Mass Customization Implementation

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Overview

- Mass customization
- Mass customization implementation challenges
- Mass customization implementation
- The real challenge
- Summary
Mass Customization Implementation
Levels of MC

Product Value Chain

Design
Engineering
Supply
Comp. Mfg.
Assembling
Packaging
Distribution
Retailing

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
MC IMPLEMENTATION CHALLENGES
Manufacturer perception of MC implementation

Interviews with 22 furniture manufacturers on MC implementation issues

- USA, Canada, Germany
- Top management
- Companies of different sizes
- Companies that have implemented MC
Manufacturer perception of MC implementation

Future competitiveness

- offer more personalisation
- improve services
- target niche markets
- reduce shipping delays
- reduce production costs
- improve branding
- offer better buying experience
- automate
- improve retailer relationship
- target upscale furniture
- improve management skills
- innovate
- develop industry clusters
- create evolutive furniture
- be consumer oriented
- source worldwide

respondents (%)
Manufacturer perception of MC implementation

MC barriers and limits

• Internal barriers
  – company culture
  – industrial engineering skills

• External barriers
  – lack of retailer support

• MC limits
  – consumers’ design abilities
Manufacturer perception of MC implementation

Manufacturers always did the initial step to MC in a *try and error* mode

Desired consumer involvement:

- express needs
- chose options
- use Internet
- configur products
- design products

respondents (%)
Manufacturer perception of MC implementation

MC level offered by manufacturers

- colors
- dimensions
- styles
- hardware
- configuration
- item choice
- mouldings
- price points
- materials
- evolutive furniture
- design
- accessories

respondents (%)
Manufacturer perception of MC implementation

MC implementation challenges

- Sales forecast accuracy
- Product standardization
- Process automation
- Product development time
- Storage space
- Logistics
- Industrial engineering
- Labour flexibility
- Integration of sales, marketing and production
- Company culture
- IT
- Cycle time reduction
- Batch size reduction
- Set-up time reduction
- Supply chain management
- Production flexibility
- Cycle time reduction
- Company culture
- Integration of sales, marketing and production
- Labour flexibility
- Industrial engineering
- Logistics
- Storage space
- Product development time
- Process automation
- Product standardization
- Sales forecast accuracy

Respondents (%)

Respondents (%)
How to implement MC?

Understanding what you are doing
Product design

Traditional...

Simplified...
Evolution of processes
Software integration

Diagram:
- Point of Sale
- Order Entry
- Product Configuration
- Scheduling
- Supply Chain Activation
- Data Generation
- Production Data Generation
- Execution/Control
- Shipping
Point of sale
Order entry
Product configuration
Data generation
Supply chain activation
Scheduling
Product data generation
Execution / control
Shipping
MC implementation?

THE REAL CHALLENGE...

Leadership and change
Implementation challenges

Things to get right:

• Company culture
• Supply chain
• Production processes
  • set-up time
  • batch sizes
  • cycle time
  • production flexibility
• IT
Leadership

How to achieve successful change?

1. Establishing a sense of urgency
2. Creating a guiding coalition
3. Developing a vision, mission, and strategy
4. Communicating the change vision
5. Empowering broad based action
6. Generating short-term wins
7. Producing more change
8. Anchoring new approaches in corporate culture

Leadership and knowledge of change is crucial
Supply chain and production processes

All the challenges in the production processes, e.g.,

- supply chain management
- set-up time reductions
- batch size reductions
- cycle time reductions
- production flexibility increases

are addressed with Lean.
Lean transformation

Lean building blocks

- Continuous Improvement
- Teams
- Pull/Kanban
- Cellular/Flow
- Changeover Reduction
- Batch Reduction
- Visual Control
- Supermarkets
- Quality
- 5S
- Standard Work
- Plant Layout
- Value Stream Mapping
MC implementation
Summary – manufacturer view

Mass customization requires long-term commitment, knowledge and a holistic approach

- Product design and engineering
- Supply chain management
- Need production flexibility
  - low set-up times
  - small batch sizes
  - short cycle times
- IT