



**SIEMENS**  
*Ingenuity for life*

# Siemens as global player Maximilian Kolbe Gymnasium

19<sup>th</sup> December 2017

Oliver Hagemann

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[siemens.com/mobility-services](https://www.siemens.com/mobility-services)

## Program



- Curriculum Vitae - Oliver Hagemann
- Siemens / Mobility / Test Center in a global world
- Global Education
- Siemens Ausbildung in Deutschland (dt)

## Curriculum Vitae

### Dipl.-Ing. (TU) Oliver Hagemann

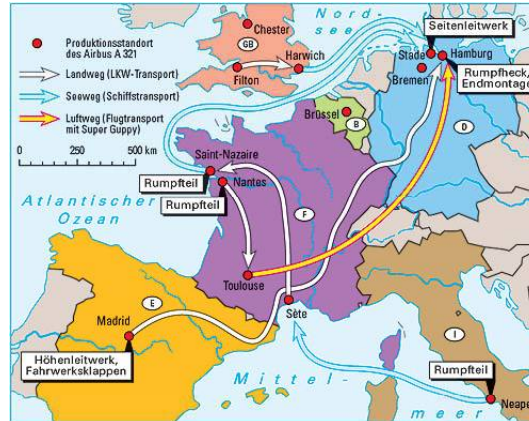
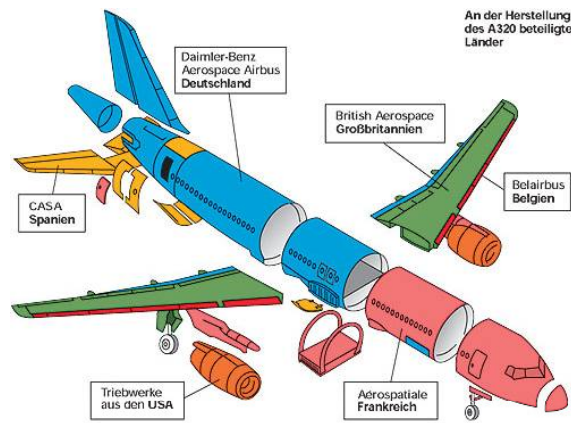
- |             |  |
|-------------|--|
| since 2014  | Siemens Mobility, Wegberg, Germany<br>Head of Test- and Validationcenter   |
| 2008 - 2014 | Siemens Energy Service, Mülheim, Germany<br>Project Director (Siemens cert.)<br>Generator Modernization and Upgrades |
| 2004 – 2008 | Siemens Mobility, Krefeld, Germany<br>Engineering Project Manager<br>Development High Speed Train for China          |
| 2000 – 2004 | Siemens Mobility, Krefeld, Germany<br>Head of Group for RAMS/LCC and Safety Case<br>Desiro UK fleet in UK            |
| 1996 – 2000 | Siemens Mobility, Erlangen, Germany<br>RAMS/LCC engineering for commuter trains in UK<br>Development of Safety Case  |
| 1989 – 1996 | Technical University of Braunschweig, Germany,<br>Mechanical Engineering, Energy and Chemical Engineering            |



# Globalization

## different cultures and work sharing society

Globalization is the increasing interaction of people, states, or countries through the growth of the international flow of money, ideas, and culture. Globalization is primarily an economic process of integration that has social and cultural aspects. It involves goods and services, and the economic resources of capital, technology and data.

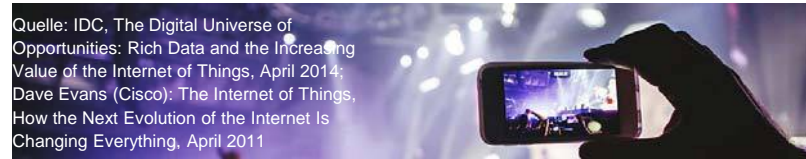


- What does Capacity mean in India?



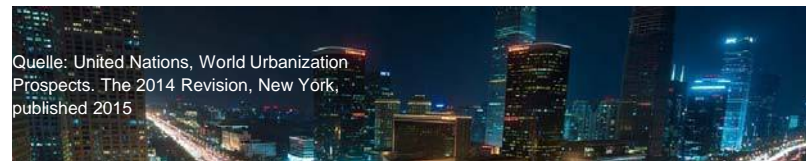
# Megatrends – Challenges that are transforming our world

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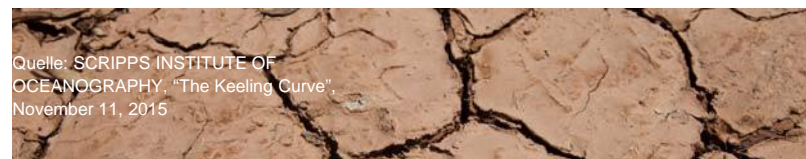
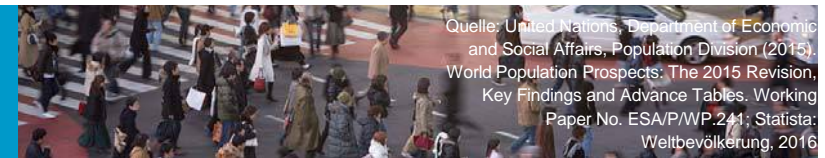
## Digitalization

