Daimler 2020
Challenges to HP NonStop Server Infrastructure

Connect Germany and GTUG Conference 2012, Dresden
Agenda

1. Daimler AG Facts & Figures
2. Mercedes-Benz Cars (MBC)
3. Daimler and HP NonStop Server
4. Daimler's Strategy 2020 – Focus on MBC, Impact to IT-Management
5. Challenges to NonStop Server Infrastructure
Daimler consists of five divisions

<table>
<thead>
<tr>
<th>Division</th>
<th>Revenues</th>
<th>Employees</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mercedes-Benz Cars</td>
<td>€ 57.4 bn</td>
<td>99,091</td>
</tr>
<tr>
<td>Daimler Trucks</td>
<td>€ 28.8 bn</td>
<td>77,295</td>
</tr>
<tr>
<td>Mercedes-Benz Vans</td>
<td>€ 9.2 bn</td>
<td>14,889</td>
</tr>
<tr>
<td>Daimler Buses</td>
<td>€ 4.4 bn</td>
<td>17,495</td>
</tr>
<tr>
<td>Daimler Financial Services</td>
<td>€ 12.1 bn</td>
<td>7,065</td>
</tr>
</tbody>
</table>

Note: 2011: Revenue Group € 106.5 bn; Employees: 271,370; sales organization 49,699, Corporate/ Others 5,836
The Board of Management of Daimler AG.

Dieter Zetsche  
Chairman of the Board of Management/ 
Mercedes-Benz Cars

Wolfgang Bernhard  
Manufacturing and Procurement  
Mercedes-Benz Cars, 
Mercedes-Benz Vans

Christine Hohmann-Dennhardt  
Integrity and Legal Affairs

Wilfried Porth  
Human Resources & 
Labor Relations Director

Andreas Renschler  
Daimler Trucks

Bodo Uebber  
Finance & Controlling/ 
Daimler Financial Services

Thomas Weber  
Group Research & 
Mercedes-Benz Cars 
Development
Daimler facts & figures 2011

<table>
<thead>
<tr>
<th>Key data</th>
<th>Shareholder Structure</th>
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</thead>
<tbody>
<tr>
<td>Worldwide vehicle sales: 2.1 m u</td>
<td>Aabar Investments¹) 3.1%</td>
</tr>
<tr>
<td>Revenues: 106.5 bn €</td>
<td>Kuwait 6.9%</td>
</tr>
<tr>
<td>EBIT: 8.8 bn €</td>
<td>Renault/Nissan²) 3.1%</td>
</tr>
<tr>
<td>Employees: 271,370</td>
<td>Institut. Investors 66.5%</td>
</tr>
<tr>
<td>Market capitalization (year end): 36.2 bn €</td>
<td>Private Investors 20.4%</td>
</tr>
</tbody>
</table>

Revenue by division:
- Daimler Financial Services: 11%
- Daimler Buses: 4%
- Mercedes-Benz Vans: 8%
- Daimler Trucks: 25%
- Mercedes-Benz Cars: 52%

Revenue development:
- 2009: 78.9 bn €
- 2010: 97.8 bn €
- 2011: 106.5 bn €

Revenue by region:
- Western Europe: 39%
- Asia: 21.3%
- NAFTA: 24.4%
- RoW: 17.3%

¹) 9.04% together with shares lent to third parties in connection with financing transactions for which Aabar has a right of redelivery.
²) each with 1.55%
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## Mercedes-Benz Cars facts & figures
### 1st Quarter 2012

<table>
<thead>
<tr>
<th>Overview (in m €)</th>
<th>Q1 2012</th>
<th>Q1 2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>EBIT:</td>
<td>1,252</td>
<td>1,288</td>
</tr>
<tr>
<td>Revenues:</td>
<td>14,937</td>
<td>13,860</td>
</tr>
<tr>
<td>Unit Sales (units):</td>
<td>338,303</td>
<td>310,717</td>
</tr>
<tr>
<td>Production (units):</td>
<td>364,009</td>
<td>341,708</td>
</tr>
</tbody>
</table>
Product portfolio of Mercedes-Benz Cars

A-Class
B-Class

S-Class
CL

C-Class
C-Class Coupé
C-Class T-Modell

E-Class
E-Class Coupé
E-Class Cabrio
E-Class T-Modell

S-Class

SL
SLK
SLS

G-Class
GL
GLK

CLS

M-Class
R-Class
A star is born...

