



Mass customization and personalization for the wood products industry

Urs Buehlmann and Torsten Lihra
Annual Meeting VWMA, January 28, 2011



Overview

- The Future...
- Mass Customization (MC)
- The New Economy
- Success Stories
- MC revisited
- Summary



The Future...

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Shop for Home & Home Office | Windows® . Life without Walls™ . Dell recommends Windows 7.

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Preliminary Ship Date: 1/26/2011

[Print Summary](#)

- Genuine Windows® 7 Home Premium, 64bit
- No Productivity Software
- 4GB DDR3 Shared Dual Channel Memory
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- Intel® HD Graphics
- 1 Year Basic Service Plan
- McAfee SecurityCenter, 15-Months

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The Future...

BONOBOS Contact the Ninja at 1-877-294-7737

FEATURES | PANTS & SHORTS | SHIRTS | SUITING | SWEATERS & OUTERWEAR | SHOES | ACCESSORIES | LOOKBOOKS | BLOG



Checks SL \$175

Black Wool with Subtle Check Pattern Like it Tweet it Share it
2 people like this

Waist Size [size/length guide](#)

28 30 31 32 33 34 35 36 38 40

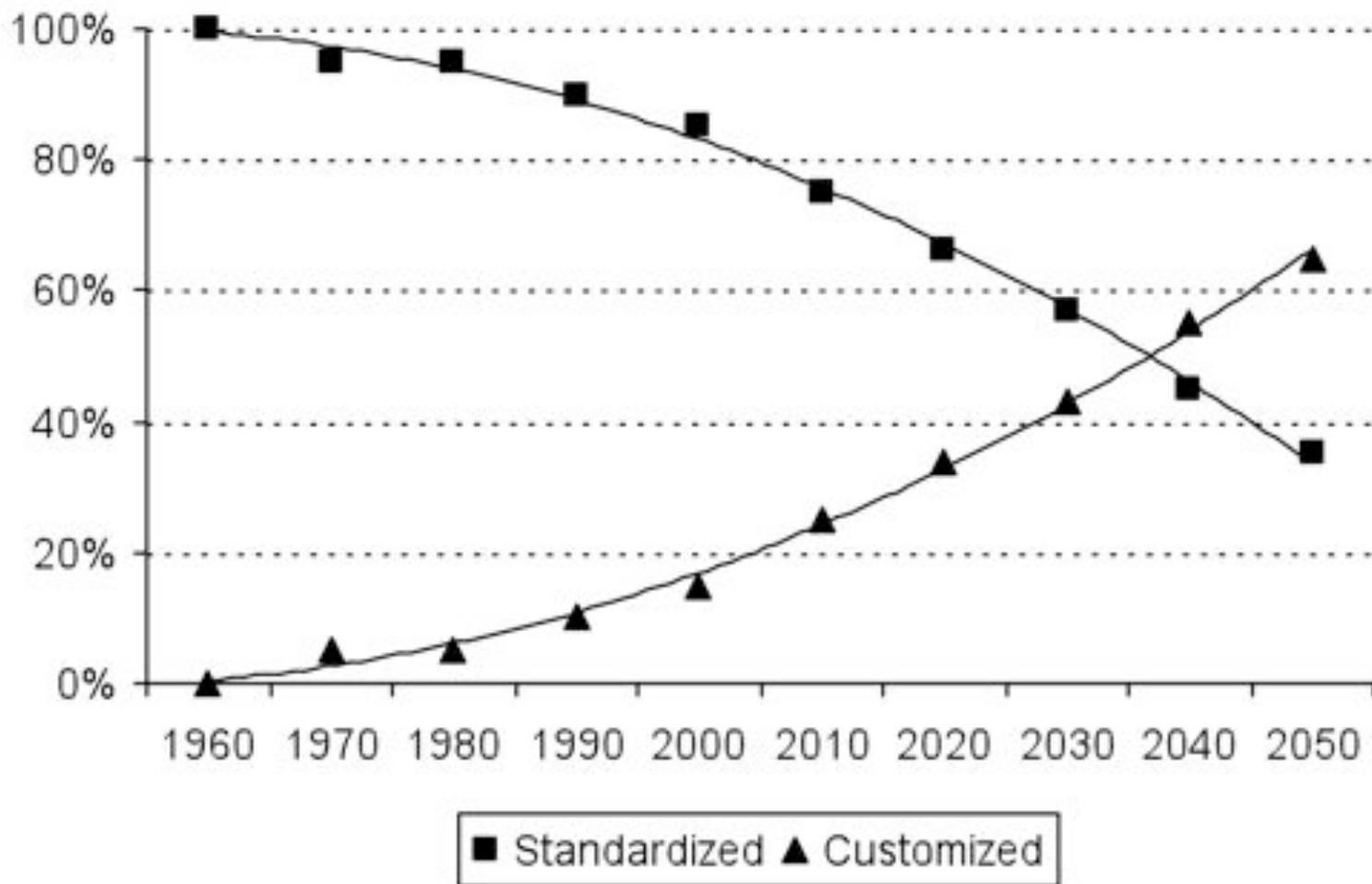
Free shipping both ways.
Amazing return policy.

ADD TO CART

Photos	Fit	Origin
 Dress Button Pocket	 New Waist Belt Loops	
 Nickel Side Zipper	 Blue Silk Lining	



The Future...



CHANGE!

- The Internet
- The long tail (niche markets)
- The green movement
- Globalization – WTO
- Containerized shipments
- Global capital investments
- Currency exchange and tax rates