## Globalization



## Urbanization

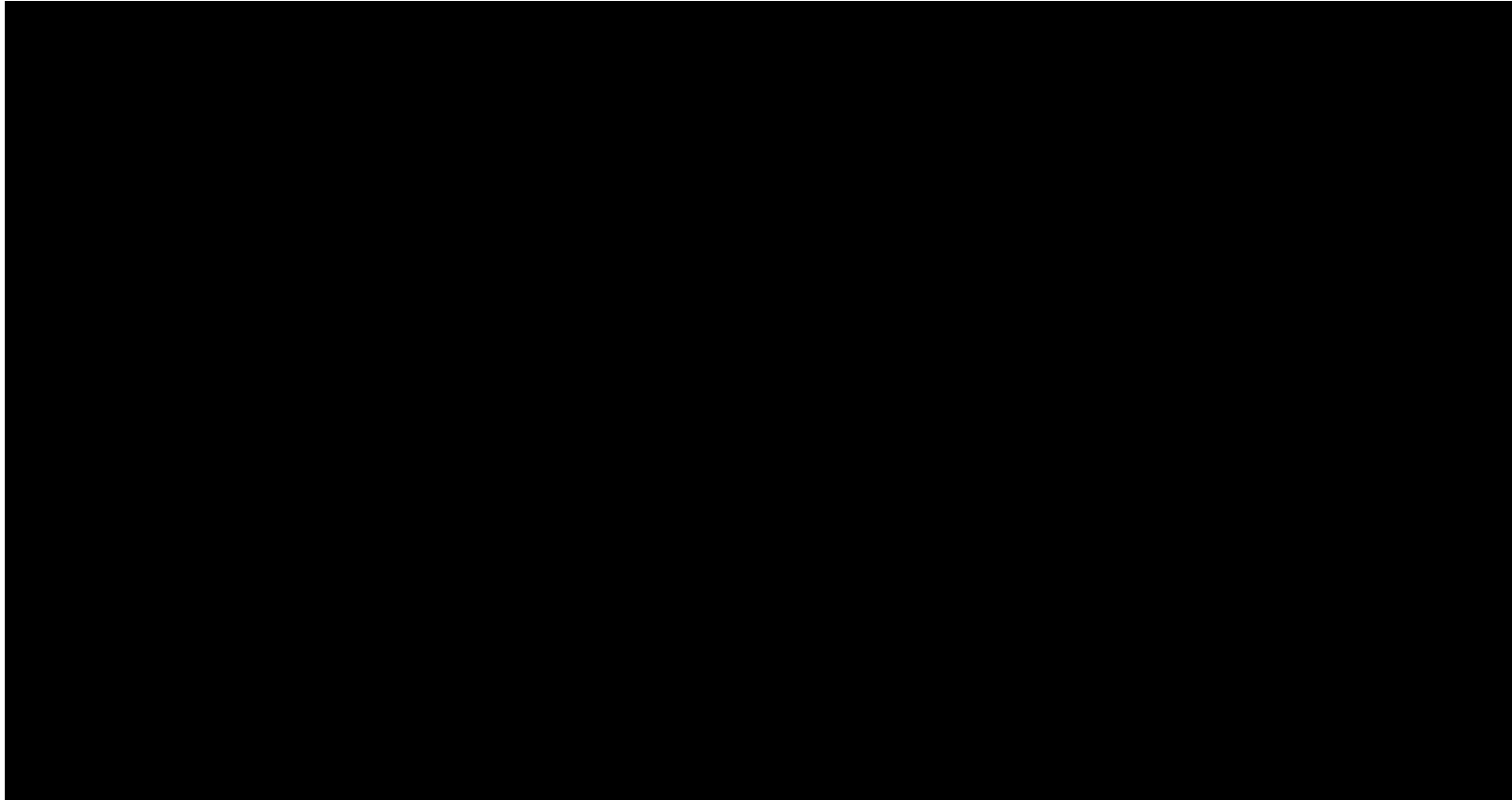
## Demographic change



## Climate change

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## Metro Riyadh – the king has as vision



Quelle: Youtube: Riyadh Public Transport Project (Metro & Buses)

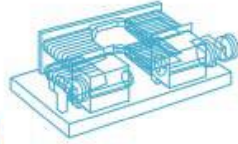
# Milestones of a 170-year history

**SIEMENS**  
Ingenuity for Life

**1816 – 1892**  
Company founder, visionary and inventor



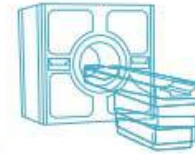
**1866**  
The dynamo makes electricity part of everyday life



**1959**  
SIMATIC makes Siemens a leader in automation technology



**1983**  
First magnetic resonance imaging scanner goes into operation



**2012**  
Test operation of the world's largest rotor for offshore wind turbines



Werner von Siemens

Siemens innovations over the past 170 years

**1847**  
Pointer telegraph lays the foundation of Siemens as a global company



**1925**  
Siemens electrifies the Irish Free State with a hydroelectric power plant



**1975**  
Breakthrough of high-voltage direct current (HVDC) transmission




**2010**  
TIA Portal takes automation a stage further



**2017**  
MindSphere, the cloud-based operating system for the Internet of Things



## Global presence



**Close to customers  
all over the world**

<b>Americas</b>		Share of total worldwide
Revenue <sup>1</sup>	<b>€23.5 billion</b>	28%
Employees <sup>2</sup>	<b>76,000</b>	20%

<b>Germany</b>		Share of total worldwide
Revenue <sup>1</sup>	<b>€11.1 billion</b>	13%
Employees <sup>2</sup>	<b>115,000</b>	31%

<b>Europe (excluding Germany), CIS<sup>3</sup>, Africa, Middle East</b>		Share of total worldwide
Revenue <sup>1</sup>	<b>€32.2 billion</b>	39%
Employees <sup>2</sup>	<b>111,000</b>	30%

<b>Asia, Australia</b>		Share of total worldwide
Revenue <sup>1</sup>	<b>€16.2 billion</b>	19%
Employees <sup>2</sup>	<b>70,000</b>	19%

