



# Team Project

EMGT 520: Management of Engineering and Technology

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## Strategic Issues in smart Car Implementation

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# Agenda



- **History**
- **Corporate Strategy**
- **Is smart a success?**
- **What did they try to do to keep them back on track?**
- **Future Plan & Strategy for smart in the U.S.**



# History



- smart is originally a two seater car, which is thought to be an answer for mobility problems
- It was the second big idea of Nicolas Hayek, who is the co-founder of SWATCH
- Hayek thought about building a car which was having SWATCH products' aspects: chic, functional, small



# History



- There was a barrier in front of Hayek:  
*“He did not have any knowledge about car business”*
- So, he decided to form a joint venture with a car company
- After being rejected by Renault and Volkswagen, SWATCH formed a joint venture with Mercedes-Benz in 1994: Micro Compact Car AG
- 1994 is also accepted as the birth date of **smart** (**S**watch **M**ercedes **A**RT)



# History



## ■ Milestones in smart History:

- 1994 – Micro Car Company is established in Switzerland (49%SWATCH, 51% Mercedes Benz)
  - Factory site is chosen in Hambach (France)
- 1997 – smart engine plant is established in Germany
  - Debut of smart at the IAA in Frankfurt
  - Birth of Smartville
- 1998 – Production and sales of smart begin
  - Daimler-Benz takes over Chrysler
  - SWATCH leaves the venture



# History



## ■ Milestones in Smart History (continued):

- 1999 – Micro Car Company turns into smart company
  - smart company becomes the first manufacturer to sell cars via Internet
- 2001 – Launch of smart cabrio
- 2003 – Launch of second generation smart
- 2004 – smart is introduced in Canada
- 2005 – smart company ended the year with a loss



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# smart Corporate Vision

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**“(smart) is two-thirds product and  
one-third philosophy”**

**-Hans Jürg Schär-  
-smart director of sales and marketing -**

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# smart Corporate Vision

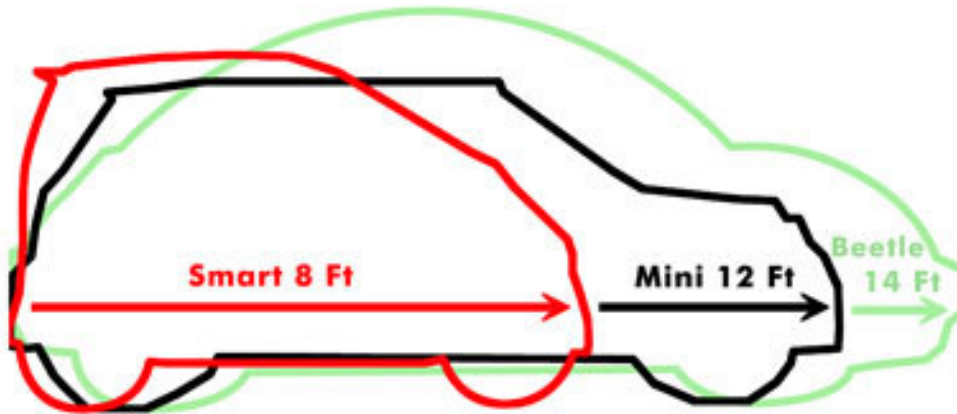
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- **Concept of “personal mobility”**
    - **Small size for in town trips with few passengers**
    - **Partnerships with public transportation (train, air, bus) for rentals**
    - **Accommodation for longer trips, or trips with more passengers**
    - **Concept of joint ownership**
-



# How small is smart?



How Small is Smart?