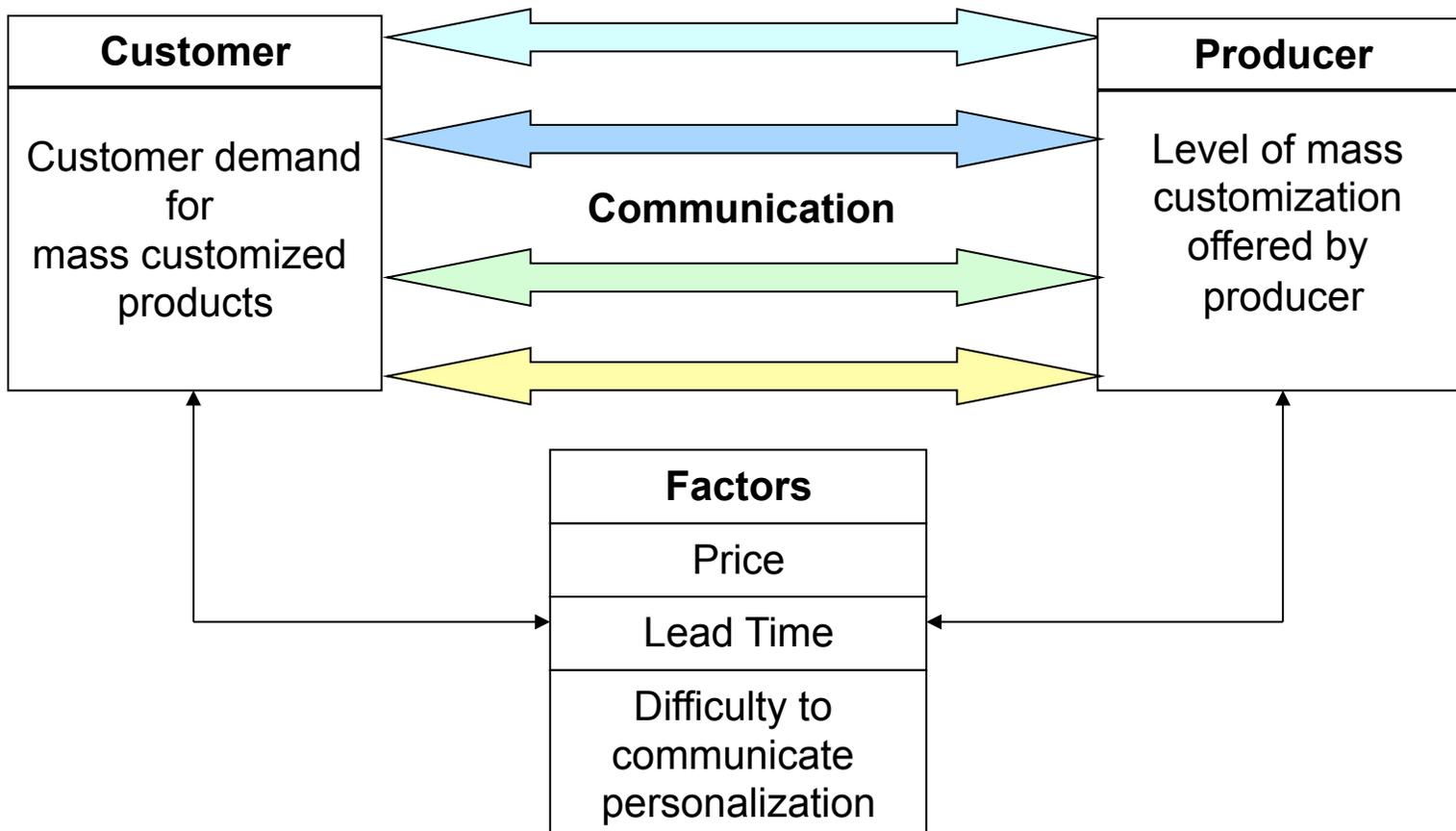
MASS CUSTOMIZATION (MC)

Definition of MC

Mass Customization is the “*fulfillment of customized orders at an industrial scale with competitive prices and competitive lead times.*”

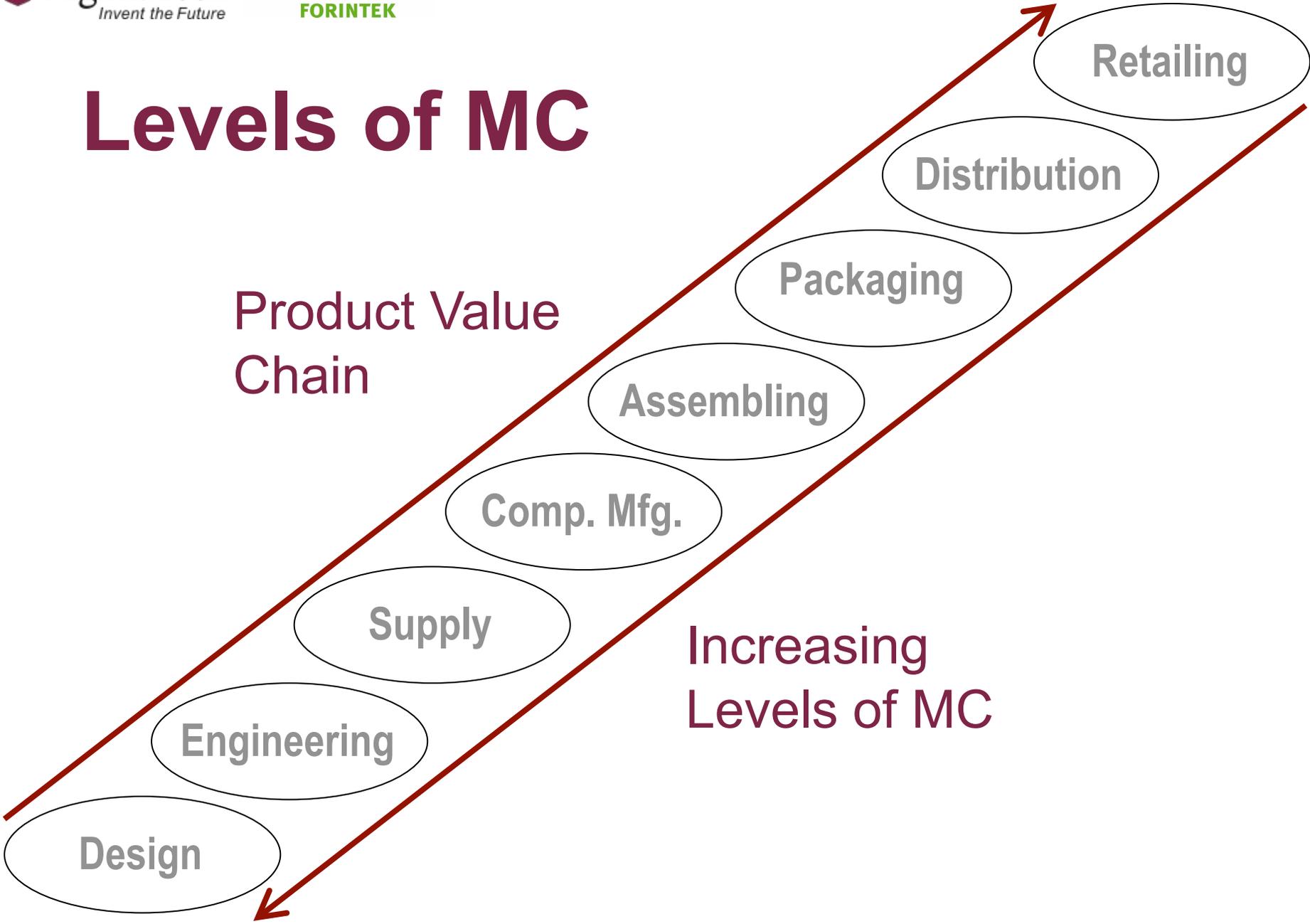
- ... customized orders
- ... industrial scale
- ... competitive prices
- ... competitive lead times

MC framework



Levels of MC

Product Value Chain



Increasing Levels of MC

Challenges

Implementation of MC is challenging

- Make-to-order (MTO)
- Small batch sizes
- Supply chain management
- IT
- Marketing
- Customer interaction
- ...

MC in different industries

- Architectural Woodwork
- Moulding
- Flooring
- Wood Components

- Nonupholstered household furniture
- Upholstered household furniture
- Office furniture
- Kitchen cabinets

Kitchen Cabinets

Configuring

offers end-users the opportunity to design furniture from a set of standard components or modules. Configuring may be done directly by the end user or may be done with the assistance of trained sales representatives.