<sup>1</sup> By customer location

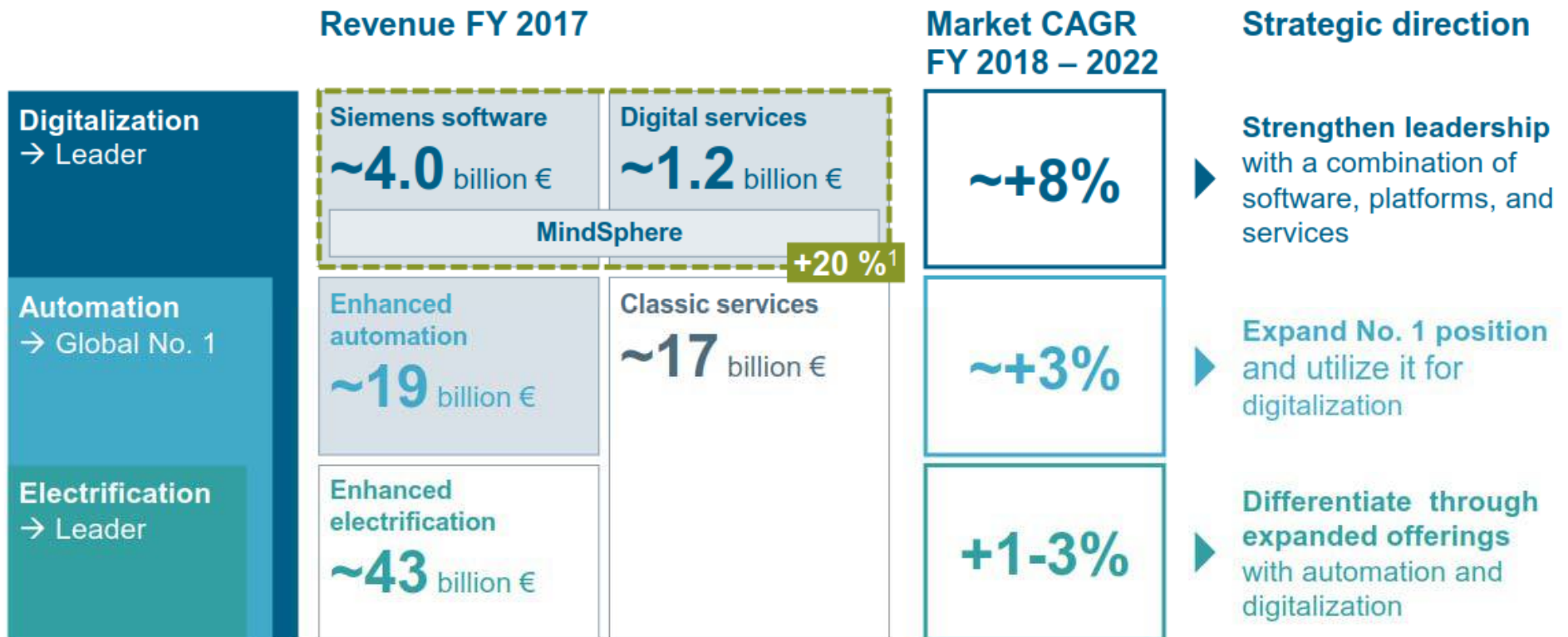
<sup>2</sup> As of September 30, 2017

<sup>3</sup> Commonwealth of Independent States

All figures refer to continuing operations.



