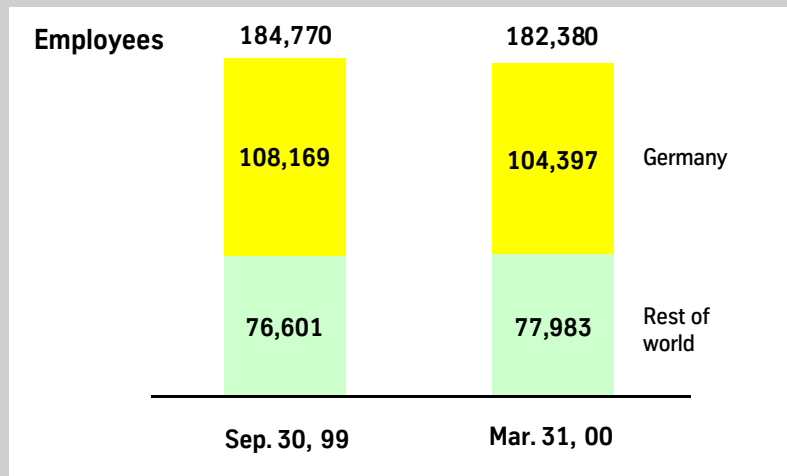
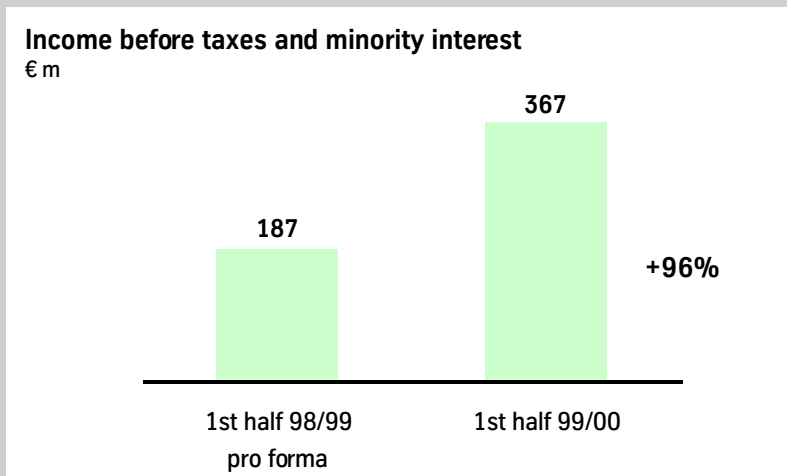
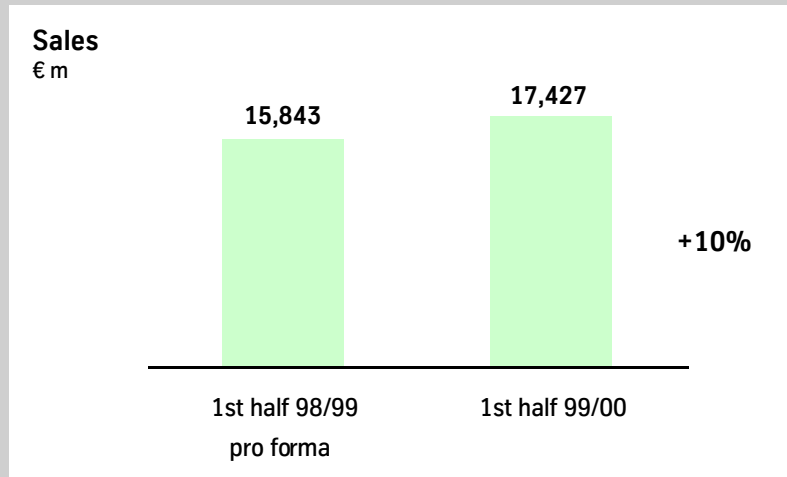
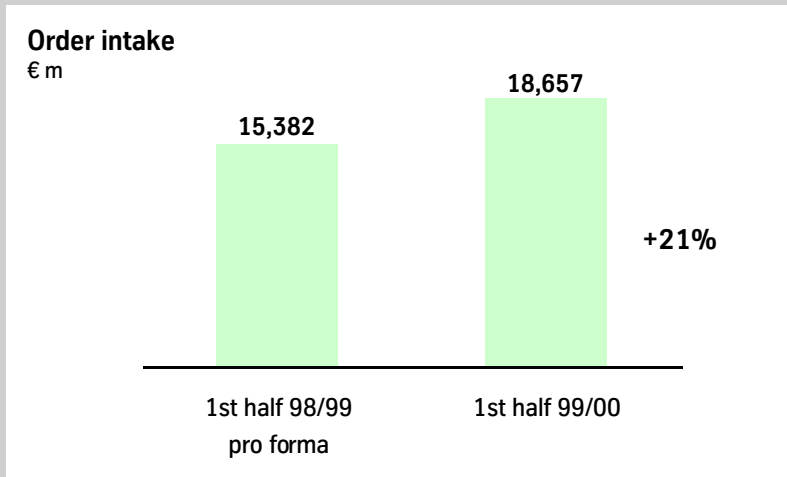