Accessorizing

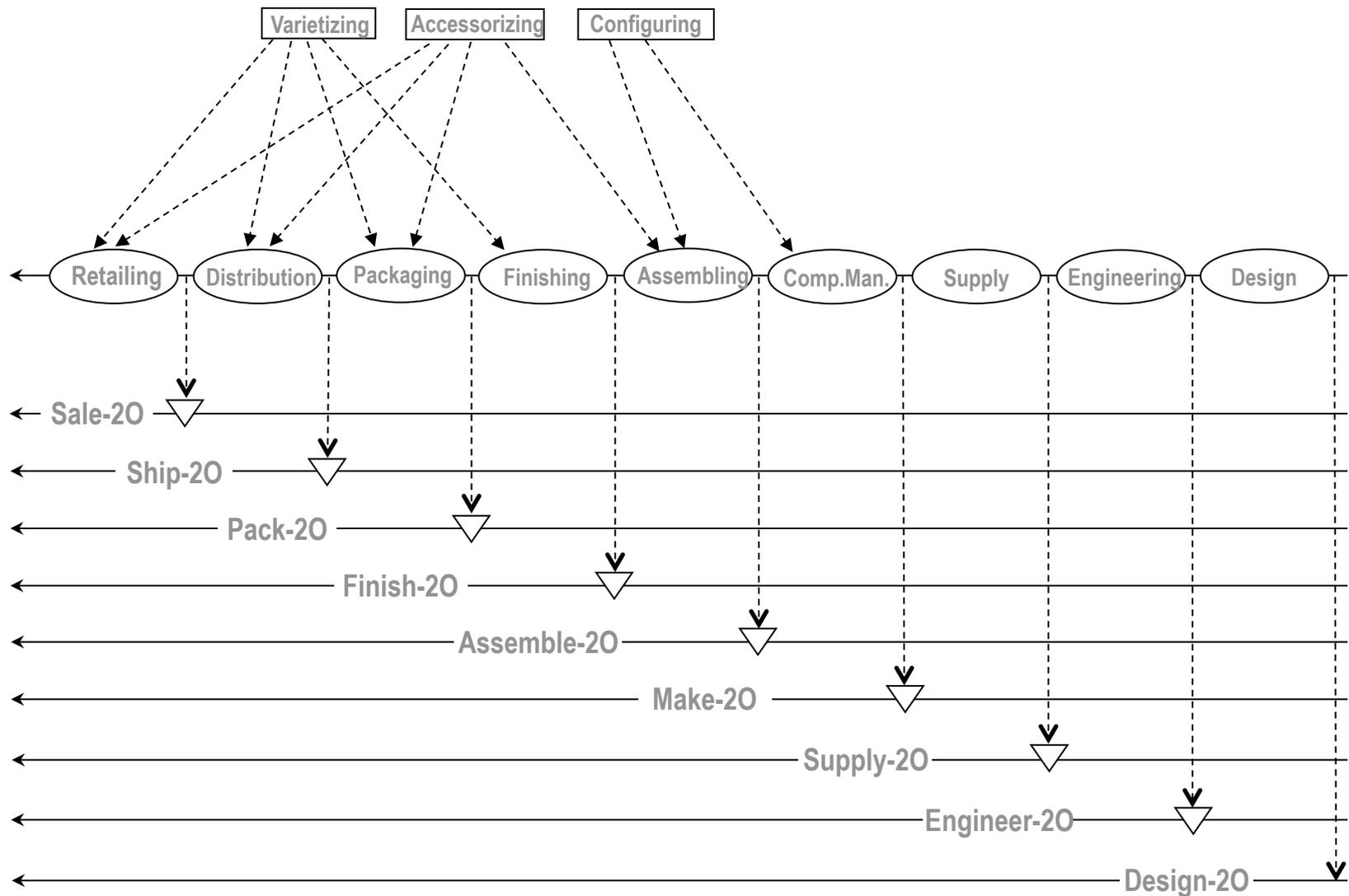
is the production of standard core modules that can be mass customized by adding accessories from a specified set of options. Final assembly of accessorized products is performed either by the manufacturer, the retailer, or the customer.

Kitchen Cabinets (cont.)

Varietizing

offers a wider variety of products covering a wider range of customer needs. Retailers pick those they think the customer wants to offer them off-the-shelf. Relies on quick delivery from distribution network and fast replenishment. Most often, variety is achieved through relatively simple changes to a standard product line, such as color or add-on items to products.

Kitchen Cabinets



Office Furniture

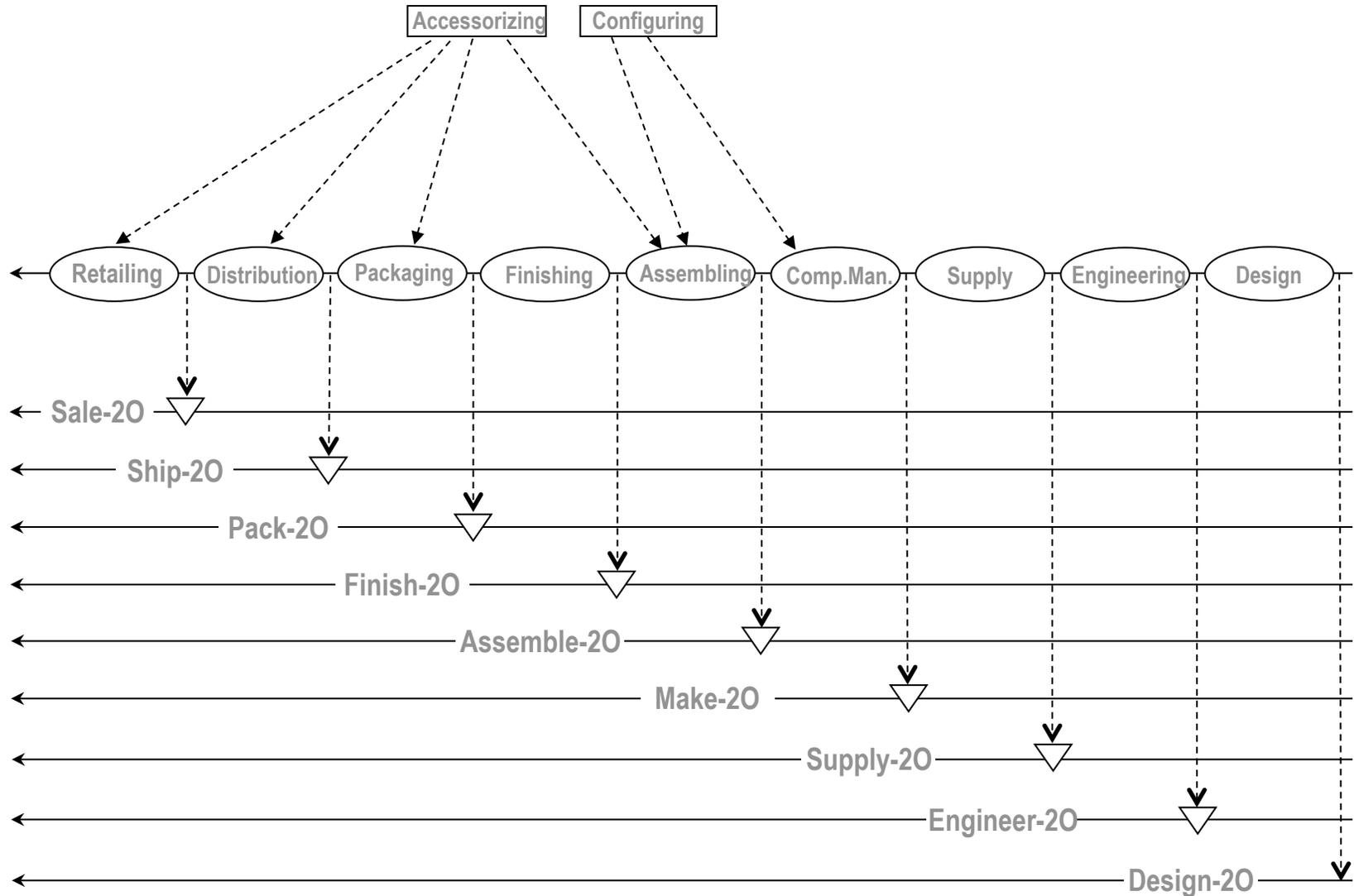
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Office Furniture

