



# 3D Design for Folding Carton - inside Adobe Illustrator

From this



Artwork with die-lines

to this



3D preview in Adobe Illustrator  
3D PDF file

in 3 minutes

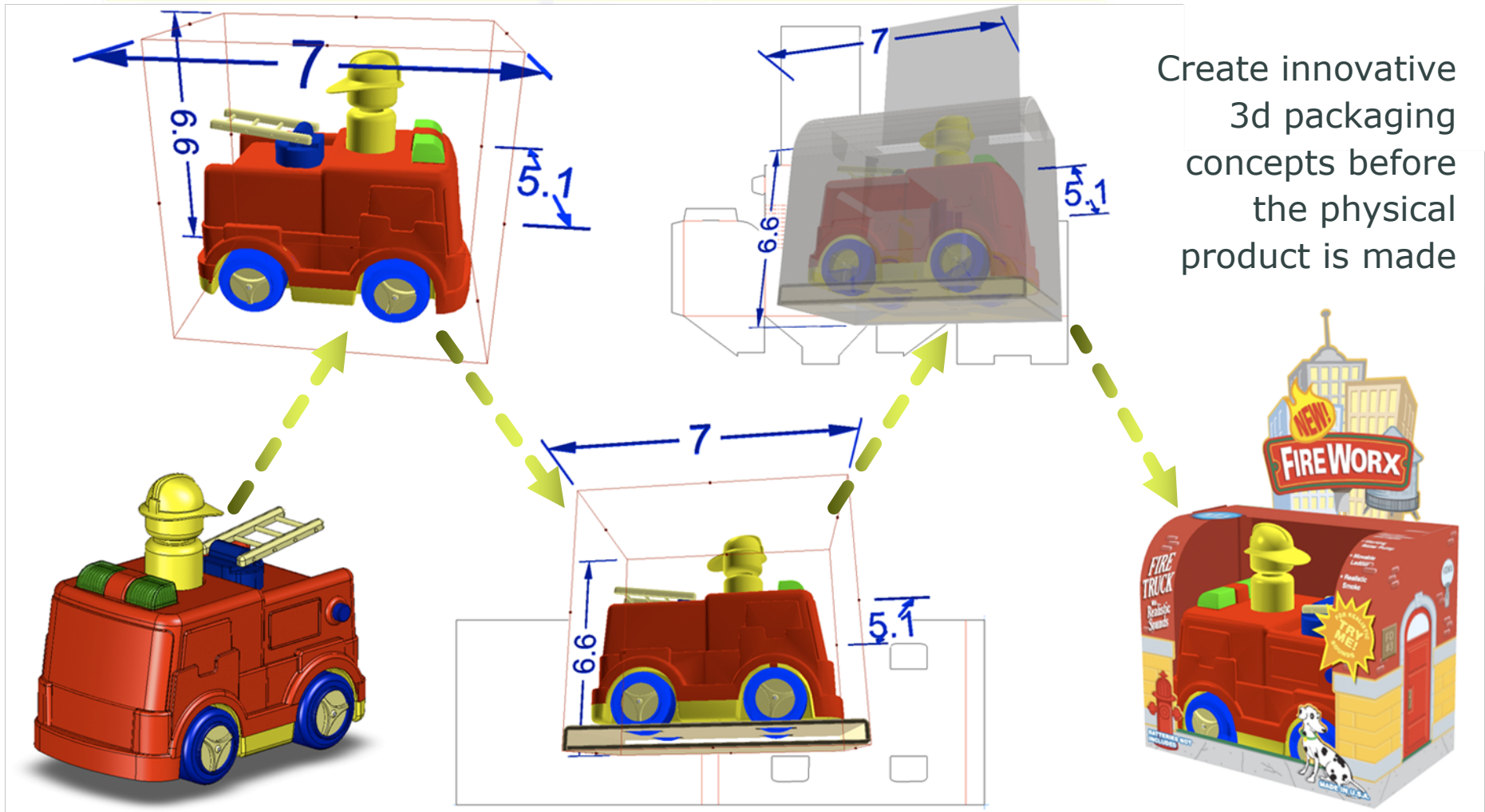


This will cost you money and customers...