## Our focus is on E-A-D – strong growth in „D“

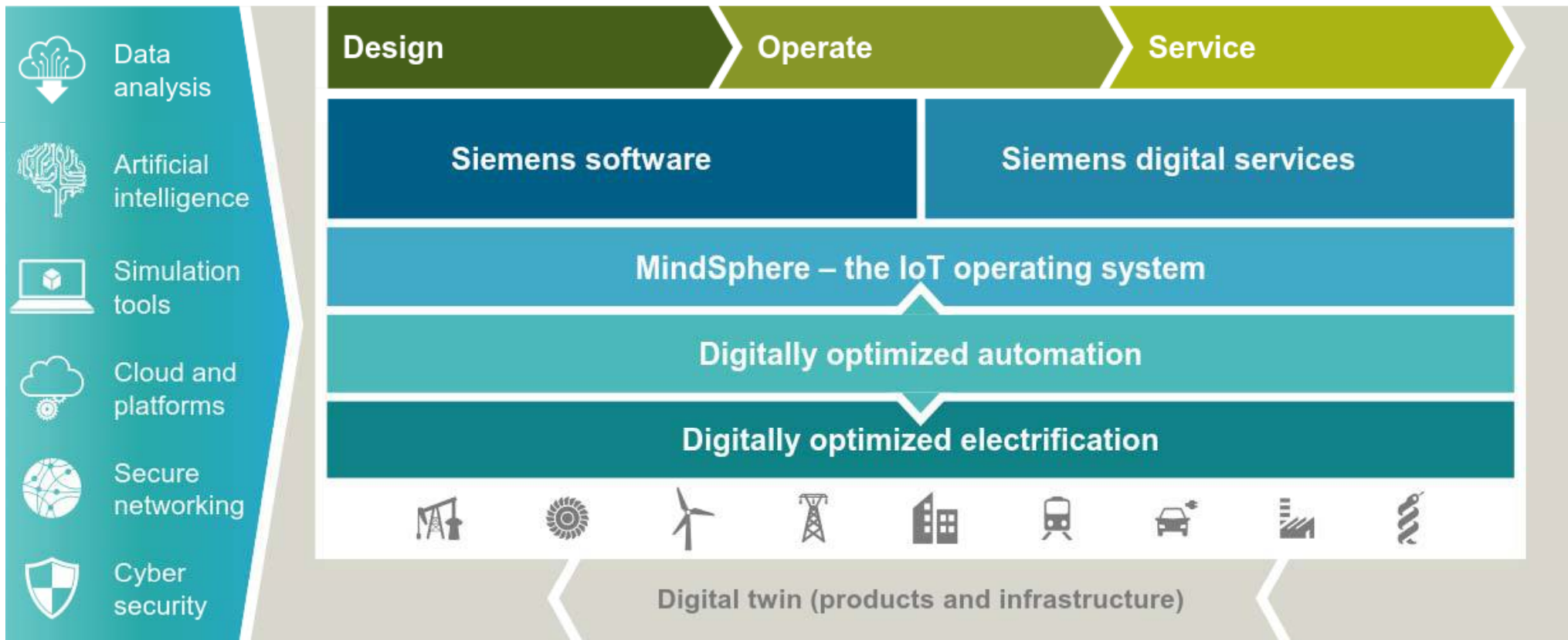


Note: Figures based on Industrial Business; SGRE as of April 2017

1 Growth FY 2016 to FY 2017, rebased; 9% growth for Siemens software excludes Mentor Graphics

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## Our digital portfolio



## A strong partner all over the world – Germany

- In fiscal 2017, Siemens supported more than 500,000 jobs<sup>1</sup>
- Siemens invests about 200 million € per year in vocational training in Germany

	FY 2017	FY 2016
Revenue <sup>2</sup> in billions of €	11.1	10.7
Employees <sup>3</sup>	115,000	113,400

<sup>1</sup> Directly, indirectly and indexed <sup>2</sup> From customers in Germany  
<sup>3</sup> As of September 30, continuing operations



Mitsui Rail Capital Europe (MRCE), a locomotive leasing company, has ordered 30 Vectron locomotives from Siemens. Ten of the units will be delivered for cross-border operations in Germany, Austria, Italy, Switzerland and the Netherlands. Twenty further locomotives will be equipped as direct-current locomotives (Vectron DC) to operate in Italy.



For the first time, a portion of the low-voltage network has been decoupled from the main power grid. In the town of Wildpoldsried, it was possible to provide uninterrupted and stable operation of an island grid. Siemens implemented a microgrid there – a regional, self-contained and intelligent power distribution grid.



Siemens is building an overhead contact line for electrified freight transport on a ten-kilometer stretch of freeway in the German state Hesse. The first infrastructure for electric trucks line will supply electricity for the electric drive of a hybrid truck.

## A strong partner all over the world— Asia, Australia

- More than 4,500 local R&D experts and engineers work for Siemens in China
- Siemens automation technology is used in 1 of every 3 industrial and manufacturing plants in Singapore

	FY 2017	FY 2016
Revenue <sup>1</sup> in billions of €	16.2	15.1
Employees <sup>2</sup>	70,000	62,700

<sup>1</sup> From customers in Asia, Australia

<sup>2</sup> As of September 30; continuing operations



Siemens Gamesa has been commissioned to develop India's first large commercial hybrid wind-solar project, where a 28.8-MW solar facility will be connected to an existing 50 MW wind farm. This is the first project of its kind for the company.



Siemens China will lead the company's global research in autonomous robotics. As part of its innovation strategy, Siemens and Tsinghua University will jointly set up a robotics research center in Beijing.

### New Siemens metro trains for Bangkok Blue Line Extension

Bangkok Expressway and Metro Ptc and CH. Kanchang Ptc are working with Consortium of Siemens and SRE for integrated turnkey project including 35 new 3-car trains



For a fifth major rail order in Bangkok, Siemens will deliver rail technology for the extension of Bangkok's Blue Line Metro – including 35 three-car metro trains, the signaling system, the traction power supply and complete equipment for the depot.

# Mobility



**Shaping the future of mobility**

The efficient, safe and environmentally friendly transportation of people and goods by rail and road – the Mobility Division bundles all of Siemens' transportation-related products, solutions and services.

Advanced networked and IT-based mobility solutions and comprehensive know-how are increasing infrastructure availability, optimizing route use and raising travel quality to new levels – by rail, on the road, or across multiple modes of transportation.

Provided regulatory authorities approve, the planned merger of the Siemens and Alstom mobility businesses will unite two successful and innovative companies with a long tradition in the rail industry. Our aim is to jointly create a European champion and so offer customers unique added value.






[www.siemens.com/about/mobility](http://www.siemens.com/about/mobility)

	<b>FY 2017</b>	<b>FY 2016</b>
Orders in millions of €	<b>8,963</b>	7,875
Revenue in millions of €	<b>8,099</b>	7,825
Employees <sup>1</sup>	<b>28,400</b>	27,100

<sup>1</sup> As of September 30

<sup>1</sup> zum 30. September 2016

# Railway and highway networks are essential for mobility and are facing significant challenges

<p><b>Trend</b></p>	<p>Cities are growing at a rate of <b>2 inhabitants per second</b>  <b>More and more people and goods must be transported within and between cities – mostly by rail and road</b></p>	
<p><b>Challenges</b></p>	<p><b>Rail transport, e.g.</b></p> <ul style="list-style-type: none"> <li>• Until 2030: Increase of local rail-based transport systems in Germany from 6 million to 10 million passengers every day</li> <li>• Until 2050: Increase of transport capacity of rail freight traffic in the USA up to 4 billion tons every year</li> </ul>	<p><b>Road transport, e.g.</b></p> <ul style="list-style-type: none"> <li>• Average speed in many big cities is below 20 km/h – and is set to be reduced further</li> <li>• Until 2030: Increase of car density in India 3-fold, in Indonesia 4-fold and in China 10-fold</li> </ul>
<p><b>Focus</b></p>	<p><b>Mobility is the top priority on the political agenda of city mayors – above all, in order to...</b></p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  <p>...increase the capacity...</p> </div> <div style="text-align: center;">  <p>...protect the environment...</p> </div> <div style="text-align: center;">  <p>...ensure safety...</p> </div> <div style="text-align: center;">  <p>...manage with tight budgets...</p> </div> </div>	