- 6ft shorter and 1ft. narrower than the new Volkswagen Beetle
- Three can fit in a single parallel parking slot when parked nose to the curb



# smart Corporate Vision



- **Environmentally Friendly**
  - Molded plastic panels don't require painting, eliminating the production of paint fume pollution
  - Powder coated steel frame eliminates the use of solvents and wastewater commonly used in steel finishing
  - Most of the car parts are recyclable
  - Original vision of electric or hybrid engine



# smart Corporate Vision



**smart is chic!**



**For about \$750 body panels can be changed  
for another color in about an hour!**



# smart Production



- Production facility located in Hambach, France is called Smartville
- Smartville incorporates “green” philosophy
  - Ample windows to allow use of natural light
  - Rainwater is collected and used in steel tempering process
  - Runoff from the plant is captured and filtered to drinking water quality
  - Scrap plastic panels are recycled and used in non-visible parts



# Smartville Concept



- **smart-Plus production model**

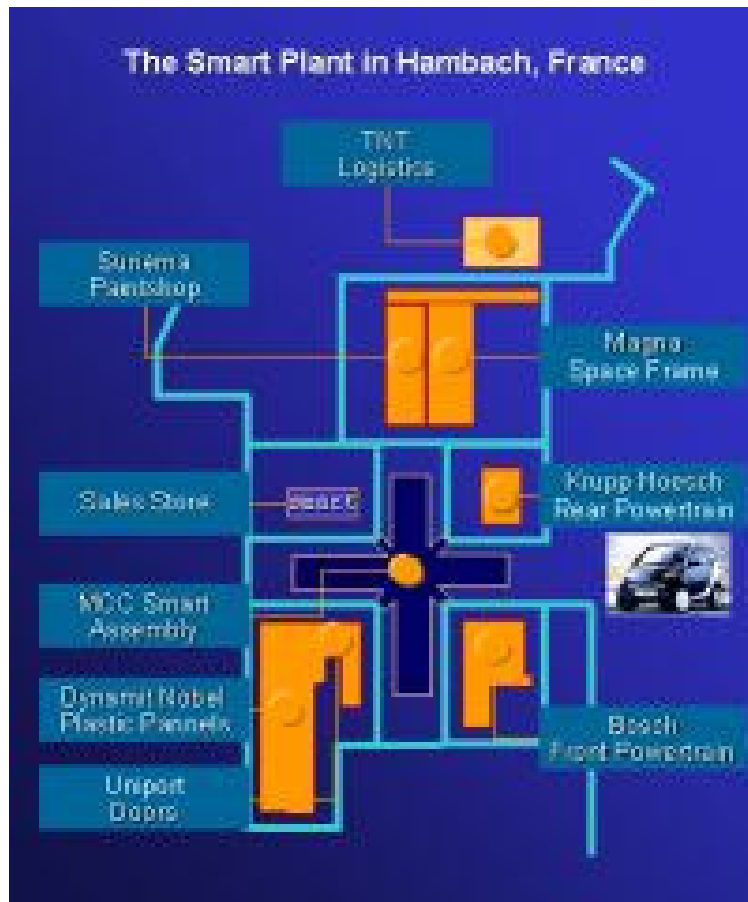


- Largest suppliers are co-located on site and are sole source suppliers
- On-site suppliers allows smart to maintain an inventory of almost zero
- Part of the capital investment for the plant is covered by the suppliers
- Pay on build contracts





# Production Method



- Modules are provided by on-site suppliers directly to the assembly line
- Modules moved by conveyor belt to delivery doors on the assembly line
- No more than 15 meters between delivery door and assembly line
- A total of 4.5 hours needed to assemble a complete smart