# Intelligent 3D design



# Adding Value – Virtual Prototyping for Folding Carton

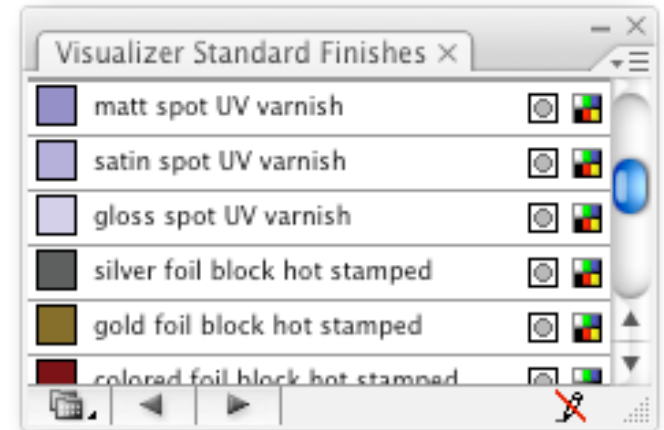
3D PDF from Studio



JPEG from Visualizer



Show your customer the 3D effects of substrate, special inks, foils, embossing and varnish, ...



# In Store Shelf Simulation

- Hyper-realistic previews of the product inside the packaging inside the display or shelf store ...
- ... even before the first mockup is made.





# In store 3D simulation technology





# In store 3D simulation technology



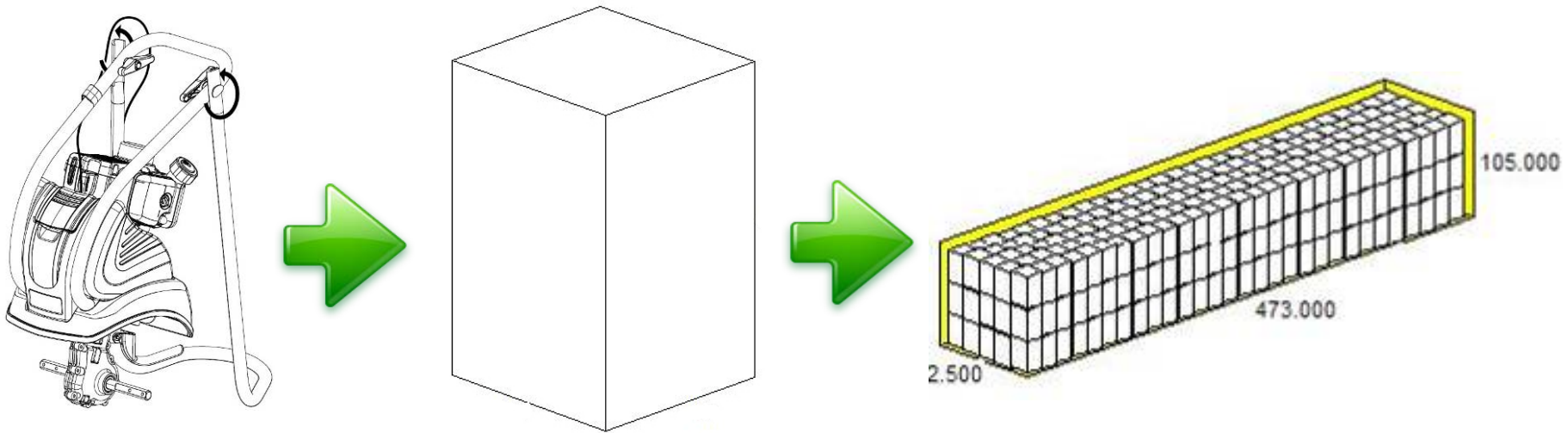
# Adding value – Market research

- Companies like Hotspex specialize in online consumer response.
- Immediate feedback from the test audience
- without bringing the test audience together!