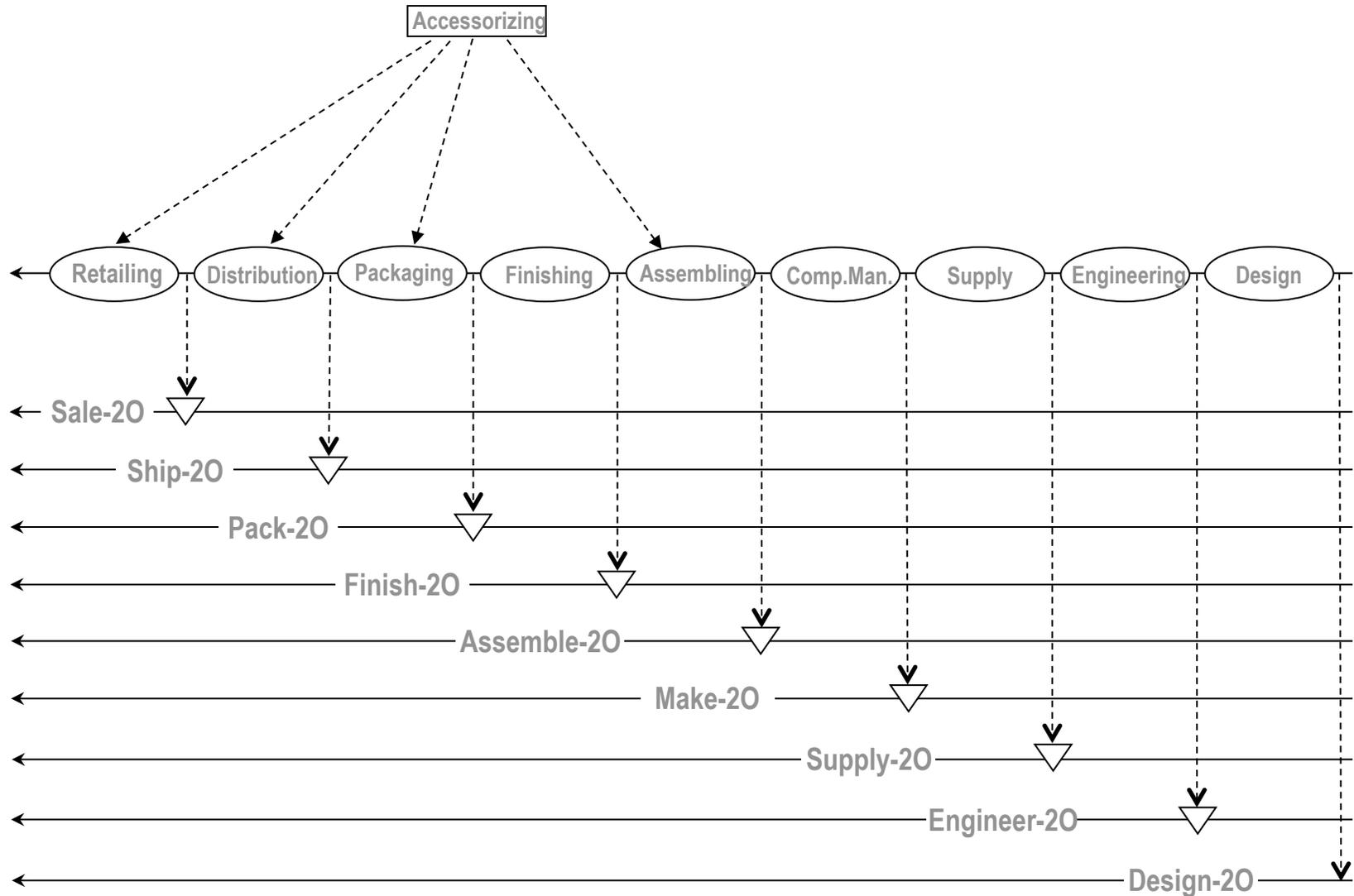


Upholstered Furniture

Accessorizing

is the production of standard core modules that can be mass customized by adding accessories from a specified set of options. Final assembly of accessorized products is performed either by the manufacturer, the retailer, or the customer.

Upholstered Furniture



Household Furniture

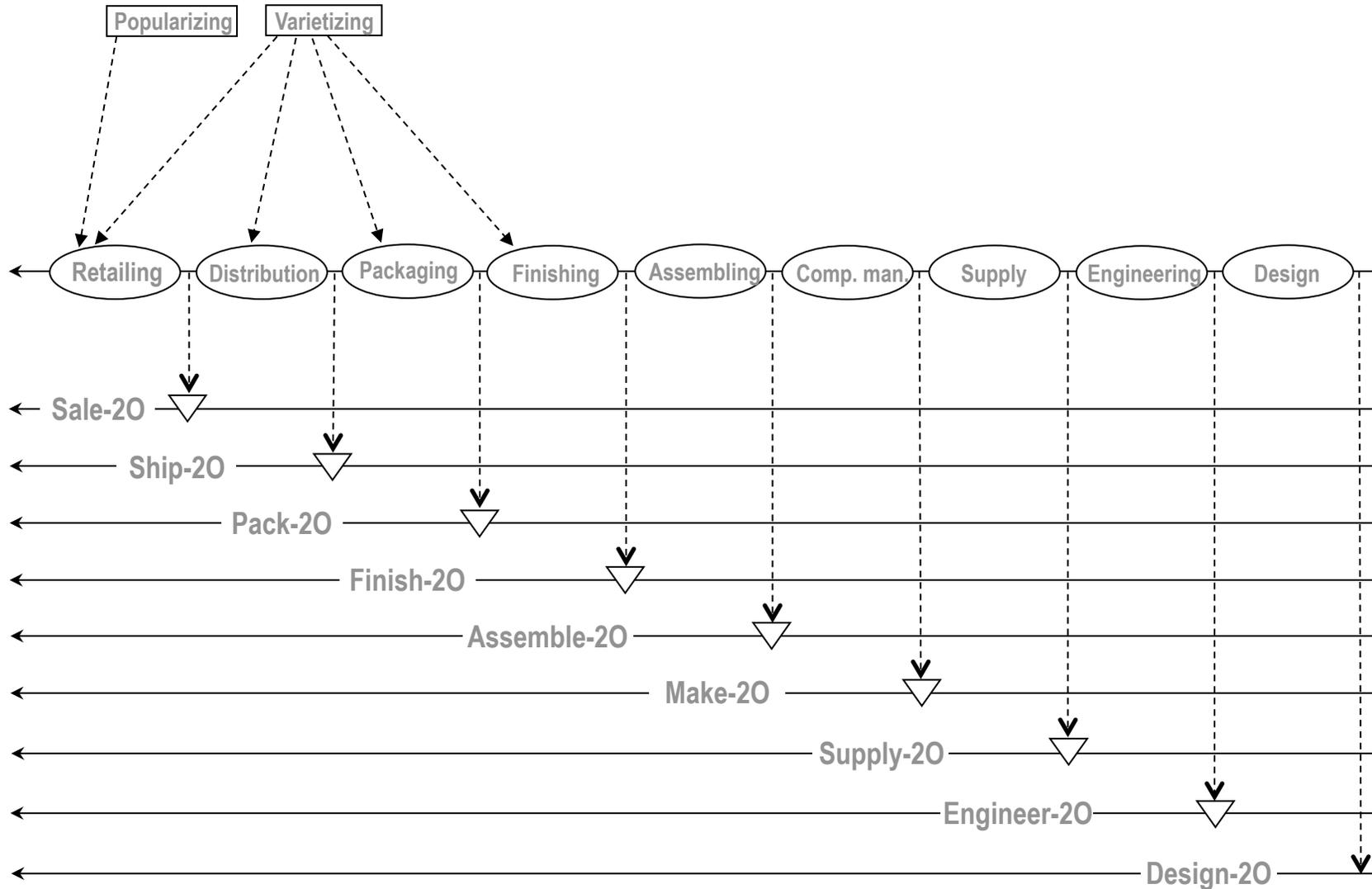
Popularizing

the mass producer's solution to customization. Limited number of items that can be stocked and sold off-the-shelf by retailers. Focus on evolving the popular product mix in-line with evolving customer needs.