Stamping facility

Several tons of press force are needed to create a striking design idiom. To make that possible, lots of design sensitivity is needed as well.

Body shop

A Mercedes-Benz car is held together by many thousands of welding points. And by the passion of our employees.

Paint shop

Several layers are required to make the vehicle’s skin perfect. For a lasting, splendid appearance.

Dr. Heinz-Michael Nitzschke, Daimler AG
Each Mercedes-Benz is unique. After all, we build our vehicles exactly in accordance with our customers’ wishes.

A Mercedes-Benz attracts attention everywhere...but only after the vehicle has been subjected to a critical inspection.

Here, new Mercedes-Benz cars await their proud owners, marking the beginning of a lasting friendship.
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NonStop Servers at Daimler – a success story over 26 years

- 3 applications (production control, production logistics, car delivery)
  - Sindelfingen, Stuttgart
- First PLUS Modules
  - Sindelfingen, Bremen
- PLUS extension
- PLUS at Rastatt
- PLUS Mobile devices
- PLUS at East London
- PLUS at Tuscaloosa
- PLUS at Beijing
- PLUS at Kecskemét
- PLUS at Tuscaloosa
- PLUS at Hambach
- PLUS at Fuzhou
- PLUS at East London
- PLUS at Tuscaloosa
- PLUS at Beijing
- PLUS at Kecskemét

**Timeline:**
- 1986: VLX/Cyclone
- 1992: S-Series
- 1999: NS Integrity
- 2007: NS Blade
- 2014: *Produktions-Leit- und Steuerungssystem*

Dr. Heinz-Michael Nitzschke, Daimler AG
PLUS, a short introduction

• **PLUS** is a German abbreviation for „Produktions- Leit- und Steuerungssystem“ which means *production control system*.
• **PLUS** is the *standard* IT system for production control from body shop start to final OK.
• **PLUS** is an “*inhouse* product” and property of the Daimler AG.
• **PLUS** has been in use since 1989.
• **PLUS** is *continuously* being *enhanced* (technically and functionally).
• **PLUS** is available in German, English, French, Hungarian and Chinese language.
PLUS supplies all relevant order data (e.g. part numbers, codes, Baumuster) to all kind of shop floor devices (e.g. programmable logic controls (PLCs), torque tools, robots)

PLUS provides in an optimal way all order based information (e.g. part numbers, codes, Baumuster, etc.) to the shop floor team members (e.g. broadcast sheets, job cards, pick lists, line side PCs, PDAs, etc.)

PLUS provides all relevant features to support the Inline Quality Management (e.g. vehicle inspection, fault capturing, rework control).

PLUS ensures quality process reliability (torques, filling, flush and gap, etc.) including coincidence checks and capturing of as built data (traceability data)

PLUS controls selectivity banks / vehicle buffers

…and much more…
PLUS can be customized and sized based on the needs of the business side and the planned production volume.

- **PLUS** is based on **modules** that can be easily combined and supports all MBC standard processes and interfaces.

- **PLUS** is highly **configurable** to support the plants production processes (around 325 dialogs, around 95 mobile dialogs, around 2,200 server programs).

- **PLUS** is highly **available** (hard- and software)

- **PLUS** is **sizeable** to accommodate the required production volume
HP NonStop PLUS server overall landscape

- Hambach: NS1204, NS1204 DR (2005)
- Kecskemét: NS1206, NS1206 DR (2011)
- Sindelfingen: NS16210, NS16204 + 6 DR (2003)
- Bremen: NS16206, NS16206 (2005)
- Rastatt: NS16206 (2005)
- Fuzhou: NS1204 (2009)

Dr. Heinz-Michael Nitzschke, Daimler AG
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## Clear aspiration for all our businesses

<table>
<thead>
<tr>
<th>Business</th>
<th>Aspiration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mercedes-Benz Cars</td>
<td>“Most successful premium manufacturer”</td>
</tr>
<tr>
<td>Daimler Trucks</td>
<td>“No 1 in the global truck business”</td>
</tr>
<tr>
<td>Daimler Buses</td>
<td>“No 1 in the global bus business”</td>
</tr>
<tr>
<td>Mercedes-Benz Vans</td>
<td>“Most successful van manufacturer”</td>
</tr>
<tr>
<td>Daimler Financial Services</td>
<td>“Best financial services provider”</td>
</tr>
</tbody>
</table>