# Our focus is on the industrial growth areas of electrification, digitalization and automation

## Electrification

### Grid stabilization for the Swedish railways



- 13 static Sitras SFC plus multi-level converters stabilize the Swedish traction power supply system
- Total power: over 280 MVA
- Significantly less failures, which increases operational reliability
- Reduced space requirements, as well as noise and CO<sub>2</sub> emissions

## Digitalization

### Sittraffic traffic management, Berlin (VIZ)



- Europe's most advanced traffic control and information center
- Management of more than 2,000 traffic controllers, 1,100 detectors, 250 cameras and eight traffic management systems
- Total length of the network of roads, tunnels and highways covered: 1,500 km
- Traffic information is made available to the public, to the media and to authorities via Internet, email and text services

## Automation

### Driverless metro operation, Paris



- With a length of about 17 kilometers, Metro Line 1 is the oldest and most heavily traveled underground line in Paris.
- Daily transport capacity: about 725,000 passengers
- Line, rolling stock and operations control center equipped with the Trainguard MT train protection system from Siemens
- Result: 15% reduction in energy consumption, 20% increase in transport capacity

# Digitalization drives our mobility

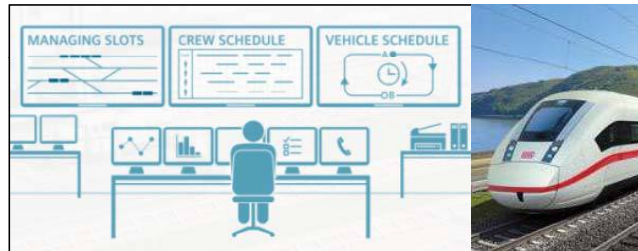
## Availability ...



- Smart data analytics for infrastructure and vehicle service
- Combine high vehicle/infrastructure performance with Best-in-Class Service & Maintenance

## Guaranteed availability

## Throughput ...



- Integrated resource management
- Software for next generation train control (ETCS Lx and CBTC)
- Next generation digitally enhanced interlocking

## Best asset utilization

## Passenger experience ...



- Passenger Information & Assistance Systems
- Broadband & Entertainment Services
- Automated fare collection "Be-in/Be-out"

## Enhanced passenger experience



## FIFA 2018 World Cup Major challenge for Customer Services in Russia



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- FIFA World Cup 2018 will be hosted on 12 stadiums in 11 cities in June / July 2018
- Desiro RUS / Velaro RUS trains will provide transportation services in 6 cities

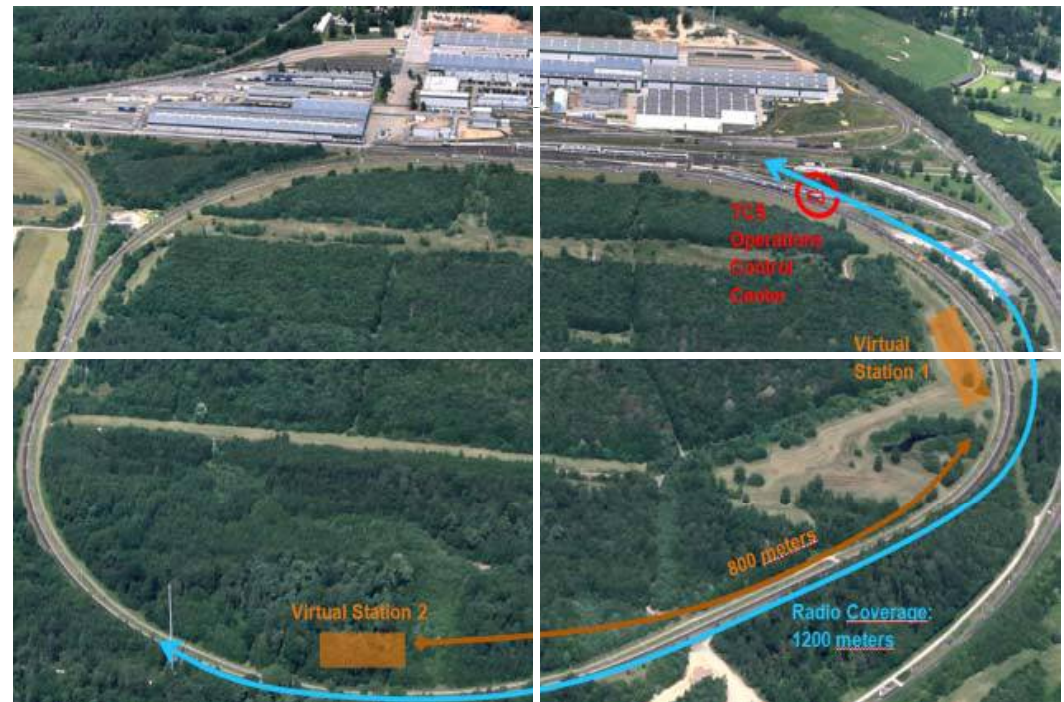
See you in Russia  
in 2018!



## ATO Metro Riyadh – Construction of a test environment for automatic driving

### T2 to be equipped with wireless technology

- Temporary construction of 6 transmitter stations on the T2 overhead contact line poles.
- Control center set up in a container on track 205.
- Automatic driving/braking of Metro Riyadh on an approximately 1 km long section of T2.
- First ever integration of Siemens infrastructure from France, control engineering from Braunschweig and vehicle from Vienna/Erlangen.



## Being an employer of choice

Siemens invests about **€510 million** each year in the training and education of employees.



The „International Tech Apprenticeship@Siemens program enables more than **100 young people** from EU countries as well as Turkey, Egypt, Algeria, Morocco and South Africa to participate in work-study programs in Germany in the fields of electronics and mechatronics



Siemens supports employee engagement with employee share programs; **165,000 Siemens employees** are already shareholders of the company.