Varietizing

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Household Furniture

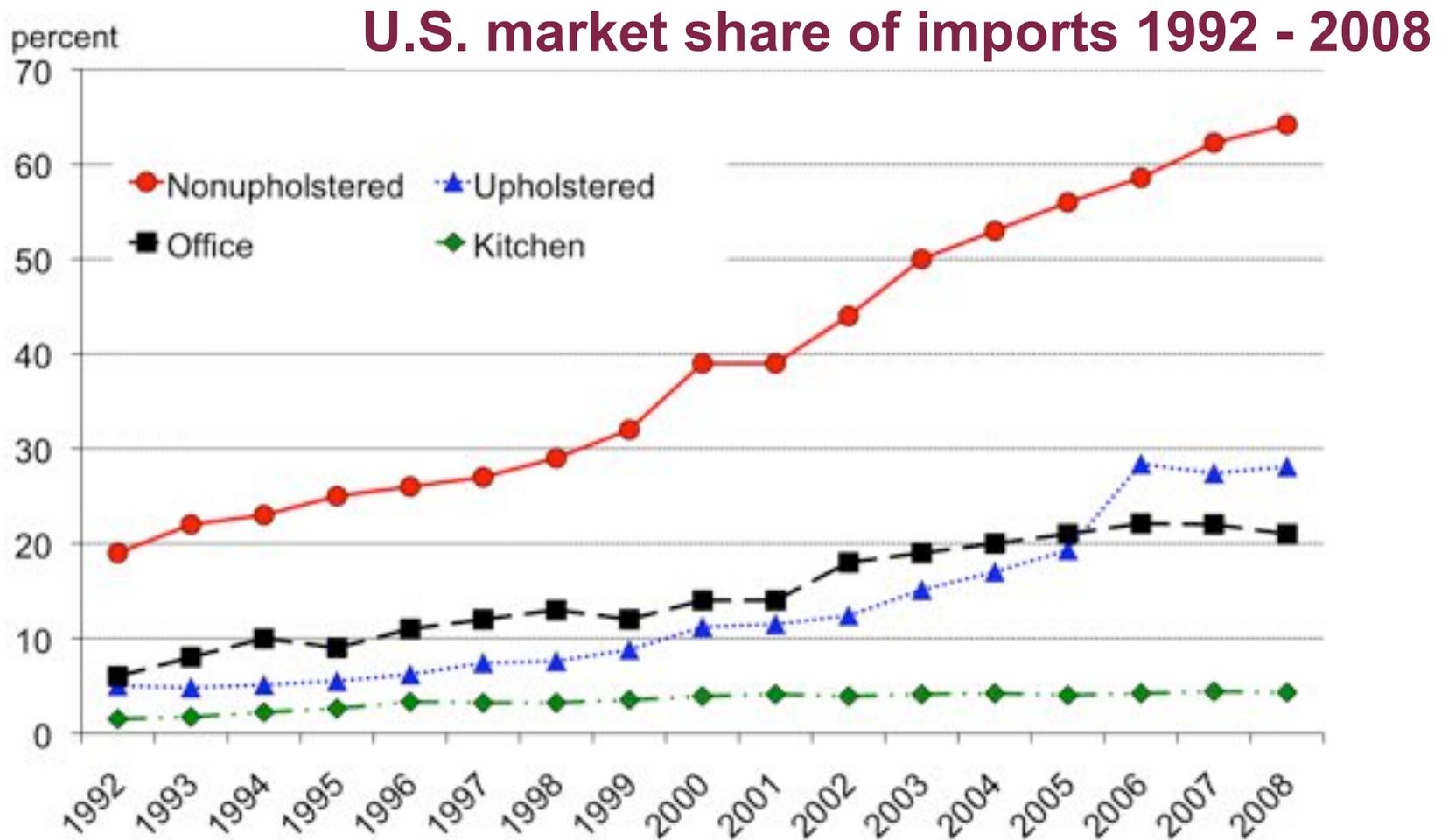


MC levels of example industries

Increasing levels of MC

Industry sector	MC level	Production mode
Kitchen Cabinets	<u>Configuring</u> Accessorizing Varietizing	Assemble to order Make to order
Office Furniture	<u>Accessorizing</u> <u>Configuring</u>	Assemble to order Ship to order
Upholstered Furniture	Accessorizing	Assemble to order
Household Furniture	<u>Varietizing</u> Popularizing	Ship to order