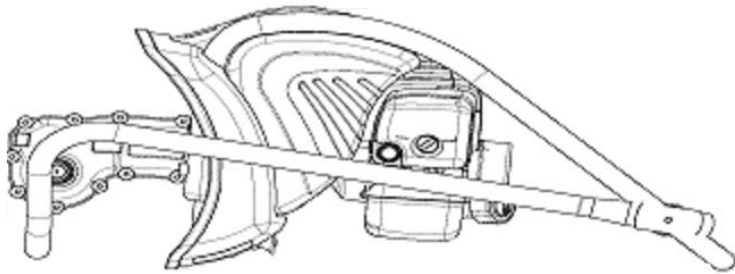
# Adding Value – Palletization and Logistics software

- CAD data contains info about size and weight of the final packaging.
- Based on your CAD data, applications like Cape or Tops Engineering can return Utilization Ratio's.
- Use this information to design more efficiently!

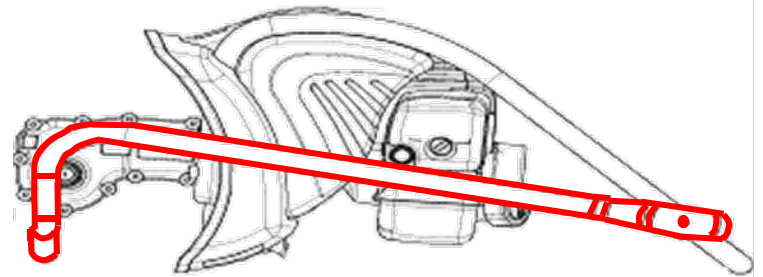


# Intelligent Design Changes

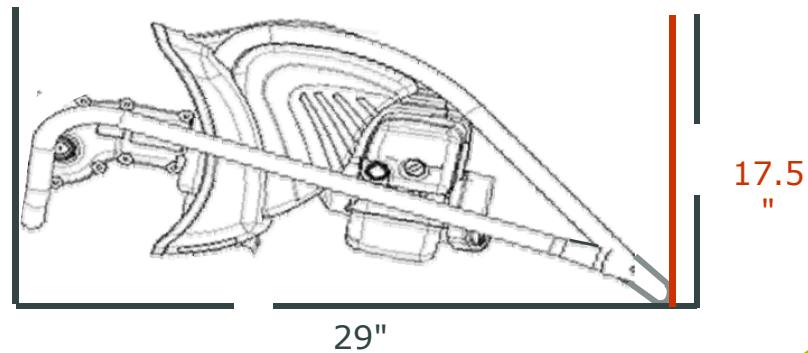
1: reduce carton length by 1.5"



2: move handle hinge point

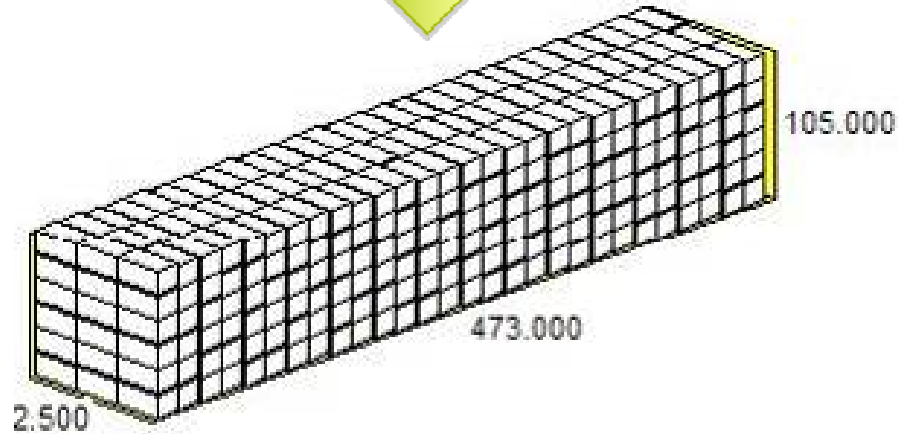
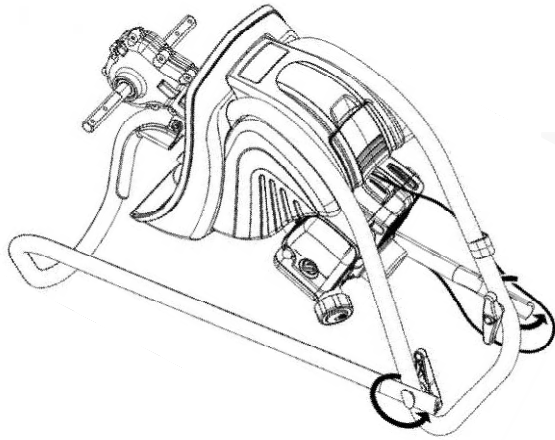