# Agenda

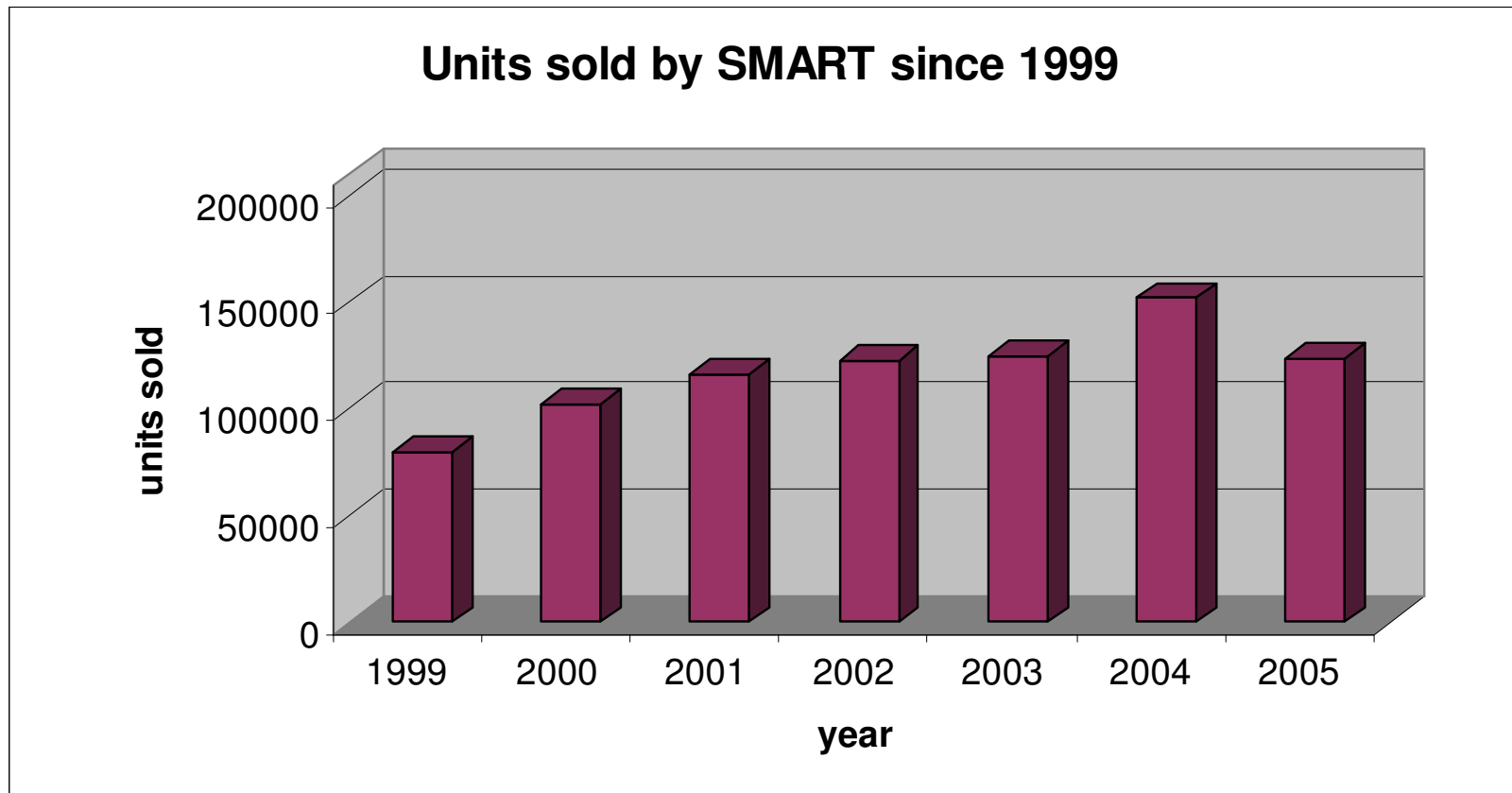
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# Is smart a success?

