World Class Manufacturing

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World Class Manufacturing
Achievements to date

~44,000 WCM projects

~€730mn

Target 2010
(Lingotto plan Nov 2006)
€500mn
WCM evolution

Pillars

**10 Technical Pillars**
- Safety
- Cost Deployment
- Focused Improvement
- Autonomous Activities
- Professional Maintenance
- Quality Control
- Logistics & Customer Service
- Early Equipment – Early Product
- People Development
- Environment

**10 Managerial Pillars**
- Management Commitment
- Clarity of Objectives
- Roadmap to WCM
- Allocation of Highly Qualified People
- Commitment of Organization
- Competence of Organization
- Time & Budget
- Level of Detail
- Level of Expansion
- Motivation of Operators

Evolution has yielded...

- **2006**
  - 3,000 best practices
  - 250 tools
  - 11 standard practice books
  - Specified training program

- **2010**
WCM evolution

Plant rollout
WCM evolution
Cost deployment

Improved waste identification with greater project coverage and savings

- Cost perimeter: 2X (of A)
- Identified losses: 3X (of A), 44% (of B)
- Losses covered by projects: 4X (of A), 22% (of B)
- Saving: 4X (of A), 7% (of B)

€mn

0 1,500 3,000 4,500

2006 (Baseline) 2009
Over 50% of Blue/White Collars Involved

2006

Fiat Group WCM Development Center

Pillar leaders

Main project leaders

Blue-collars

Team leaders

270 WCM Specialists

WCM evolution
People involvement

4

100

350

1,000

4

100

350

1,000

2006

2006
WCM evolution

People involvement

Collection & evaluation
- Targets
- Weekly evaluation
- Feedback

Manufacturing training system
- Quality Gates
- Focused training
- Suggestions generated

Team conventions
- Periodic workshops
- Focused discussion
- Suggestions generated

Recognition & rewarding
- Plant Manager review
- Best proposals
- Best benefit/cost ratio reward

Fiat Group
Key achievements to date

- 1 million suggestions (4x 2006 level)
- Average 10 proposals/person per year (15 in best plants)
- Absenteeism reduced by 14% vs. 2006
WCM results
Safety

Tychy Plant
(FGA)

Fiat Group safety
(Frequency Index 2006 vs 2009)

-53% reduction in frequency index

More than 23,000 preventive actions

Best sector in the Group

-53% reduction in frequency index

-70%
(2006 vs 2009)

Fatal

Injuries

Near misses

Unsafe acts & Conditions
Energy Reduction

- **Electrical energy**
  - Electric motors controlled by inverter
  - Substitution of old motors

- **Compressed air**
  - Leakage reduction
  - Pressure optimization

- **Heating – Cooling**
  - Insulation
  - Heat recovery from exhaust gas

- **Green energy**
  - Purchase of green-certified electrical energy
  - Photovoltaic generation
  - Use of other green energy sources such as landfill gas

- WCM is a key contributor to Sustainability Plan
- 20% energy reduction from 2006 to 2009 (GJ/vehicle)
- 13% CO₂ reduction from 2008 to 2009 (tons/vehicle)
WCM results
Quality: Iveco Suzzara plant

Quality gates

Prompt feedback

Counter-measures

80% warranty cost reduction from 2006 to 2009
WCM results
Productivity: improvements at FGA European plants

Workstation redesign reducing unnecessary movements and increasing productivity

(*) NVAA: Not Value Added Activities; (**) VAA: Value Added Activities
WCM results
Reduction of not value added activities (NVAA)

- Magneti Marelli Corbetta plant: 25% NVAA reduction
- CNH Burlington plant: 14% NVAA reduction

Golden zone & one-piece flow application
WCM results
FGA Logistics

Transportation & Handling

Methods’ Standards
ICT Standards
Operational Standards

Reengineering of handling processes based on Standards

Automatic Guided Vehicles for Just-in-Sequence (JIS)

Logistics Cost
FGA European plants

-26% 2006 vs 2009

New foldable containers for components improve truck utilization
WCM results
Assembly line restructuring

**Iveco** Brescia
(Assembly shop)

Before

After

**FGA** G.Vico
(Assembly shop)

3 Lines

1 Line

throughput time reduction

33%

12%

Current stations
Eliminated stations
Closed stations
WCM extension
Suppliers

Alignment of Production System for all new contracts

APV(€) w/o FIAT Group companies

2006 2009 2014 E
~20% APV
WCM Program for Specific Supplier Plants

~60% APV
Production System Alignment Agreement for all new sourcings

APV = Annual Purchase Value

Support FIAT Group Plants

~ 60% near to Fiat Group plants
**WCM extension**
World Class Logistics applied to parts distribution

**Parts distribution logistics is a key factor for competitiveness**

**Parts operations system**
Fiat Group and Chrysler

**Activity examples**

**First results**
- Program launch in 2009
- 10 depots involved in the program worldwide
- 23% productivity improvement in model area (CNH Modena)

Organization of internal handling
WCM Plan 2014
Fiat Group roadmap

138 plants involved
~70% of Group plants & 95+ % of cost perimeter

Beginners
Intermediate
Advanced
Leaders

World Class
Gold
Silver
Bronze
Intermediate
Beginners
WCM Plan 2014

Challenges

**Extension**

**STEP 1-3**

**STEP 4**

**STEP 5**

**STEP 6**

**STEP 7**

**CURRENT INTERVENTION AREAS**

**REMAINING PLANT AREAS**

**LEADERSHIP DEVELOPMENT**

- Team-Leaders/Supervisors
- WCM Engagement at All Levels

**KNOWLEDGE CREATION & TRAINING**

- Advanced Methods
- Advanced Waste Identification

**WORLD CLASS PLANT COVERAGE**

- 2009: 40%
- 2014: 100%
WCM Plan 2014
Fiat Group savings 2010 - 2014

Fiat Group savings 2010-2014

- ~6% savings per year over plan period (€2.6bn cumulative savings since 2006)
- ~190k new projects (230k cumulative projects since 2006)
May 16th 2009: WCM kick-off

- WCM launched in 30 plants in USA, Canada, Mexico
- Cost perimeter 2010: $3.2bn
- 27,000 people trained on WCM principles
- Full UAW & CAW commitment
On average, 20 Fiat Group WCM Specialists active at any time out of a team of 100 supporting Chrysler
WCM Chrysler
Jefferson North plant restructuring

- Utilization of 1-month temporary shutdown (Oct '09)
- Extensive training (~1,250 employees)

- $1.4mn savings in '09
- $15.8mn savings forecast for '10
- 446 projects
- 1,800 employee suggestions

Prepare for 360° transformation

New Grand Cherokee 2010
WCM Chrysler
cumulative WCM savings

Economics
Cumulative WCM savings

Projects
Cumulative number

~$200mn

>$1bn

2010E 2014E

15,000

87,000

2010E 2014E
World Class Manufacturing
Our roadmap to world class plants

- WCM common language
  - One standard
  - Shared practices totally transferred to Chrysler Group

- Key contributor to Fiat Group Sustainability Plan

- Enlarging scope of intervention over 2010-14 period
  - Involvement of 90% of workforce
  - 190k projects
  - Extension of WCM program up to 550 supplier plants

- By 2014, targeting
  - Award area to include all Group plants
  - Cumulative savings of €1.9bn during 2010-14 period