3: rotate product in carton





# Results!



- 504 units/container
- 14% increase in utilization
- 24 fewer containers/year

## Adding value - MIS/ERP integration

- Bi-directional link between CAD workflow and business systems
- Single point of entry for design specifications and critical data
- CAD as well as graphics
- The result:
  - Reduced errors in the workflow
  - Less product recalls due to typing errors

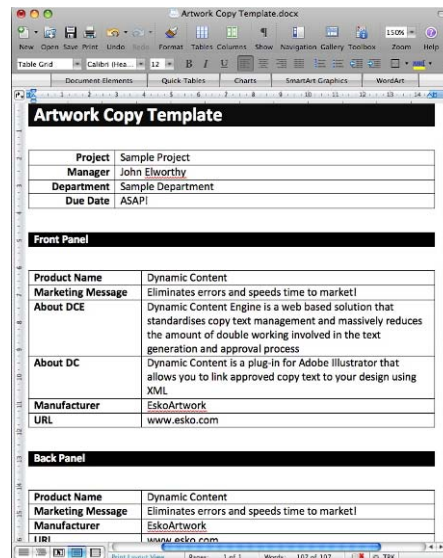
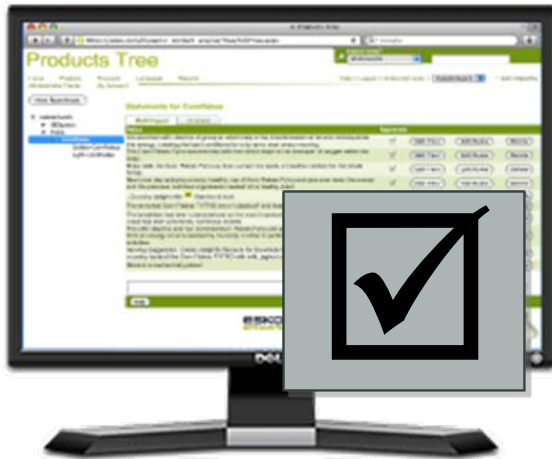


# Database driven design - CAD

The image displays three overlapping software windows from a CAD application:

- Single Design Settings:** A dialog box with a tree view under 'Parameter Set'. The 'Folding Carton - Metric - Single design parameters' option is selected.
- Board Information:** A dialog box with tabs for 'Caliper', 'Costs', and 'Test'. The 'Caliper' tab is active, showing input fields for:
  - Caliper (CAL): 0.35
  - Inside Loss (IL): 0.20
  - Outside Gain (OG): 0.20
  - Caliper Related Rounding Value (CRRV): 0.25An 'OK' button is at the bottom.
- 110.01.ARD - Inside dimensions [DESIGN1 - ard]:** A dialog box showing a 3D wireframe model of a carton with dimensions L (Length), W (Width), and D (Depth) labeled in green. To the right, there are input fields for L (0.00), W (0.00), and D (0.00), each with a small icon. A checkbox 'Automatically reinitialize subsequent variables' is checked. Navigation buttons include 'Next', '<Previous', 'Reinit', 'Reinit All', 'Edit', 'Reset', 'OK', and 'Cancel'.