# Group



## Comparison of 1st half key figures for 1999/00 and 1998/99

| in €   |   | 1st half<br>1998/99 | 1st half<br>1998/99<br>pro forma | 1st half<br>1999/00 | Change<br>absolute | Change<br>in % |
|--|---|---------------------|----------------------------------|---------------------|--------------------|----------------|
| Order intake                                 | m | 12,799              | 15,382                           | 18,657              | 3,275              | 21.3           |
| Sales  | m | 13,260              | 15,843                           | 17,427              | 1,584              | 10.0           |
| EBITDA                                       | m | 1,001               | 1,155                            | 1,443               | 288                | 24.9           |
| Income before taxes and<br>minority interest | m | 195                 | 187                              | 367                 | 180                | 96.3           |
| Net income                                   | m | 54                  | 62                               | 171                 | 109                | 175.8          |
| Earnings per share                           | m | 0.12                | 0.12                             | 0.33                | 0.21               | 175.0          |
| Cash flow                                    | m | –                   | –                                | 231                 | –                  | –              |
| Capital expenditure                          | m | –                   | –                                | 1,207               | –                  | –              |
| Depreciation/amortization                    | m | –                   | 839                              | 896                 | 57                 | 6.8            |



## Comparison of 1st half key figures at Sep. 30, 1999 and Mar. 31, 2000

| in €                   |   | Sep. 30,<br>1999 | Mar. 31,<br>2000 | Change<br>absolute | in % |
|------------------------|---|------------------|------------------|--------------------|------|
| Stockholders' equity   | m | 8,053            | 8,360            | 307                | 3.8  |
| Net financial payables | m | 6,193            | 7,121            | 928                | 15.0 |
| Gearing                | % | 76.9             | 85.2             | 8.3%-p.            | –    |
| Employees              |   | 184,770          | 182,380          | -2,390             | -1.3 |



