Our values

Organization and key figures

Division – Drive Technologies

Business Units

Verticals

Enhanced productivity
   Totally Integrated Automation

Our service offering

Environmental portfolio
We stand for our values

**Responsible**
We are committed to ethical and responsible action.

**Excellent**
We achieve high performance and excellent results.

**Innovative**
We are innovative to create sustainable value.
Compliance is no program – It’s the way how to conduct business in a responsible manner

Compliance remains a key factor

- Lack of Compliance is still considered a business risk.
- Compliance awareness must become a natural and integral part of each business decision.
- Integrity means that all our dealings are based on moral principles and comply with the Siemens standards and values.

We only accept clean business

Change of Compliance culture from process- to value-oriented behavior
Four Sectors cover the global trends

Industry:
- Industry Automation
- Drive Technologies
- Customer Services
- Metals Technologies

Infrastructure & Cities:
- Rail Systems
- Mobility and Logistics
- Low and Medium Voltage
- Smart Grid
- Building Technologies

Energy:
- Fossil Power Generation
- Wind Power
- Solar & Hydro
- Power Transmission
- Oil & Gas
- Energy Service

Healthcare:
- Imaging & Therapy
- Clinical Products
- Diagnostics
- Customer Solutions

1) Sector-led Business Unit, as it is only responsible for the building of large turnkey plants.
2) IPO planned
The new Industry Sector with a strong focus on industrial customers

Industry Sector

Industry Automation
- Industrial Automation Systems
- Control C. and Systems E.
- Sensors and Communication
- Siemens PLM Software
- Water Technologies
  - #1 Programmable control systems
  - #1 Industrial switchgear
  - #2 Industrial software

Drive Technologies
- Large Drives
- Mechanical Drives
- Motion Control Systems
- Inside e-Car
  - #1 High-power AC drives
  - #1 Wind gear boxes
  - #2 CNC controllers

Customer Services
- Product Lifecycle Services
- Value Services
  - Remote maintenance
  - Energy efficiency consulting
  - Modernization

Metals Technologies
- Ironmaking
- Steel Plants & Mini Mills
- Casting & Rolling
- Electrics / Automation
- Metallurgical Services
  - #1 Continuous casting plants
  - #2 Steel mills
  - #2 Roller mills

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Organization of the Industry Sector – Three Divisions and a Sector-led Business Unit

<table>
<thead>
<tr>
<th>Industry Sector</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CEO:</strong> Prof. Dr. Siegfried Russwurm</td>
<td><strong>CFO:</strong> Dr. Ralf P. Thomas</td>
</tr>
</tbody>
</table>

### Key Support Functions

<table>
<thead>
<tr>
<th>Industry Automation</th>
<th>Drive Technologies</th>
<th>Customer Services</th>
<th>Metals Technologies 1)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CEO</strong></td>
<td><strong>CEO</strong></td>
<td><strong>CEO</strong></td>
<td><strong>CEO</strong></td>
</tr>
<tr>
<td>Anton S. Huber</td>
<td>Ralf-Michael Franke</td>
<td>Dirk Hoke</td>
<td>Werner Auer</td>
</tr>
<tr>
<td>CFO</td>
<td>CFO</td>
<td>CFO</td>
<td>CFO</td>
</tr>
<tr>
<td>Miguel-Angel Lopez</td>
<td>Thomas Rathmann</td>
<td>Peter Horn</td>
<td>Martin Krauss</td>
</tr>
</tbody>
</table>

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1) Sector-led Business Unit
„We have to follow our proven and tested strategy consistently. But we also have to generate new and convincing customer value."

Ralf-Michael Franke
CEO Drive Technologies Division
Drive integration and innovation
Three dimensions of integration

Horizontal Integration

Functional (or physical) energy efficient integration of drive technology systems from gear and motor up to converters, along the power flow.

Vertical Integration

Integration of systems from MES IT and control up to the drives system, along the information flow.

Life Cycle Integration

Supplementing the drive train with service and products/software that support their engineering, commissioning and use along the life cycle.