# Database driven design - Graphics





# How is that useful for me?



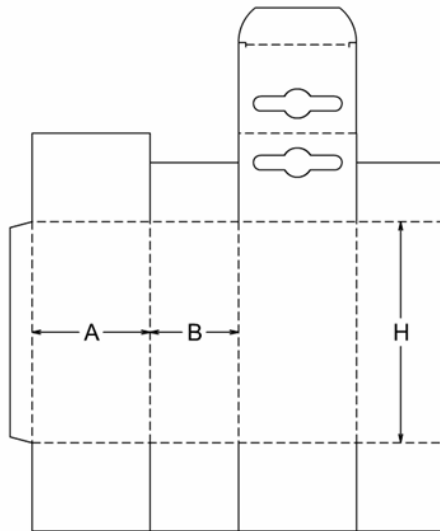
## Take your games everywhere you go

Get 8X the space of the original Xbox360™ Memory Unit.

- Save your game progress and transport your Xbox Live® account,
- Download content from Xbox Live.
- Download kiosk content at all participating retailers.
- Bonus carrying case fits on a keychain.

# Adding value – Sustainability and Carbon footprint

- Board specifications are linked to the die-shape.
- Feed this information in sustainability assessment software to estimate environmental impact of packaging design solutions



The screenshot shows the COMPASS software interface. At the top, there are navigation tabs: PROJECTS, COMPONENTS, ABOUT COMPASS, and RESOURCES. Below this, there are filters for ASSIGNED ORDER, ASSIGNED NUTS AND CHEWS, LIFECYCLE METRICS, and PACKAGING ATTRIBUTES & MATERIAL HEALTH. The main section is titled 'PRIMARY PACKAGE DETAILS' and shows the name 'Assorted Nuts and Chews' and a description 'Assorted gift box'. There are input fields for CAPACITY (18) and WEIGHT (100). Below this is a 'COMPONENT CONTRIBUTION' bar chart showing the relative contribution of various materials to the total environmental impact. At the bottom, there is a 'COMPONENT DETAILS' table with columns for NAME, EXTERNAL ID, MATERIAL, CONVERSION, PACKAGING TYPE, AMOUNT, % PCR, % CERTIFIED, and ACTION.

NAME	EXTERNAL ID	MATERIAL	CONVERSION	PACKAGING TYPE	AMOUNT	% PCR	% CERTIFIED	ACTION
NCK BOX24	box123	Solid Bleached Sulfite (SBS) Board	Production of Carbonboard	Folding Carton	35,000 g	10.00	25.00	EXPORT DELETE
NCK LID	lid123	Solid Bleached Sulfite (SBS) Board	Production of Carbonboard	Folding Carton	35,000 g	10.00	25.00	EXPORT DELETE
COMP LID1	wrap123	Polystyrene (PS)	Injection Molding	Other Plastics Containers	20,000 g	0.00	0.00	EXPORT DELETE
COMP LID2	wrap1234	Supercalendered Paper	Paper Cutting	Other Paper Packaging	15,000 g	4.00	0.00	EXPORT DELETE
COMP LID3	wrap123	Composite	N/A	Composite	7,200 g	0.00	0.00	EXPORT DELETE
COMP LID4	wrap123	Polystyrene (PS)	Flax Extrusion	Ships, Batches & Wraps	4,000 g	0.00	0.00	EXPORT DELETE



# Conclusion

3



# Realised Benefits

- Process reduced from **13 stages to under 10**
- **50-70% cycle time reduction** in many areas
- Error control prior to artwork release
  - Saving on supplier fees for corrections
  - No more mismatch of die line to artwork
- Shipping costs **reduced by 50%** or more
- Suppliers are integrated in the process
- Automated workflows **reduce human errors**
- Timeline **reduced by over 40%** across the entire design lifecycle process





# Connect More!

**ESKO**  
artwork



[www.esko.com](http://www.esko.com)