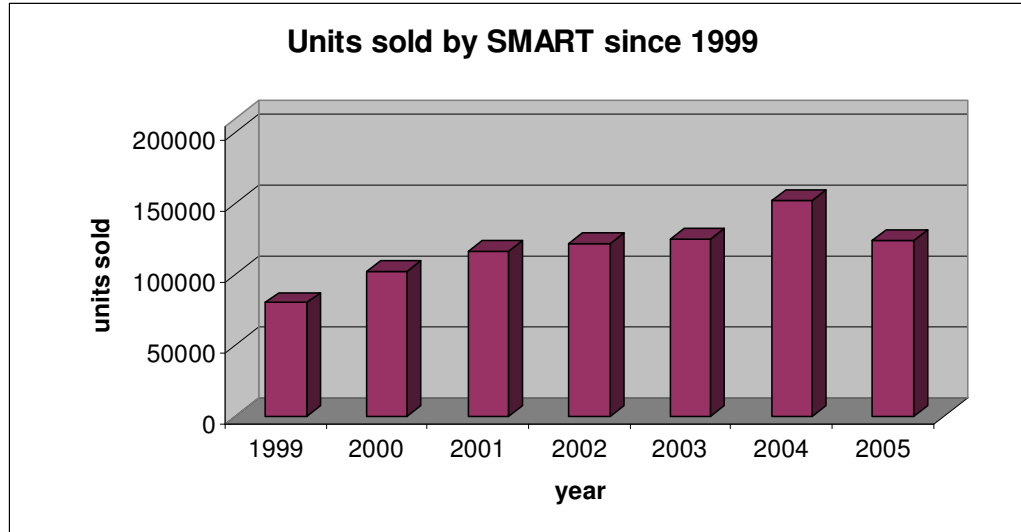


- Most important indicator: units sold





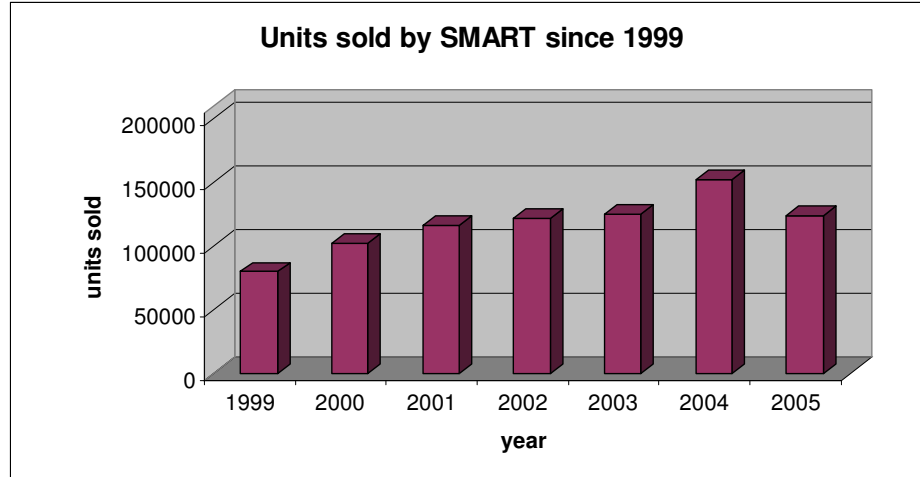
# Is smart a success?





- The plant in Hambach, France, has a capacity of 200,000 units per year
- That capacity and the expectations were never reached



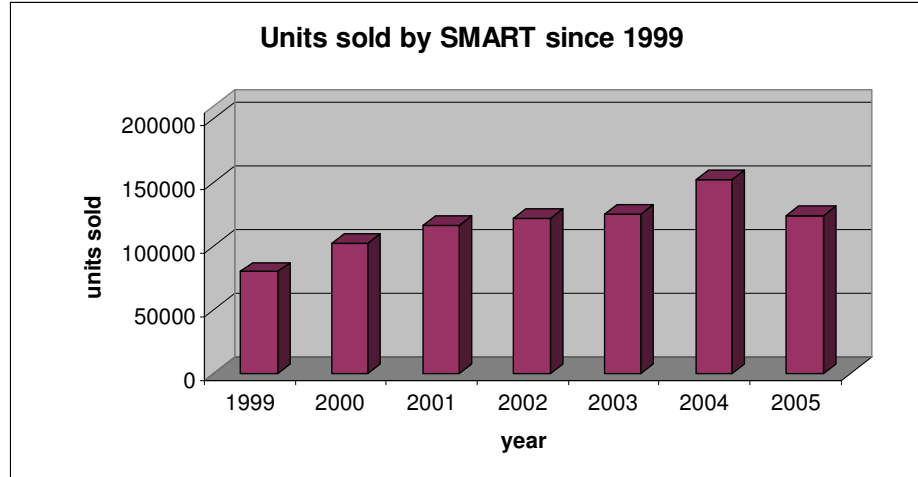
# Is smart a success?