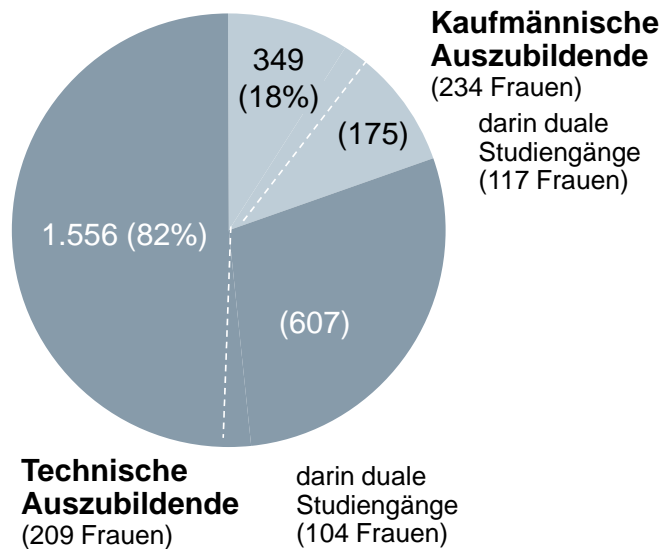


In fiscal 2017, **6,470 Siemens employees** were enrolled in work-study programs that combine academic learning with practical experience.

## Siemens ist einer der größten Ausbilder in Deutschland

**Ausbildungskosten Deutschland**  
190' € p.a. in 2015

▶ **1.905 Einstellungen in 2016**



**Bestand (30.09.2016)**  
6.735

<b>Technische Berufe</b>	<b>5.510</b> darin 705 Frauen
<b>Kaufmännische Berufe</b>	<b>1.079</b> darin 671 Frauen
<b>Siemens Technik Akademie</b>	<b>146</b> darin 15 Frauen

**Ausbildung für Externe**

<b>Externe Auszubildende</b>	<b>2.457</b>
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# Für duale Studiengänge arbeiten Hochschulen und Unternehmen eng zusammen

## Studium

Theorie in Kooperation mit ca. 30 Hochschulen und Universitäten



## Doppelte Qualifikation für junge Leute

Theorie  
+  
Praxis  
+  
Internationale  
Erfahrungen

Dauer 3 – 4 Jahre

## Siemens

Praxisphasen im In- und Ausland



## Unser Produktportfolio

### Ausbildungs- und Studiengänge mit Hochschulreife

#### Elektrotechnik/ Mechatronik

B. Eng. in Elektro- und Informationstechnik inkl./exkl. IHK-Beruf

B. Eng. in Elektrotechnik

B. Eng. in Mechatronik inkl./exkl. IHK-Beruf

B. Sc. in Elektrotechnik und Berufsbildung inkl. IHK-Beruf

B. Eng. in Wirtschaftsingenieurwesen

Associate Engineer

- Automation & Drives
- Informationstechnology
- Power Systems

#### Informations- technik

B. Eng. in Informationstechnik

B. A. in Business Administration inkl. Fachberater/-in

B. Sc. in Computer Science

B. Sc. in IT-Management inkl. IHK-Beruf

Fachberater/-in in

- Softwaretechnik
- Integrierte Systeme
- Vertrieb

#### Mechanik/ Maschinenbau

B. Eng. in Maschinenbau inkl./exkl. IHK-Beruf

Associate Engineer inkl. IHK-Beruf (Mechanical Systems)

Master of Engineering in Energiesystemtechnik inkl. B. Eng. + IHK-Beruf

#### Betriebs- wirtschaft

B. A. in Business Administration inkl./exkl. IHK-Beruf

B. A. in International Management inkl. IHK-Beruf

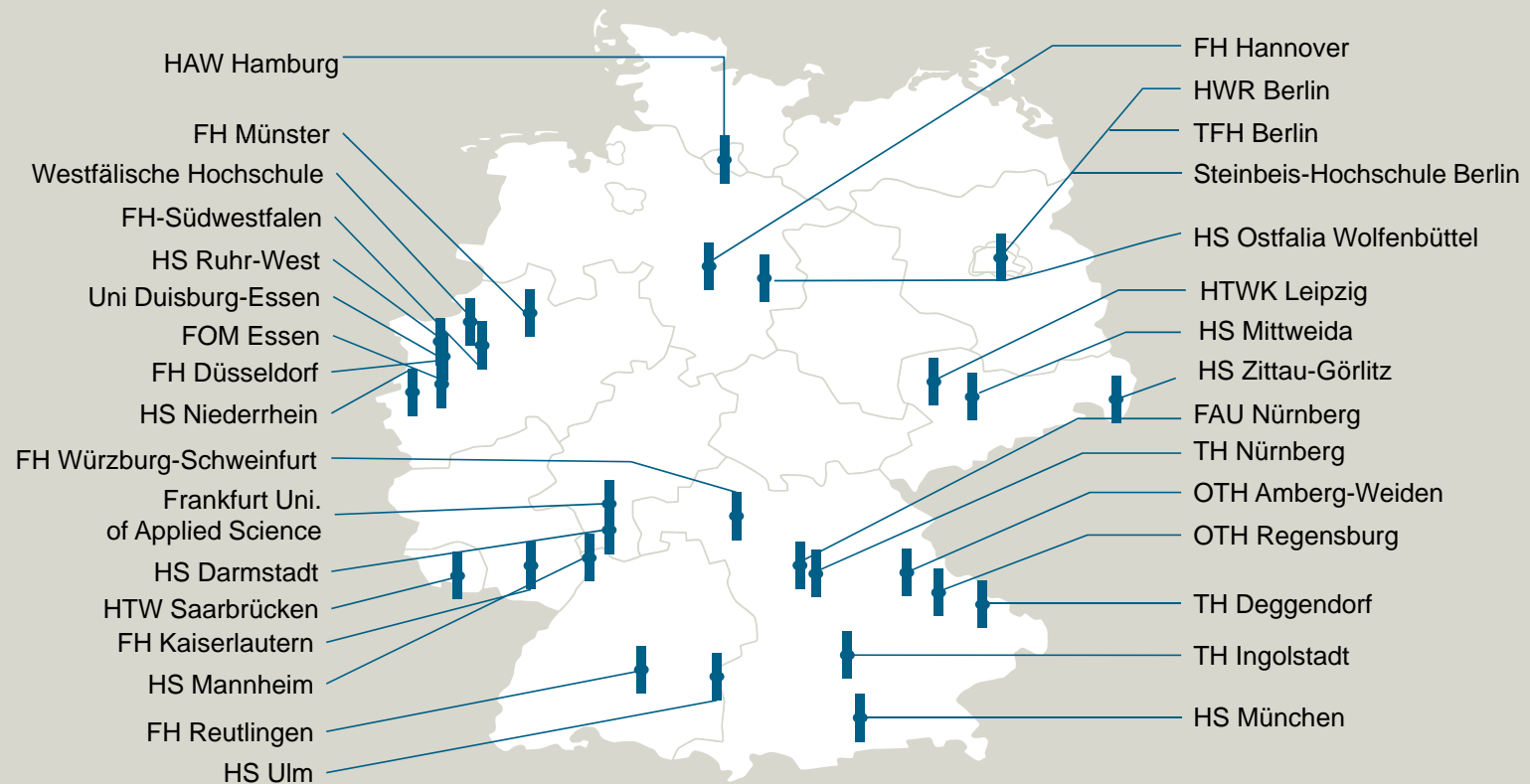
B. A. in BWL Industrie/ Dienstleistungsmngt.