Customer benefit

- Increased productivity
- Enhanced reliability
- Increased energy efficiency

Customer benefit

- Increased productivity
- Enhanced reliability
- Increased energy efficiency

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## Offerings along the integrated drive train
### Drive Technologies

<table>
<thead>
<tr>
<th>Large Drives</th>
<th>Motion Control</th>
<th>Mechanical Drives</th>
<th>Inside Electric Car</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Products</td>
<td>• Machine Tools</td>
<td>• Standard Gear units, Geared motors</td>
<td>• Inside e-Car Inverters and motors</td>
</tr>
<tr>
<td>• Traction</td>
<td>• Production Machines</td>
<td>• Geared motors, Drive applications</td>
<td></td>
</tr>
<tr>
<td>• Sustainable Power Conversion</td>
<td>• Cranes</td>
<td>• Rail, Turbo</td>
<td></td>
</tr>
<tr>
<td>• Industrial Applications</td>
<td>• General Motion Control</td>
<td>• Wind</td>
<td></td>
</tr>
<tr>
<td>• Minerals</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Pulp &amp; Paper</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Marines</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Facts & Figures of Fiscal Year 2012 – Drive Technologies

~90,000 customers
~50,000 employees*
45 manufacturing locations
310 patent applications
584 invention reports

* incl. Customer Services

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Slide 14
Drive Technologies produces worldwide

Creating added value at 45 production sites worldwide

Manufacturing locations (incl. Business Unit/office)
Global presence of DT as a major success factor

**DT global footprint**
- Covering > 99% of emerging economies market with dedicated sales offices
- Increased momentum since 2005
- Increasing regional penetration within emerging markets

**Localization strategy**
1) P&L = Full business responsibility; PLM = Product lifecycle management; SCM = Supply chain management; CRM = Customer relationship management

**Siemens is perceived as a local player**
Drive Technologies – Productivity, reliability and energy efficiency for the entire drive train

<table>
<thead>
<tr>
<th>Industry Sector – Drive Technologies Division</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Large Drives (LD)</strong></td>
</tr>
<tr>
<td><img src="image1" alt="Large Drives" /></td>
</tr>
<tr>
<td>• Industry-specific solutions: Mining, Cement, Shipbuilding, Oil&amp;Gas, Pulp&amp; Paper, Marine</td>
</tr>
<tr>
<td>• Industrial, traction and special drives</td>
</tr>
<tr>
<td>• DC motors, converters and excitation systems</td>
</tr>
<tr>
<td>• Motors and drive systems</td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

#1 High-power AC drives – #1 Wind gear boxes – #2 CNC
Drive Technologies provides productivity, quality and energy efficiency

Industry Sector – Division Drive Technologies

Current priorities in the industry

<table>
<thead>
<tr>
<th>Current priorities</th>
<th>small</th>
<th>large</th>
</tr>
</thead>
<tbody>
<tr>
<td>Energy efficiency</td>
<td>0,12 kW</td>
<td>120 MW</td>
</tr>
<tr>
<td>Productivity</td>
<td>0,12 kW</td>
<td>100 MW</td>
</tr>
<tr>
<td>Reliability</td>
<td>2,3 kNm</td>
<td>4.700 kNm</td>
</tr>
</tbody>
</table>

CNC and motion control systems

Innovative products and systems, applications and services for the entire drive train
Complete and unambiguous responsibilities for vertical markets ...

Principles for vertical market responsibility

Vertical market responsibility is

a) complete
   - includes product, system and solutions businesses
   - covers verticals strategy, sales and business model
   - addresses all customers and channels of a vertical market

b) unambiguous
   - one person with business responsibility
   - clear rules for cooperation; with transparent measurement of success
   - more than 2,100 defined "focus accounts"

... to systematically activate the individual verticals
State-of-the-art technologies and quality innovations

- Innovative products for the complete drive unit
- Combined use of drive and motion control technologies (TIA)
- High level of quality and product reliability

### Energy efficiency

**Example: Chiller plants**
- Retrofit existing chiller motor with Variable Speed Drive solution
- Results: Up to 30% energy savings, elimination of utility demand charges, reduced equipment maintenance, and extended equipment lifespan deliver over $1M in savings with <1 year Return on Investment
- There are over 100,000 chillers in the USA alone

**Example: MGM Hotel Bellagio, Las Vegas**
- Retrofits existing chiller motor with TIA solution
- Results: Up to 30% energy savings, elimination of utility demand charges, reduced equipment maintenance, and extended equipment lifespan deliver over $1M in savings with <1 year Return on Investment
- There are over 100,000 chillers in the USA alone

### Productivity

**Example: Automation for press shop**
- Hardware-based, collision-free synchronization of servo presses
- Growth in productivity: approx. 360,000 produced parts per year (+10 %) without an increase in CAPEX

### Reliability

**Example: Wind turbines**
- Fifty 2-MW offshore turbines
- Improved power delivery (from 95 % to 97 %)
- Result: More power was produced, which led to additional revenue of € 320,000 per year, while annual maintenance costs were cut by € 300,000.