- Smart Roadster was introduced in April 2003
- Smart Forfour was introduced in April 2004
- In 2005 the Mercedes Car Group reacted to smart's performance with a € 311 million realignment plan
- The Roadster / Forfour will not be built anymore



# Is smart a success?



- smart's performance had a strong negative impact on the operational profit of the Mercedes Car Group
- 2004's operational profit of € 1,666 million turned into a loss of € 505 million in 2005
- In 2006 smart is still struggling, while the rest of the Mercedes Car Group is very successful



# Is smart a success?



**smart**  
open your mind.





# Is smart a success?



- Part of the MCG



- Product for the small car market
- Plant in France has a capacity of 200,000 units/year

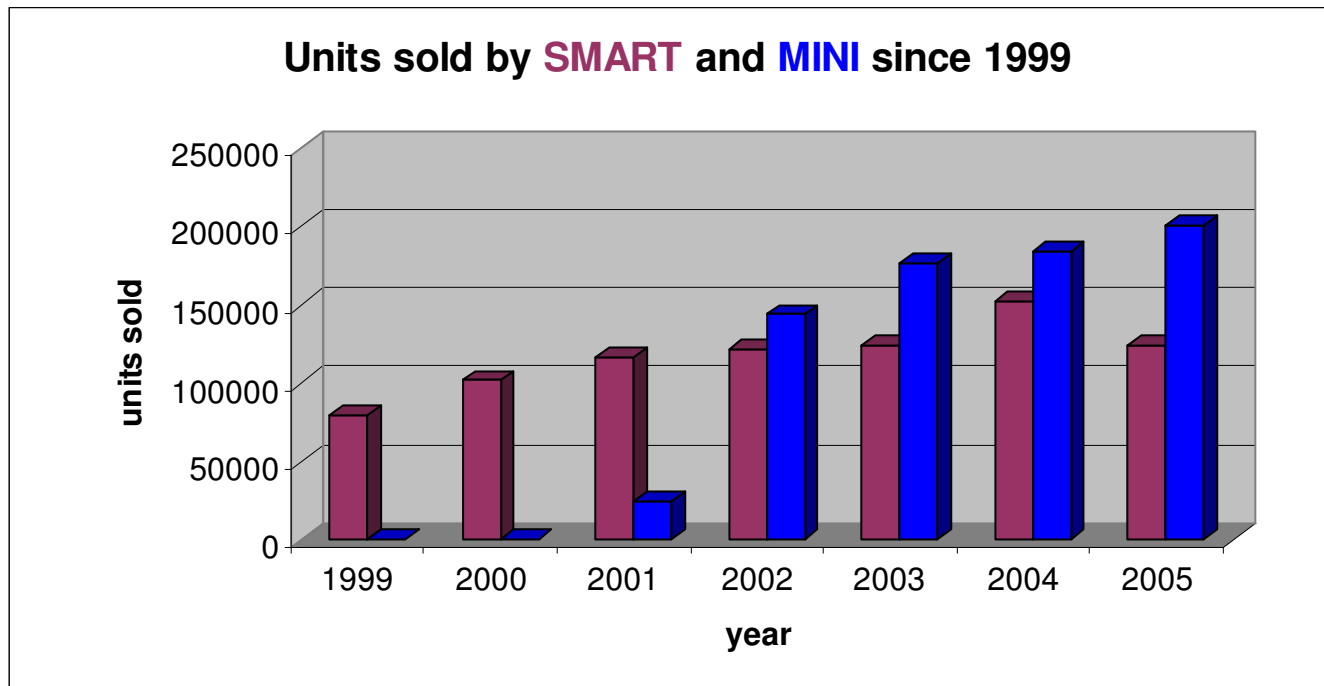


- Part of the BMW Group 
- Product for the small car market
- Plants in the UK have a capacity of 200,000 units/year





# Is smart a success?



- Mini has reached its capacity and is planning an expansion to 240,000 units/year



# Is smart a success?



- Öko-Trend ranked the smart fortwo / fortwo convertible as one of the environmentally most useful cars in Germany since 2000 and there are still two smart products in the TOP 5 today.
- The Green Vehicle Guide in Australia gave a 5-star-ranking to four vehicles in 2004. Three of them were smart products.



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# CORE Program



- February 2005, the new COst-REduction program named “**CORE**” was launched by Mercedes Car Group (MCG)
  - strengthen their competitiveness in terms of efficiency, cost and quality
  - improved the entire value chain in seven different task areas
  - smart car is the one significant area of this program




# CORE

## Seven task areas



### CORE PROJECT SETUP & RESPONSIBILITIES

					
Schmücke	R&D	Sourcing	Production	Marketing/ After-Sales	Administration
Dr. Weber	Projects / Modules / Architecture				
Koch	Fixed Costs, Net Assets				
Schmücke	Efficiency Production				
Schmücke	Material Costs				
Dr. Maier				Revenue Offensive	
Schmücke	Quality / Warranty				
Walker	smart				

Continued Execution under the leadership of Executive Team MCG



# CORE Program



- To achieve a return on sales of 7% by 2007
- First phase:
  - Implemented the measures designed to achieve a short-term improvement in earnings
  - examined all of their current projects