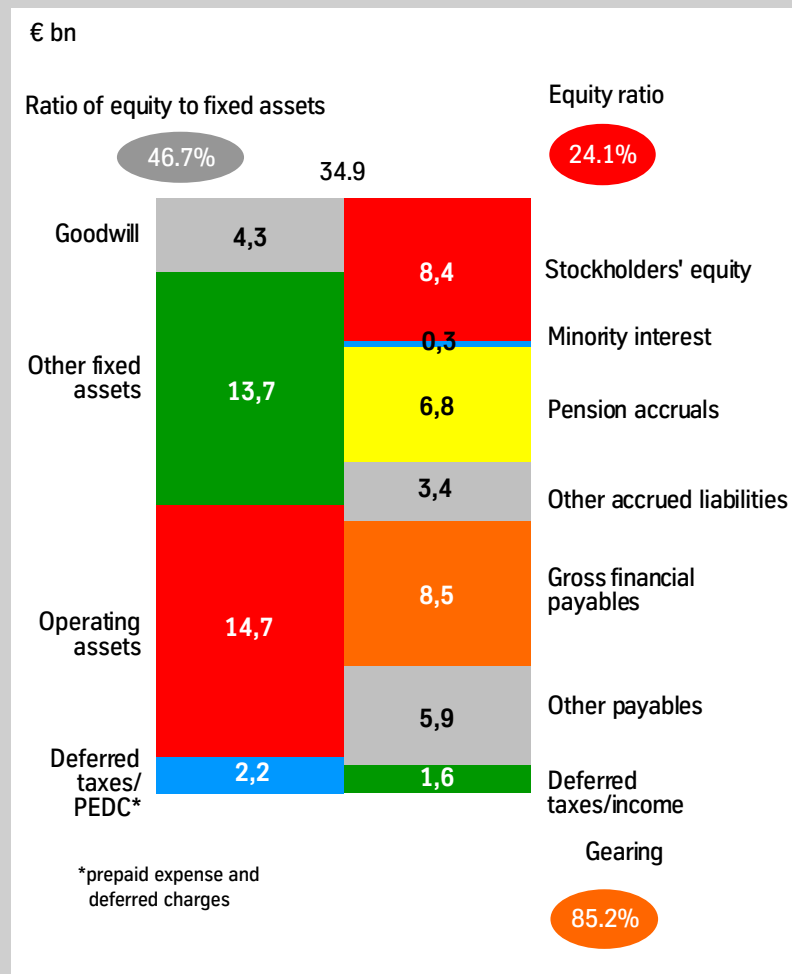
# Income statement

## Cost of sales format

| € m   | 1st half<br>1999/00 |
|---|---------------------|
| Net sales   | 17,427              |
| Cost of sales   | -14,310             |
| <b>Gross margin</b>   | <b>3,117</b>        |
| Selling expenses  | -1,605              |
| General administrative expenses                             | -1,261              |
| Other operating income                                      | 391                 |
| Other operating expenses                                    | -115                |
| <b>Income from operations before income taxes</b>           | <b>527</b>          |
| Financial income, net                                       | -160                |
| <b>Income before income taxes and<br/>minority interest</b> | <b>367</b>          |
| Income taxes  | -182                |
| Minority interest   | -14                 |
| <b>Net income</b>   | <b>171</b>          |



# Balance sheet Mar. 31, 2000



# Financial payables

| € m  | Sep. 30, 1999 | Mar. 31, 2000 | Change in % |
|--|---------------|---------------|-------------|
| Bonds  | 535           | 532           | -0.6        |
| Notes payable                                      | 194           | 342           | 76.3        |
| Payables to financial institutions (without notes) | 5,379         | 6,481         | 20.5        |
| Capital lease obligations                          | 701           | 698           | -0.4        |
| Other financial payables                           | 190           | 478           | 151.6       |
| <b>Gross financial payables</b>                    | <b>6,999</b>  | <b>8,531</b>  | <b>21.9</b> |
| Cash and cash equivalents                          | 806           | 1,410         | 74.9        |
| <b>Net financial payables</b>                      | <b>6,193</b>  | <b>7,121</b>  | <b>15.0</b> |



# Balance sheet

| € m   | Sep. 30,<br>1999 | Mar. 31,<br>2000 | Change<br>in % |
|---|------------------|------------------|----------------|
| Intangible assets                                       | 4,268            | 4,334            | 1.5            |
| Property, plant and equipment, net                      | 11,636           | 12,091           | 3.9            |
| Financial assets  | 1,592            | 1,545            | -3.0           |
| <b>Fixed assets</b>                                     | <b>17,496</b>    | <b>17,970</b>    | <b>2.7</b>     |
| Inventories   | 6,010            | 6,195            | 3.1            |
| Trade accounts<br>receivable                            | 5,206            | 5,779            | 11.0           |
| Other receivables and<br>other assets                   | 1,178            | 1,319            | 12.0           |
| Securities  | 38               | 62               | 63.2           |
| Cash and cash equivalents                               | 768              | 1,348            | 75.5           |
| <b>Operating assets</b>                                 | <b>13,200</b>    | <b>14,703</b>    | <b>11.4</b>    |
| Deferred taxes/prepaid<br>expenses and deferred charges | 1,953            | 2,179            | 11.6           |
| <b>Assets</b>   | <b>32,649</b>    | <b>34,852</b>    | <b>6.7</b>     |