Performance of Industries

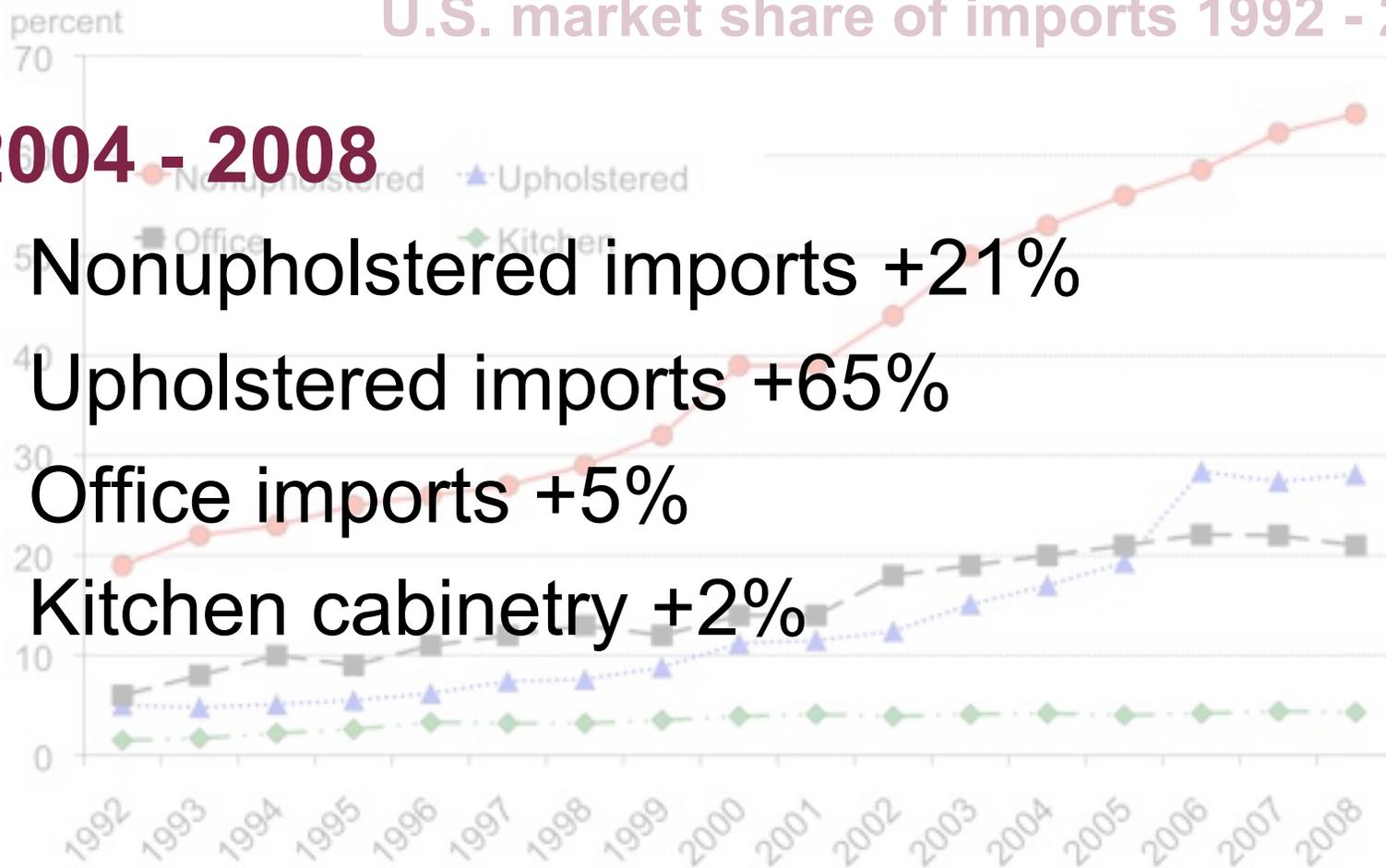


Performance of Industries

U.S. market share of imports 1992 - 2008

2004 - 2008

- Nonupholstered imports +21%
- Upholstered imports +65%
- Office imports +5%
- Kitchen cabinetry +2%



Success Stories...

CABINETRY AND OFFICE

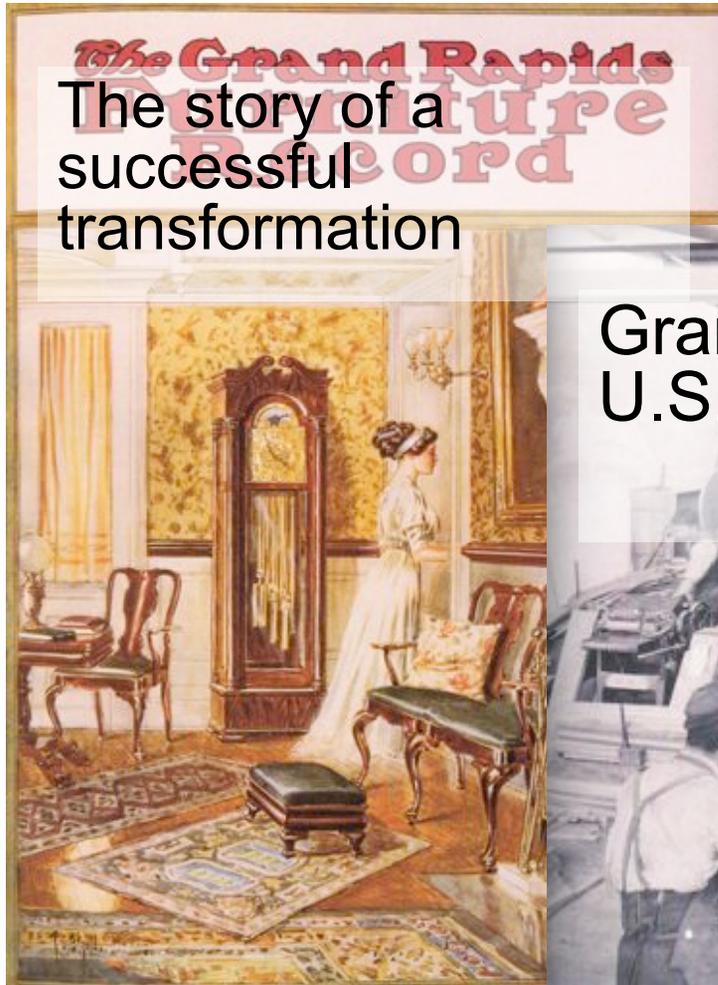


source: Kitchen Craft



source: Herman Miller

OFFICE FURNITURE EXAMPLE



source (both pictures): C. G. Carron, Grand Rapids Furniture 1998

FURNITURE MOVES SOUTH

the call of the South:

- cheap lumber
- cheap labor
- investment in new technology

THE FURNITURE MANUFACTURER AND ARTISAN

the call of the South!

THE South invites you, because it has much to offer you—much that you can use to your profit; much that no other section can give you.

The South has demonstrated to other manufacturers who have come here from less-favored sections, that it was for them the "Land of Promise" into which they journeyed and prospered, and, to-day, the inducements which brought them South and are offered to you—are stronger than ever before.

RAW MATERIALS: Native forests of the principal woods used in furniture manufacturing: Cedar, Cypress, Gum, Oak, Poplar, Sycamore, Walnut and the world-famous Southern Pine; right at the doors of Southern mills, delivered by freight-carriage direct to you. And cheap transport from all over the world, being Malagasy and other important woods in thorough Southern ports, at lower carrying cost than to Eastern and other ports.

POWER: Water power and hydro-electric power. **FUEL:** Coal, oil and gas. **LABOR:** Plentiful, reliable and to be had at low wages, because of low-cost living conditions.

TRANSPORTATION: Drawn by railroads and waterways to the principal shipping centers of the United States, through the ports of Charleston, Savannah, Jacksonville, Pensacola, Mobile and New Orleans, to the markets of the world.

The L. & N. Invites You South

The Louisville & Nashville Railroad invites you, Mr. Manufacturer, to come South to see South, as well as to its work. While this Railroad has nothing to sell but transportation, it has much to give to manufacturers its special information, as to specific conditions in Southern locations and its practical economies of service South. Ask for this information.

For Full Information, Communicate With
C. S. PARK
 General Agent and Freight Agent, South
 1000 Broadway, New York, N. Y.



THE GRAND RAPIDS FURNITURE RECORD



CHICAGO

... the South and other places...

CHICAGO is the greatest furniture market in the country, because it is the market place of greatest convenience to the greatest number—the only centrally located, readily accessible market place where the merchant may find the widest opportunities for selection and purchase, coupled with ample provision for his personal comfort—where he may find the most highly perfected machinery for doing business and the most inviting diversion for his leisure hours—where he may, in fact, find all the material requisites of a great national wholesale market amid surroundings that best contribute to his wellbeing, both as a merchant and as a man.

Midsummer Exhibition Opens July First

CHICAGO anticipates with pleasure the great gathering of Furniture Merchants within her gates during the month of July and presents them with a most cordial welcome and every convenience for their profit, comfort and entertainment.