  - terminated projects that had no potential to make any profit
  - smart roadster and smart SUV was terminated



# CORE Program



## ■ Second phase:

- developed, produced and sell the first-class products of the highest quality under competitive conditions
- The main lever of SMART car for this CORE program is **smart car turnaround**
  - general restructuring,
  - reduction of fix cost budgets on R&D, production & purchasing, marketing & sales, overhead& IT





# CORE: Structure measure



Work module	Main levers	# measures
<b>WM1 - Projects</b>	<ul style="list-style-type: none"> <li>• Review of new vehicle / powertrain projects, model years and freshenings</li> <li>• Reduction of product complexity and development costs (internal and supplier)</li> <li>• Optimization of plant/structure and sales projects</li> </ul>	~ 250
<b>WM2 – Fixed Costs , Net Assets</b>	<ul style="list-style-type: none"> <li>• Fixed costs optimization &amp; net asset reduction</li> <li>• General Quick wins (Expenses for travel, consulting, training, company cars, ...)</li> <li>• Optimization of processes and overhead costs (e.g. HR, QM, F&amp;C, Strategy, MDS, ...)</li> </ul>	~ 1.150
<b>WM3 – Efficiency Production</b>	<ul style="list-style-type: none"> <li>• Plant productivity worldwide (reinforced CIP, reduction of non-tact related activities, shift model optimization)</li> <li>• Personnel cost (avoidance of extern. recruitment and overtime, flexibility increase, ...)</li> </ul>	~ 1.450
<b>WM4 – Material Costs</b>	<ul style="list-style-type: none"> <li>• Technical efficiency (standardization, specs, substitution, ...)</li> <li>• Commercial efficiency (global sourcing, make or buy, ...)</li> <li>• Freights / duties (processes, standardization, centralization, ...)</li> </ul>	~ 9.650
<b>WM5 – Revenue Offensive</b>	<ul style="list-style-type: none"> <li>• Volume, mix</li> <li>• Prices, discounts</li> <li>• Patents, LA2/LA3</li> </ul>	~ 300
<b>WM6 – Quality / Warranty</b>	<ul style="list-style-type: none"> <li>• Reduction of fault rate</li> <li>• Reduction of fault elimination times</li> <li>• Reduction of W&amp;G costs</li> </ul>	~ 10
<b>WM7 – smart</b>	<ul style="list-style-type: none"> <li>• smart turnaround: general restructuring, reduction of fix cost budgets on research &amp; development, production &amp; purchasing, marketing &amp; sales, overhead &amp; IT</li> </ul>	~ 400