| € m   | Sep. 30,<br>1999 | Mar. 31,<br>2000 | Change<br>in % |
|---|------------------|------------------|----------------|
| <b>Stockholders' equity</b>                     | <b>8,053</b>     | <b>8,360</b>     | <b>3.8</b>     |
| Minority interest                               | 293              | 315              | 7.5            |
| Pensions  | 6,780            | 6,770            | -0.1           |
| Other accrued liabilities                       | 3,338            | 3,365            | 0.8            |
| <b>Accrued liabilities</b>                      | <b>10,118</b>    | <b>10,135</b>    | <b>0.2</b>     |
| Financial payables                              | 6,999            | 8,531            | 21.9           |
| Trade accounts<br>payable                       | 2,824            | 3,105            | 10.0           |
| Other payables                                  | 2,900            | 2,808            | -3.2           |
| <b>Payables</b>                                 | <b>12,723</b>    | <b>14,444</b>    | <b>13.5</b>    |
| Deferred taxes/<br>deferred income              | 1,462            | 1,598            | 9.3            |
| <b>Stockholders' equity<br/>and liabilities</b> | <b>32,649</b>    | <b>34,852</b>    | <b>6.7</b>     |



# Cash flow statement

| € m   | 1st half<br>1999/00 |
|---|---------------------|
| Net income  | 171                 |
| Minority interest   | 14                  |
| Depreciation of fixed assets  | 896                 |
| Other non-cash items  | -4                  |
| Changes in assets and liabilities   | -817                |
| Gain/loss from disposal of assets   | -29                 |
| <b>Net cash provided by operating activities</b>  | <b>231</b>          |
| Purchase of financial assets and businesses   | -41                 |
| Cash acquired from acquisitions   | 3                   |
| Capital expenditures for property, plant and equipment including intangible assets                          | -1,166              |
| Proceeds from the sale of financial assets and businesses incl. cash of disposed businesses                 | 92                  |
| Proceeds from disposals of property, plant and equipment incl. proceeds from disposals of intangible assets | 137                 |
| <b>Net cash used in investing activities</b>  | <b>-975</b>         |

| € m  | 1st half<br>1999/00 |
|--|---------------------|
| <b>Net cash used in investing activities</b>                         | <b>-975</b>         |
| Increase of financial payables                                       | 1,435               |
| Increase of securities classified as operating assets                | -25                 |
| Other financing activities   | -85                 |
| <b>Change in cash and cash equivalents from financing activities</b> | <b>1,325</b>        |
| Exchange rate changes  | -1                  |
| <b>Increase in cash and cash equivalents</b>                         | <b>580</b>          |



## Order intake

| € m                 | 1st half<br>1998/99<br>pro forma | 1st half<br>1999/00 | Change<br>in % |
|---------------------|----------------------------------|---------------------|----------------|
| Steel               | 4,987                            | 6,819               | 36.7           |
| Automotive          | 2,481                            | 3,017               | 21.6           |
| Elevators           | 1,400                            | 1,695               | 21.1           |
| Production Systems  | 618                              | 747                 | 20.9           |
| Components          | 579                              | 676                 | 16.8           |
| MaterialsServices   | 3,972                            | 4,842               | 21.9           |
| FacilitiesServices  | 632                              | 749                 | 18.5           |
| Real Estate         | 170                              | 155                 | -8.8           |
| Engineering         | 918                              | 594                 | -35.3          |
| Others              | 876                              | 889                 | 1.5            |
| Intersegment orders | -1,251                           | -1,526              | -22.0          |
| <b>Total</b>        | <b>15,382</b>                    | <b>18,657</b>       | <b>21.3</b>    |