Ample Hotel Accommodations

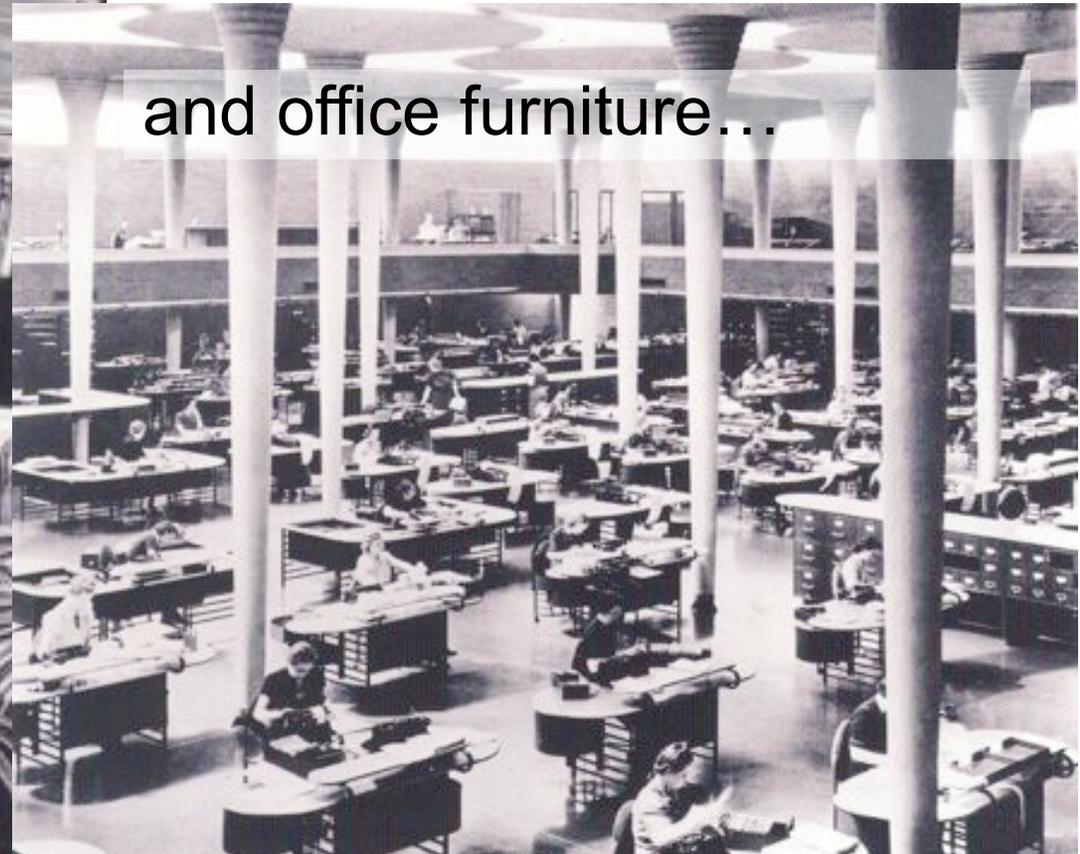



source (both pictures): C. G. Carron, Grand Rapids Furniture 1998

THE ONES LEFT BEHIND ADAPT



Grand Rapids is adapting - moving into contract...



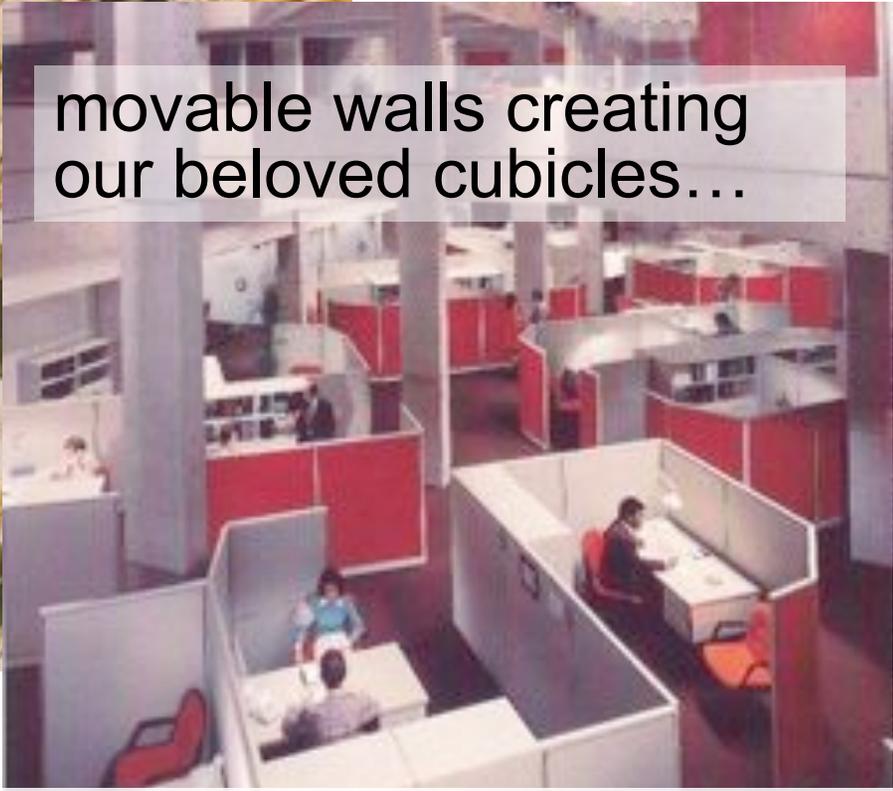
and office furniture...

source (both pictures): C. G. Carron, Grand Rapids Furniture 1998

INNOVATE



innovations keep coming - color choices...



movable walls creating our beloved cubicles...

source (both pictures): C. G. Carron, Grand Rapids Furniture 1998

REINVEST PROFITS

allowing the industry to make profits...

and to keep plants and employees up-to date and competitive...



OFFER MASS CUSTOMIZATION

starting with basic modules...