Dr. Heinz-Michael Nitzschke, Daimler AG
Ambitious growth targets for all divisions

**Mercedes-Benz Cars**

- In million units*

<table>
<thead>
<tr>
<th>Year</th>
<th>2011</th>
<th>2015 Target</th>
<th>2020 Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales</td>
<td>1.3</td>
<td>&gt;1.6</td>
<td>Best sales **</td>
</tr>
</tbody>
</table>

* Without smart **Within automotive premium segment; schematic representation

**Daimler Trucks**

- In thousands of units

<table>
<thead>
<tr>
<th>Year</th>
<th>2011</th>
<th>2015 Target</th>
<th>2020 Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales</td>
<td>426</td>
<td>&gt;500</td>
<td>&gt;700</td>
</tr>
</tbody>
</table>

**Mercedes-Benz Vans**

- In thousands of units

<table>
<thead>
<tr>
<th>Year</th>
<th>2011</th>
<th>2015 Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales</td>
<td>264</td>
<td>&gt;400</td>
</tr>
</tbody>
</table>

**Daimler Buses**

- In thousands of units

<table>
<thead>
<tr>
<th>Year</th>
<th>2011</th>
<th>2015 Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales</td>
<td>39.7</td>
<td>42.0</td>
</tr>
</tbody>
</table>

**Daimler Financial Services**

- Contract volume in billions of euros

<table>
<thead>
<tr>
<th>Year</th>
<th>2011</th>
<th>2015 Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales</td>
<td>71.7</td>
<td></td>
</tr>
</tbody>
</table>

Growth in line with industrial business

Dr. Heinz-Michael Nitzschke, Daimler AG
Adding at least ten new Mercedes-Benz models to the PV product portfolio by 2015
With vehicle architecture and modular strategy, we are faster, more flexible and more cost efficient.

Example: Mercedes-Benz Cars
China – Third most important market for Mercedes-Benz Cars

Mercedes-Benz Cars retail sales incl. smart, in ‘000 units

<table>
<thead>
<tr>
<th>Year</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>…</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales</td>
<td>18</td>
<td>27</td>
<td>39</td>
<td>69</td>
<td>147</td>
<td>199</td>
<td></td>
<td>&gt; 300</td>
</tr>
</tbody>
</table>

MBC retail sales ranking by markets

2008 2009 2010 2011

1 3 3 7

198,520
Another record year with sales of 198,520 units in China

35
Fast growing premium brand in China with a 35% YoY growth

1
S-Class & R-Class rank No.1 in worldwide MBC ranking

Dr. Heinz-Michael Nitzschke, Daimler AG
Key to success in China is our comprehensive commitment

January 2011
Open MB Arena

February 2011
BDNT Business License

May 2011
FBAC R&D Center

July 2011
BBAC Engine Plant

July 2011
MB Design Studio

August 2011
Sprinter SoP at FBAC

September 2011
BFDA MofCom Approval

December 2011
GLK Job# 1 at BBAC

Dr. Heinz-Michael Nitzschke, Daimler AG
Major influences from MBC 2020 to IT Management

- New products
- MBC challenges
- BRIC + growth & footprint
- New customers & Digital Life
- Pressure of costs & volatility

Dr. Heinz-Michael Nitzschke, Daimler AG
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Our fundament for future requirements – What we trust in

- Standardized system and application environment
  - cloned systems, rapid launch of new systems
- Harmonized processes, tools and services
  - service quality, seamless service extensions
- Well-skilled, highly motivated people
  - support quality, international experience
- Proven global operational model (Cooperative Operation Model)
  - service quality (SLA), clear responsibilities, predictable costs
- Reliable, scalable and highly available NonStop Server platform
  - expandability, capacity planning, release management
Daimler's standardized NonStop Server landscape end of 2012