## Sales

| € m                | 1st half<br>1998/99<br>pro forma | 1st half<br>1999/00 | Change<br>in % |
|--------------------|----------------------------------|---------------------|----------------|
| Steel              | 5,111                            | 6,082               | 19.0           |
| Automotive         | 2,547                            | 2,973               | 16.7           |
| Elevators          | 1,240                            | 1,409               | 13.6           |
| Production Systems | 612                              | 616                 | 0.7            |
| Components         | 581                              | 639                 | 10.0           |
| MaterialsServices  | 4,254                            | 4,877               | 14.6           |
| FacilitiesServices | 636                              | 752                 | 18.2           |
| Real Estate        | 170                              | 155                 | -8.8           |
| Engineering        | 908                              | 926                 | 2.0            |
| Others             | 962                              | 664                 | -31.0          |
| Intersegment sales | -1,178                           | -1,666              | -41.4          |
| <b>Total</b>       | <b>15,843</b>                    | <b>17,427</b>       | <b>10.0</b>    |



## EBITDA

### Income

| € m                | 1st half<br>1998/99<br>pro forma | 1st half<br>1999/00 | Change<br>in % |
|--------------------|----------------------------------|---------------------|----------------|
| Steel              | 543                              | 708                 | 30.4           |
| Automotive         | 278                              | 326                 | 17.3           |
| Elevators          | 106                              | 164                 | 54.7           |
| Production Systems | 49                               | 9                   | -81.6          |
| Components         | 74                               | 89                  | 20.3           |
| MaterialsServices  | 76                               | 137                 | 80.3           |
| FacilitiesServices | 59                               | 73                  | 23.7           |
| Real Estate        | 59                               | 63                  | 6.8            |
| Engineering        | -3                               | -7                  | -133.3         |
| Others             | -53                              | -105                | -98.1          |
| Consolidation      | -33                              | -14                 | 57.6           |
| <b>Total</b>       | <b>1,155</b>                     | <b>1,443</b>        | <b>24.9</b>    |

## Income

### before taxes and minority interest

| € m                | 1st half<br>1998/99<br>pro forma | 1st half<br>1999/00 | Change<br>in % |
|--------------------|----------------------------------|---------------------|----------------|
| Steel              | 86                               | 183                 | 112.8          |
| Automotive         | 123                              | 155                 | 26.0           |
| Elevators          | 34                               | 84                  | 147.1          |
| Production Systems | 1                                | -47                 | -              |
| Components         | 32                               | 39                  | 21.9           |
| MaterialsServices  | 12                               | 60                  | 400.0          |
| FacilitiesServices | 10                               | 17                  | 70.0           |
| Real Estate        | 26                               | 33                  | 26.9           |
| Engineering        | -9                               | -9                  | -              |
| Others             | -95                              | -134                | -41.1          |
| Consolidation      | -33                              | -14                 | 57.6           |
| <b>Total</b>       | <b>187</b>                       | <b>367</b>          | <b>96.3</b>    |