...allowing customers to
configure and accessorize their
products



source: <http://v2.steelcase.com/>

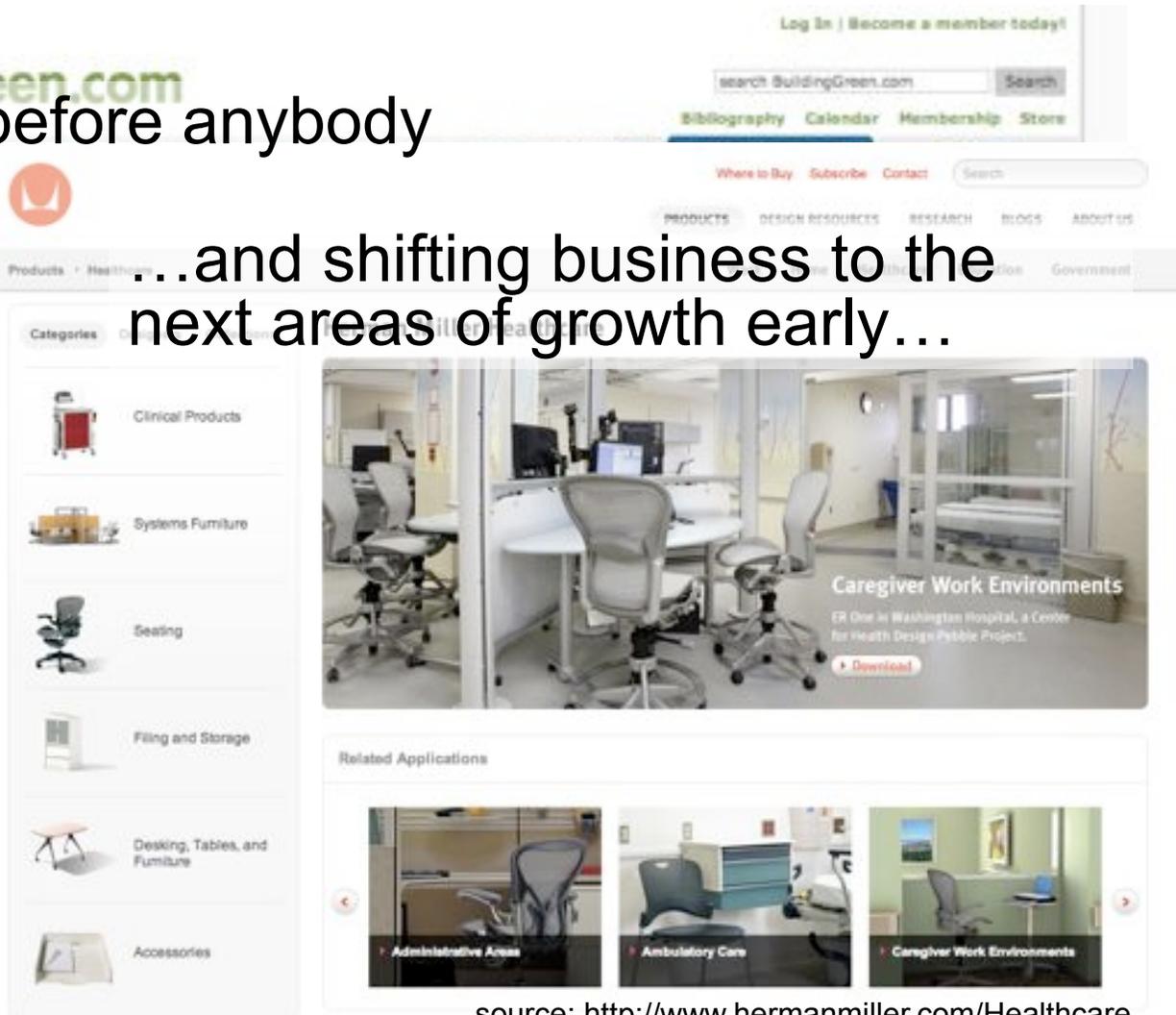
source: <http://v2.steelcase.com/>

... AND INNOVATE AGAIN!

going green before anybody else...



source: <http://www.buildingg>



...and shifting business to the next areas of growth early...

source: <http://www.hermanmiller.com/Healthcare>

MC REVISITED

Definition of MC

Mass Customization is the “*fulfillment of customized orders at an industrial scale with competitive prices and competitive lead times.*”

- ... customized orders
- ... industrial scale
- ... competitive prices
- ... competitive lead times

Challenges

Implementation of MC is challenging

- Make-to-order (MTO)
- Small batch sizes
- Supply chain management
- IT
- Marketing
- Customer interaction
- ...

Our Spring workshop will...

- show examples of successful MC
- offer a more detailed discussion of MC
- show a market study on the potential of using MC for improved market success
- address challenges of implementing MC
- have experts on hand for discussions
- allow for networking with peers!

- Collin and Steve know more...

SUMMARY

COMPETITIVE ADVANTAGE

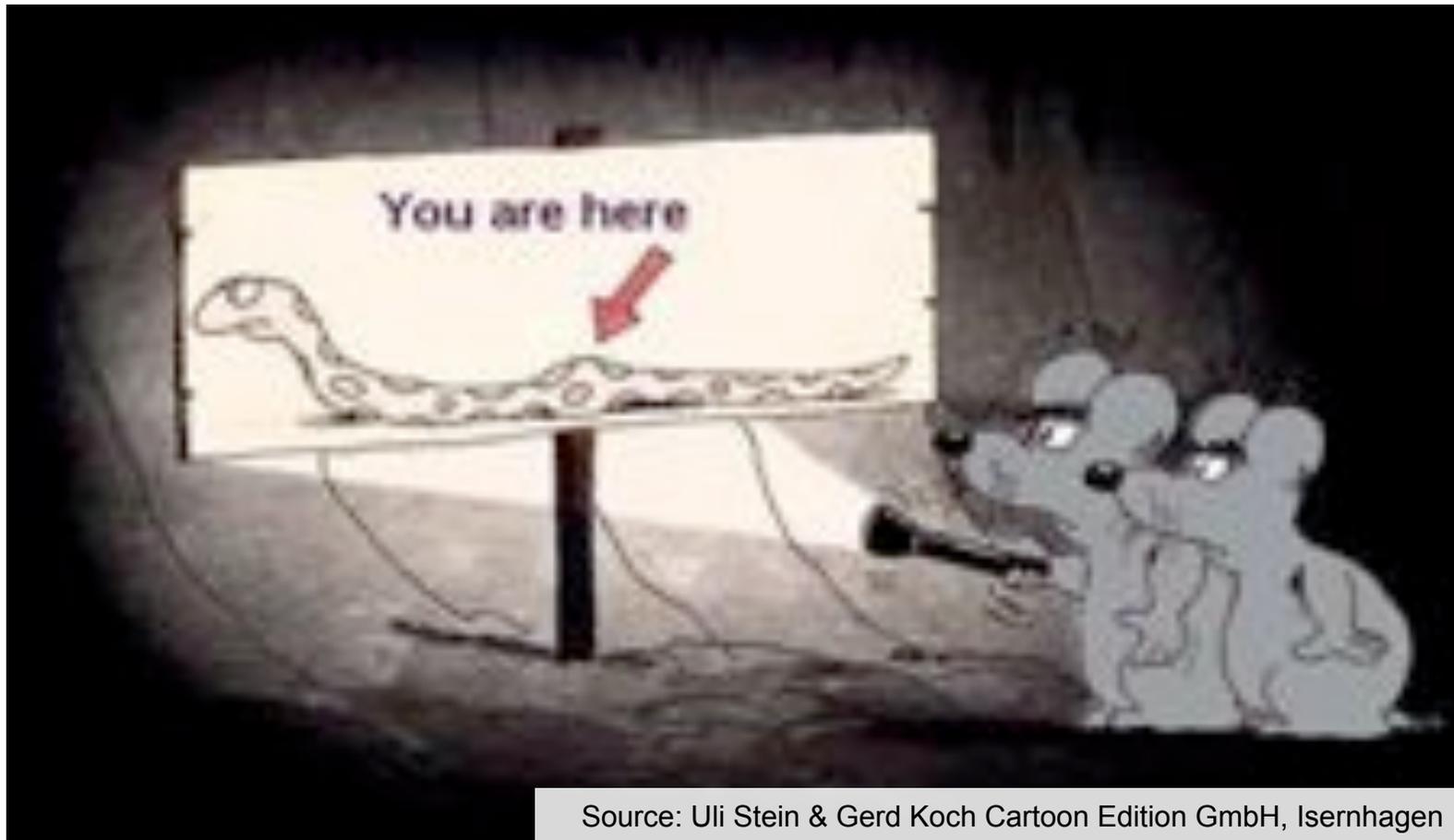
- The only two **SUSTAINABLE** competitive advantages in a time of global competition are:

CLOSENESS TO CUSTOMERS
and
INNOVATION

COMPETITIVE ADVANTAGE

Firms in the US need to leverage their main competitive advantage of **being close to customers** through **innovations** in product customization, faster delivery, convenient return and repair policies, and offer services in all other areas where customers expect value!

THANK YOU!



Source: Uli Stein & Gerd Koch Cartoon Edition GmbH, Isernhagen

Questions-Discussion