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- Our values
- Organization and key figures
- Division – Drive Technologies
- Business Units
- Verticals
- Enhanced productivity
  Totally Integrated Automation
- Our service offering
- Environmental portfolio
### Drive Technologies – Productivity, reliability and energy efficiency

#### Drive Technologies

<table>
<thead>
<tr>
<th>Large Drives (LD)</th>
<th>Motion Control Systems (MC)</th>
<th>Mechanical Drives (MD)</th>
<th>Inside Electric Car (EC)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Products (P)</td>
<td>Cranes (CR)</td>
<td>Application (AP)</td>
<td></td>
</tr>
<tr>
<td>Traction Drives (TD)</td>
<td>General Motion Control (GMC)</td>
<td>Production (PROD)</td>
<td></td>
</tr>
<tr>
<td>Minerals (MN)</td>
<td>Production Machines (PMA)</td>
<td>Winery (WIND)</td>
<td></td>
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<tr>
<td>Marine &amp; Shipbuilding (MS)</td>
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<tr>
<td>Pulp &amp; Paper (P&amp;P)</td>
<td></td>
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<tr>
<td>Operation &amp; Engineering Center (OEC)</td>
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<tr>
<td>Hydrogen Solutions</td>
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</tbody>
</table>
Large Drives

- Low-voltage and high-voltage three-phase motors
- Low-voltage and medium-voltage converters for variable-speed three-phase motors
- DC drives: motors and converters
- Drive systems for special applications, e.g. ships, rolling mills, ore-crushing mills, etc.
- Drive systems for extreme and hazardous locations of use
- Drives for rail vehicles, buses and trucks
- Generators for wind power/energy

Services:
- Consulting and application engineering
- System tests, customer acceptance tests and special tests
- After-sales services
Manufacturing locations
Large Drives

- Berlin/D
- Bad Neustadt/D
- Nürnberg/D
- Erlangen/D
- Krefeld/D
- Mohelnice
- Drasov
- Frenštát/CZ
- Wien/AUT
- St. Petersburg/RUS
- Sibiu/ROM
- Subotica/CS
- Tianjin/CHN
- Changzhi/CHN
- Yizheng/CHN
- Shanghai/CHN
- Norwood/US
- Alpharetta/US
- New Kensington/US
- Guadalajara/MEX
- Bogotá/CO
- Jundiai/BRA
- Kalwa/IND
- Nashik/IND
- Karachi/PK

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Motion Control Systems

- Based on the SINUMERIK CNC system platform, the SIMOTION motion control system, the SIMOCRANE solution platform, the SINAMICS drive family and the SIMOTICS motion control motors, MC supports the machine manufacturers as solution provider with innovative services concerned with the machine lifecycle: starting with the application consulting services, mechatronic support, the realistic simulation and ending with online services and diagnostics which permit a Web-based fault management and preventive maintenance, among other things.

- The comprehensive range of drive and automation products can be deployed in almost all applications and industry sectors.

- In addition, MC provides drive products (motion control controllers, converters, motion control motors) for a wide market.
Motion Control Systems

Product spectrum:
Motion control systems and solutions for the equipment contained in production and machine tools as well as drive systems in the low and medium power range.

Core products:
- SINUMERIK machine tool control
- SIMOTION motion control systems
- SINAMICS drive systems
- SIMOTICS motors for motion control applications
Manufacturing locations
Motion Control Systems

Bad Neustadt/D
Maroldsweisach/D
Congleton/GB
Chemnitz/D
Erlangen/D
Munich/D
Beijing/CHN
Yizheng
Nanjing/CHN
Tianjin/CHN
**Product offering:**
Comprises mechanical drives for a wide range of applications for generating wind power and for powering ships, construction machines, and machines for building materials.

**Core products:**
- FLENDER couplings
- FLENDER gears
- SIMOGEAR gear motors
Manufacturing locations
Mechanical Drives

- Voerde/D
- Herne/D
- Bocholt/D
- Mussum/D
- Graffenstaden/F
- Penig/D
- Wittgensdorf/D
- Tübingen/D
- Kharagpur/IND
- Chennai/IND
- Elgin/USA
- Tianjin/CHN
We are an **automotive supplier**, everything we do focuses on our customers requirements

- **Product requirements**
  e.g. for costs, weight, packaging/form factor, mechanical dimensions/volume, integration, efficiency (in the cycle), scalability, operational performance

- **Process requirements**
  e.g. for change management, validation or product lifecycle