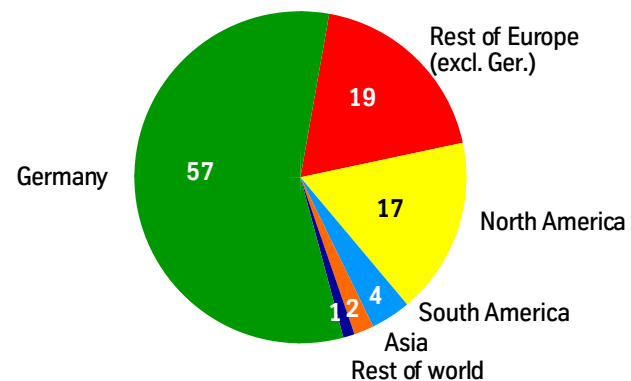


# Employees

|                            | Sep. 30,<br>1999 | Mar. 31,<br>2000 | Change<br>absolute | Change<br>in % |
|----------------------------|------------------|------------------|--------------------|----------------|
| Steel                      | 54,388           | 53,414           | -974               | -1.8           |
| Automotive                 | 37,594           | 38,619           | 1,025              | 2.7            |
| Elevators                  | 26,126           | 26,180           | 54                 | 0.2            |
| Production Systems         | 8,383            | 8,476            | 93                 | 1.1            |
| Components                 | 9,191            | 9,410            | 219                | 2.4            |
| MaterialsServices          | 12,815           | 12,599           | -216               | -1.7           |
| FacilitiesServices         | 15,378           | 15,230           | -148               | -1.0           |
| Real Estate                | 831              | 835              | 4                  | 0.5            |
| Engineering                | 9,594            | 8,976            | -618               | -6.4           |
| Others                     | 10,470           | 8,641            | -1,829             | -17.5          |
| of which: Thyssen Krupp AG | 419              | 421              | 2                  | 0.5            |
| <b>Total</b>               | <b>184,770</b>   | <b>182,380</b>   | <b>-2,390</b>      | <b>-1.3</b>    |
| of which: Germany          | 108,169          | 104,397          | -3,772             | -3.5           |
| Rest of world              | 76,601           | 77,983           | 1,382              | 1.8            |

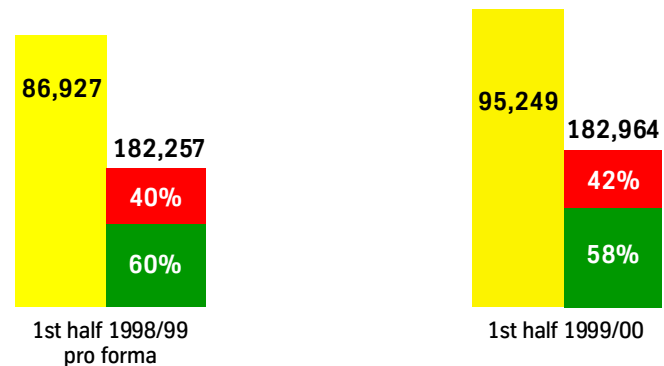
## Employees by region March 31, 2000

in %



## Per capita sales

■ Employees Germany  
■ Employees rest/world  
■ Per capita sales (in €)



# Capital expenditure and depreciation/amortization

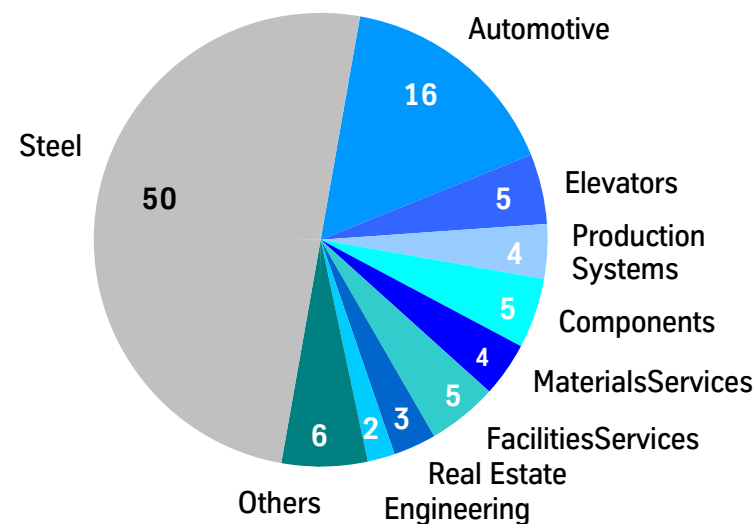
## Capital expenditure 1st half 1999/00

- Total expenditure in the 1st half of 1999/00 was around €1.2 billion
- Expenditure on property, plant and equipment and on intangible assets was €1,166 million
- The remaining €41 million related to the acquisition of companies and equity interests