B. Sc. in Wirtschafts-Informatik

B. A. in Management with Engineering

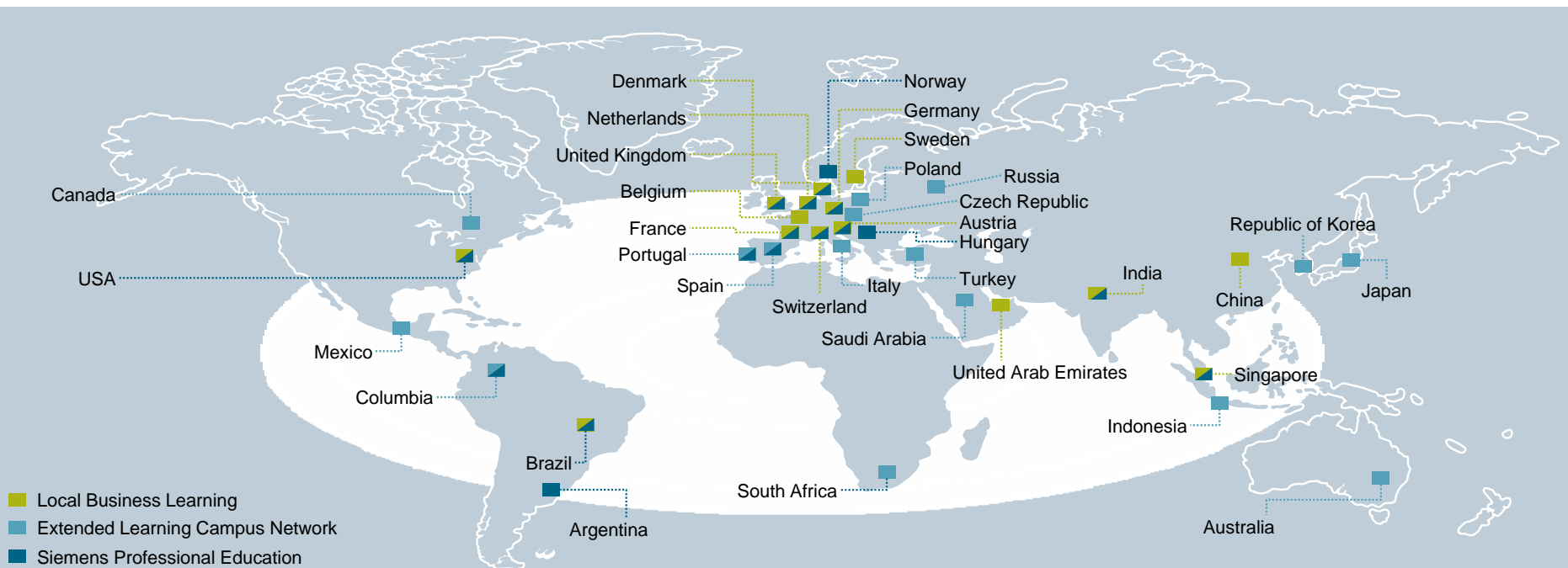
Kaufmann/-frau für Büromanagement (2-jährig)

## Siemens kooperiert bundesweit mit ca. 30 Hochschulen





## Global Learning & Education macht Siemens-Wissen weltweit verfügbar und lokal anwendbar



### Global Learning and Education

Ein globales Netzwerk unserer Aus- und Weiterbildungseinheiten und lokalen Partnern garantiert ein Lernangebot auf höchstem Qualitätsniveau

# Welcher Ausbildungs-/Studiengang passt zu Ihnen? Der Job Navigator™ unterstützt bei der Berufsfindung

**SIEMENS**  
Ingenuity for Life



## Finden Sie heraus, welcher Ausbildungs-/Studiengang zu Ihnen passt

Anonym und kostenlos.  
Auch auf mobilen Geräten.