# CORE: Result



- The most comprehensive and important mobilization program of year 2005
- Enhanced MCG's efficiency in terms of cost, efficiency and performance
- Gained a significant improvement in profitability as the year progressed
- However, an operating loss of €505 million for 2005
- Caused by the special charges of €1.1 billion on the realignment of the smart business model



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# "smart, future"



## New Business Plan for smart

(March 31, 2005)

**Aim:** To put the small-car brand onto a financially sound basis, with the goal of breaking even in 2007



# New Business Model



## New Business Plan:

- The clear focus on the smart fortwo
- The intention to cancel production of the smart forfour
- The manifestation of smart as a long-term and important part of DaimlerChrysler's product portfolio
- Workforce reduction
- The complete integration of smart into the Mercedes organization



# Future plans



- Follow strictly the business model introduced
- Introduction of the car to the U.S. market in 2008\*
- A brand new version of the car launched in April 2007 (fulfilling the requirements for the U.S. market)
- Engines of smart produced by partner Mitsubishi Motors



# Future plans



- Integration of the key tasks in development, sales, procurement, after sales and service into Mercedes-Benz
- Presence in movies, museums for a better image







# Future plans

- Promote the smart brand through targets which have a common respect among people  
“Fire Department of the City of Detroit was given a smart fortwo in 2005 as a part of this promotion”



- R&D going on in alternative powertrain such as electric, hybrid or compressed natural gas



# US Market Entry



- 37th market for smart
- entry in 2008
- distribution through UnitedAuto Group
- DaimlerChrysler hopes to sell 20,000 smarts a year in the States
- sales mostly in urban centers along the East and West coasts (New York, San Francisco and Seattle)
- smartusa will be occupied with "hard shell" tridion safety cell and ESP



# US Market Entry Drawbacks



**Too small for U.S.?**





# US Market Entry Drawbacks



## smart

- may not fit on roads in the U.S. , dominated by large cars
- is not designed for the needs of American consumers
  - tend to travel longer distances than Europeans
  - buy more items in larger packages
- price could be too high
- concerns about the safety of this micro-car
- the concept will be a decade old and outdated since it was first introduced in 1998
- image problem (compared to Mini Cooper and Beetle)



# US Market Entry Chances and Recommendations



- Overall environment- high gasoline prices, global warming concerns, and waning interest in sport-utility vehicles
- must convince the Americans that this car is worth to own
- more attention should be given on the future adaptations of alternative powertrain for smart
- promote smart's unique and stylish appearance (increasing emphasis on design )
- car could be popular for light errand running for small shops and businesses



# US Market Entry Chances and Recommendations



- make use of Mercedes-Benz's name and engineering legitimacy
- emphasize that Mercedes Car Group is behind this project



Mercedes-Benz





# Discussion

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**Do you think that smart will succeed  
in the U.S. or not ?**

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# Conclusion

- Our team think that ...
  - “smart could be successful in the U.S. Market” if
    - It is promoted in the big cities (NY, Seattle, San Francisco)
    - It concentrates more on alternative powertrain
- The car's possible success in the U.S. market could contribute to the overall success of the company. So “2008, will be important for the future of the car.



# Team 4



Thank you 😊