- We support our customers in bringing electric cars to market by supplying high quality powertrain components and systems for series production:
  - Inductive Charging
  - On-board charging
  - Inverter
  - ASM/PSM motors

- As part of Siemens Electro Mobility we leverage DT’s unrivalled industrial experience in developing and producing electric drives and offer high quality powertrain components and systems for electric cars – paving the way for sustainable mobility.
Locations – Inside Electric Car

Europe
- **Headquarter** in Erlangen, Germany
- **R&D** facilities in Bad Neustadt a. d. Saale, Chemnitz and Erlangen
- **Production** location for motors in Bad Neustadt a. d. Saale
- **Production** location for power electronics in Chemnitz

Asia
- **Regional office** in Shanghai, China
- **Production** location for motors in Yizheng
- **Production** location for power electronics t.b.d.

North America
- Regional office in US planned
- Our values
- Organization and key figures
- Division – Drive Technologies
- Business Units
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- Enhanced productivity
  Totally Integrated Automation
- Our service offering
- Environmental portfolio
Our vision for the vertical business of Drive Technologies

- Siemens Industry is the preferred partner for all customers within our vertical markets.
- We bring in our full knowledge and competence to serve each vertical customer in the best possible way to achieve his targets.
- Without compromises, we offer our customers for each of their projects what helps them most. There is only one responsible person for our full portfolio per customer.
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Totally Integrated Automation
Supporting the entire production life cycle …

… based on six system properties
Totally Integrated Automation
A successful technology

End-to-end
- Everything from a single source
- Guaranteed interoperability

Integrated
- Easy installation
- Minimal technological complexity
- Minimal life cycle costs

Open architecture
- Easy integration of third-party products and implementation of generation upgrades
TIA allows us to improve productivity - the main objective of industry
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Our service makes the difference

We support our customers in improving their competitiveness – with our global network of experts and technology-based service throughout the entire lifecycle of their plants and machines. 

Dirk Hoke, CEO Customer Services Division
Challenges in the industry

- Increased cost pressure
- Increasing energy costs
- Stricter environmental regulations
Customer Services – we associate efficiency and productivity with technology-based services

Customer Services provides a comprehensive portfolio of product, system, and application-related services throughout the entire lifecycle of machines and plants.

The Goal:
• Minimizing downtime
• Optimizing personnel deployment
• Reducing use of assets

That’s how we improve our customers’ competitiveness sustainably.
Product Lifecycle Services is responsible for all product-related services of the Industry Sector. The service spans from central and local service in the fields of online support, technical support, and on-site services all the way to repair and logistics services.

Value Services merges services into integrated and customer-oriented solutions in order to create added value for our customers’ processes. The range includes added value service from consulting and training all the way to plant management and energy management.
| Our values |
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| Totally Integrated Automation |
| Our service offering |
| Environmental portfolio |
## The environmental portfolio of Drive Technologies

<table>
<thead>
<tr>
<th>Environmental portfolio of I DT</th>
<th>Converters with energy recovery (LD)</th>
<th>ELFA hybrid drives (LD)</th>
<th>Converters with energy recovery (MC)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wind turbine gearboxes/generators (MD/LD)</td>
<td><img src="image1.png" alt="Image" /></td>
<td><img src="image2.png" alt="Image" /></td>
<td><img src="image3.png" alt="Image" /></td>
</tr>
<tr>
<td>High-efficiency motors IE2/NEMA (LD)</td>
<td><img src="image4.png" alt="Image" /></td>
<td><img src="image5.png" alt="Image" /></td>
<td><img src="image6.png" alt="Image" /></td>
</tr>
<tr>
<td>Solar converters (LD)</td>
<td><img src="image7.png" alt="Image" /></td>
<td><img src="image8.png" alt="Image" /></td>
<td><img src="image9.png" alt="Image" /></td>
</tr>
<tr>
<td>Diesel-electric drives (MC)</td>
<td><img src="image10.png" alt="Image" /></td>
<td><img src="image11.png" alt="Image" /></td>
<td><img src="image12.png" alt="Image" /></td>
</tr>
<tr>
<td>High-efficiency motors IE3 (LD)</td>
<td><img src="image13.png" alt="Image" /></td>
<td><img src="image14.png" alt="Image" /></td>
<td><img src="image15.png" alt="Image" /></td>
</tr>
<tr>
<td>Energy recovery for the paper industry (LD VSS)</td>
<td><img src="image16.png" alt="Image" /></td>
<td><img src="image17.png" alt="Image" /></td>
<td><img src="image18.png" alt="Image" /></td>
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</table>
Thank you very much for your attention!