[www.siemens.de/jona](http://www.siemens.de/jona)



## So funktioniert der Job Navigator™

### Berufliche Interessen und Neigungen

- Ermittlung der Interessen für bestimmte Tätigkeitsfelder und Arbeitsformen
- Z.B. "Wie gerne arbeiten Sie mit dem Computer?"

### Fähigkeiten

- Testen verschiedener Fähigkeiten, die für die unterschiedlichen Tätigkeitsfelder relevant sind
- Z.B. logisches Denken oder räumliche Vorstellung

### Empfehlung

- Die Kombination aus beruflichen Interessen und Fähigkeiten ergibt die beste Empfehlung für den Nutzer
- Empfehlung passender Ausbildungs-/Studiengänge bei Siemens und Kooperationspartnern

# Unser moderner Auswahlprozess beginnt online von zu Hause aus

**Online Bewerbung<sup>1)</sup>**  
**siemens.de/ausbildung**



**Online Assessment**



**Recruiting Center**



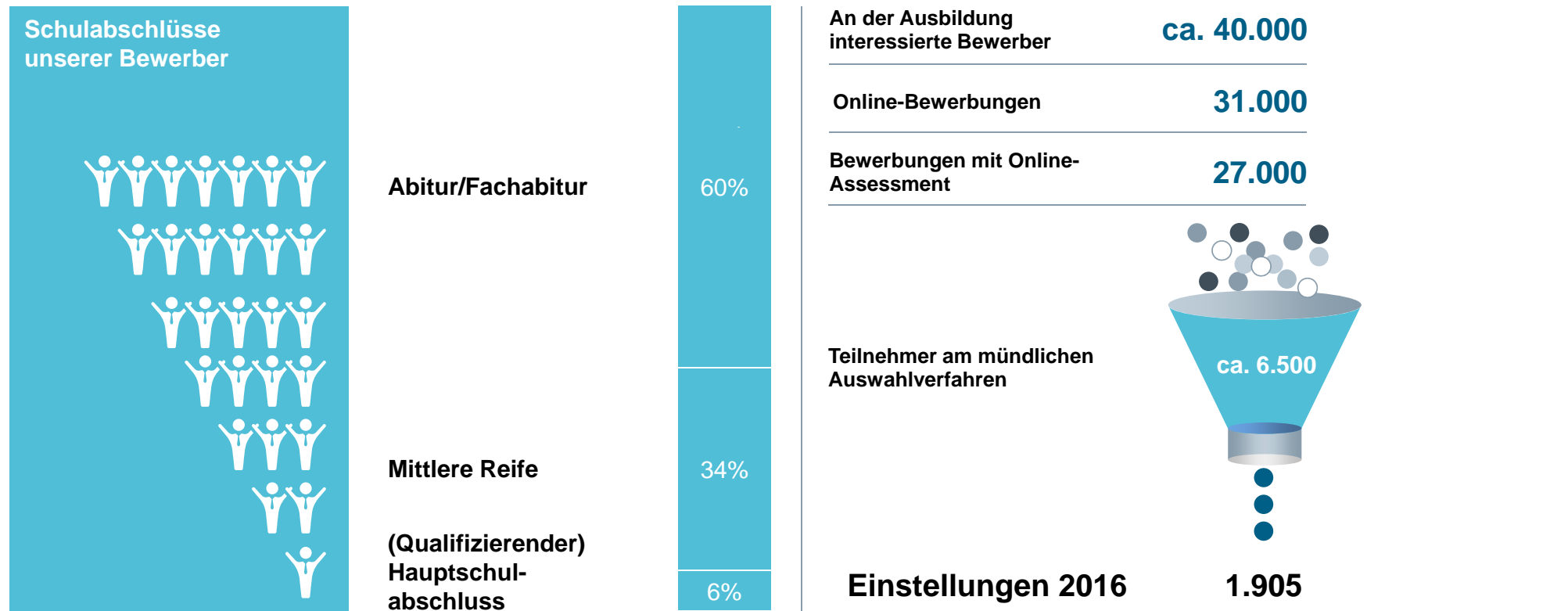
**Mündliche Auswahl**



**Zusage/Einstellung**

1) Bei schriftlichen Bewerbungen werden die Grunddaten (Name, Adresse) des Bewerbers durch das Recruiting Center erfasst. Der Bewerber wird im Antwortbrief gebeten, seine persönlichen Daten online zu vervollständigen und am Online Assessment teilzunehmen.

## Unabhängig von den Schulnoten können alle Bewerber das Online-Assessment durchführen



## Siemens möchte den Anteil der Frauen in technischen Berufen erhöhen

Bestand (30.09.2015): 6.966

<b>Technische Berufe</b>	<b>5.495</b> Darin 677 Frauen
<b>Kaufmännische Berufe</b>	<b>1.168</b> Darin 717 Frauen
<b>Siemens Technik Akademie</b>	<b>303</b> Darin 37 Frauen



## Diversity-Maßnahmen in der SPE

- Gezielte Marketing- und Recruiting-maßnahmen für Mädchen (besonders für MINT-Berufe)
- Aufbau Gender Know-how aller am Ausbildungsprozess beteiligten Mitarbeiter
- Diversity-Tage in der Ausbildung
- Siemens stellt jährlich rund 1.800 Plätze im Rahmen des Girls'Day zur Verfügung
- Mentoring von weiblichen Auszubildenden und dual Studierenden durch weibliche Führungskräfte

## Unsere Erwartungen: Ihre Motivation

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**Weltweite  
Mobilität**

**Kommunikations-  
fähigkeit**

**Lernbereitschaft**

**Kreativität**

**Analysefähigkeit**

**Engagement**

**Flexibilität**

**Teamfähigkeit**



## Kontakt

**SIEMENS**  
*Ingenuity for Life*



### **Benita Hinsen**

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People and Leadership

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