<table>
<thead>
<tr>
<th>Location</th>
<th>Model</th>
<th>Location</th>
<th>Model</th>
<th>Location</th>
<th>Model</th>
<th>Location</th>
<th>Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sindelfingen</td>
<td>NS16210</td>
<td>Bremen</td>
<td>NS16206</td>
<td>Rastatt</td>
<td>NS16206</td>
<td>Integration/DR</td>
<td>NS16204+6</td>
</tr>
<tr>
<td></td>
<td>NS1004</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Tuscaloosa</td>
<td>NS1206 + DR</td>
<td>Hambach</td>
<td>NS1204 + DR</td>
<td>East London</td>
<td>NS1204</td>
<td>Beijing</td>
<td>NS1208 + DR</td>
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<td></td>
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<td></td>
<td></td>
<td>Fuzhou</td>
<td>NS1204</td>
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<td></td>
<td></td>
<td></td>
<td>Kecskemét</td>
<td>NS1206 + DR</td>
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Dr. Heinz-Michael Nitzschke, Daimler AG
Central teams support national and international plants in operating critical services

Dr. Heinz-Michael Nitzschke, Daimler AG
Service groups in the Cooperative Operating Model

1st Level:
- User Help Desk
- Local User Help Desk (Frontdesk)
- Application Help Desk

2nd Level:
- Desktop service
- Firewall Support
- Network Support
- Local Control Center
- Central Control Center (Backdesk)

3rd Level:
- System Technical Support
- Change Management
- Application Support
- Change & Release Management
- System Technical Support
- Application Development

4th Level:
- HW/SW Support Vendor
- Network Support
- Central Services
- Regional Data Center
- IT Security
Enabling frontdesk/local UHD by standardized tools (example printer support)
Enabling frontdesk/local UHD by standardized tools (example printer support)
Enabling frontdesk/local UHD by standardized tools (example printer support)
Challenges for the future – What we worry about

- Strengthen the ability to follow the business requirements (scalability, flexibility, volatility, changing markets)
  - lifecycle planning, project management, proactivity
- Provide an adequate solution portfolio
  - hardware strategy, system categories, system configuration
- Provide an adequate DR-Solution
  - easy to handle, minimal operational effort, RPO/ RTO requirements
- Reduce cost of ownership
  - one-time investment, running costs, licence fees, maintenance fees
- Investment protection
  - safe product roadmap, confidence in HP’s announcements
The NonStop Expert Team has finalized the evaluation of actual NonStop Blade technology in August 2011.

**Decisions**

- Wait and see further development of processor market (TNS/ R → MIPS → ITANIUM → ?)
- Complete migration from S-Series to NS Integrity systems in 2012, no migration to NonStop Blade Server today
- Provide adequate testing environment for NonStop Blade until 2015 latest
- Migration of NonStop Integrity based on a standardized, adequate Blade configuration for all plants from 2015 at the earliest (until 2018)
Performance of HP’s NonStop Server portfolio as is

Range of performance NonStop systems

low end midrange high end
Lifecycle planning example – facts & figures as is

264 PLUS clients
220 Printers
103 PDAs, Mobile devices
618 Torques, PLCs, Bolts, Filling stations
~175 Transactions/s
~12,500 Transactions/car

PLUS KPS

HP NonStop NS1206

Dr. Heinz-Michael Nitzschke, Daimler AG
Estimation of future system utilization

Chronology Av.- und Max-Busy \T13824

Planned Volume

Estimated Utilization

SoP C-Class

PLUS Enhancements

3rd shift

End of Sale 1/ 2013

End of Support 01/ 2018

Dr. Heinz-Michael Nitzschke, Daimler AG
Future CPU utilization scenarios depending on PLUS usage
HP NonStop Integrity with remote mirrored disks - fully redundant “Daimler Standard” DR-solution

DR system running - no loss of data

Data Center A

Max Distance 5 km

on Campus

Fiberchannel

Data Center B

Remote Mirror Disks

Primary Disks

Remote Mirror Disks

Primary Disks
Remote Mirroring is not available for NonStop Blade Servers

A new DR-Solution has to be designed. Only two alternatives are provided: using P9500-SAN or RDF.

Necessary activities:

- Technical evaluation (concerning RDF once again)
- Check and update plant requirements
- Use experience of some customers
- Consider operational efforts and risks
- Consider costs
- Provide proposal for management decision
We work together with HP to provide the PLUS-infrastructure which meets the future requirements of MBC

Our demands:

- long term perspective for the NonStop platform
- midrange-systems located at each plant
- appropriate DR-solution for each plant
- standardized configurations based on unique revision levels in all components over lifecycle of 5 to 7 years
- NonStop infrastructure which is cost-efficient in terms of hardware, software licences, maintenance, operations
- effective support and services worldwide

Dr. Heinz-Michael Nitzschke, Daimler AG
Thank you for your attention!