## Depreciation/amortization by segment

| € m                | 1st half<br>1998/99<br>pro forma | 1st half<br>1999/00 | Change<br>in % |
|--------------------|----------------------------------|---------------------|----------------|
| Steel              | 396                              | 446                 | 12.6           |
| Automotive         | 124                              | 145                 | 16.9           |
| Elevators          | 41                               | 45                  | 9.8            |
| Production Systems | 29                               | 33                  | 13.8           |
| Components         | 35                               | 41                  | 17.1           |
| MaterialsServices  | 35                               | 38                  | 8.6            |
| FacilitiesServices | 47                               | 49                  | 4.3            |
| Real Estate        | 23                               | 22                  | -4.3           |
| Engineering        | 23                               | 20                  | -13.0          |
| Others             | 86                               | 57                  | -33.7          |
| <b>Total</b>       | <b>839</b>                       | <b>896</b>          | <b>6.8</b>     |

## Depreciation/amortization by segment 1st half 1999/00 in %



## Key figures by segment 1st half 1999/00

|                    | Order intake<br>(€ m) | Sales<br>(€ m) | EBITDA<br>(€ m) | EBIT<br>(€ m) | Income*<br>(€ m) | Employees<br>(on Mar. 31, 00) |
|--------------------|-----------------------|----------------|-----------------|---------------|------------------|-------------------------------|
| Steel              | 6,819                 | 6,082          | 708             | 262           | 183              | 53,414                        |
| Automotive         | 3,017                 | 2,973          | 326             | 181           | 155              | 38,619                        |
| Elevators          | 1,695                 | 1,409          | 164             | 119           | 84               | 26,180                        |
| Production Systems | 747                   | 616            | 9               | -24           | -47              | 8,476                         |
| Components         | 676                   | 639            | 89              | 48            | 39               | 9,410                         |
| MaterialsServices  | 4,842                 | 4,877          | 137             | 99            | 60               | 12,599                        |
| FacilitiesServices | 749                   | 752            | 73              | 24            | 17               | 15,230                        |
| Real Estate        | 155                   | 155            | 63              | 41            | 33               | 835                           |
| Engineering        | 594                   | 926            | -7              | -27           | -9               | 8,976                         |
| Others             | 889                   | 664            | -105            | -162          | -134             | 8,641                         |
| Consolidation      | -1,526                | -1,666         | -14             | -14           | -14              | -                             |
| <b>Total</b>       | <b>18,657</b>         | <b>17,427</b>  | <b>1,443</b>    | <b>547</b>    | <b>367</b>       | <b>182,380</b>                |

\*before taxes and minority interest



# Steel

## Order intake Steel

| € m                       | 1st half<br>1998/99<br>pro forma | 1st half<br>1999/00 | Change<br>in % |
|---------------------------|----------------------------------|---------------------|----------------|
| Carbon Steel Flat-Rolled  | 3,066                            | 4,121               | 34.4           |
| Stainless                 | 1,583                            | 2,271               | 43.5           |
| Investments               | 449                              | 517                 | 15.1           |
| Consolidation             | -111                             | -90                 | 18.9           |
| <b>Order intake Steel</b> | <b>4,987</b>                     | <b>6,819</b>        | <b>36.7</b>    |

## Sales Steel

| € m                      | 1st half<br>1998/99<br>pro forma | 1st half<br>1999/00 | Change<br>in % |
|--------------------------|----------------------------------|---------------------|----------------|
| Carbon Steel Flat-Rolled | 3,201                            | 3,750               | 17.2           |
| Stainless                | 1,540                            | 1,981               | 28.6           |
| Investments              | 468                              | 473                 | 1.1            |
| Consolidation            | -98                              | -122                | -24.5          |
| <b>Sales Steel</b>       | <b>5,111</b>                     | <b>6,082</b>        | <b>19.0</b>    |

## Income Steel\*

| € m                       | 1st half<br>1998/99<br>pro forma | 1st half<br>1999/00 | Change<br>in % |
|---------------------------|----------------------------------|---------------------|----------------|
| Carbon Steel Flat-Rolled  | 40 <sup>1)</sup>                 | 184 <sup>2)</sup>   | 360.0          |
| Stainless                 | 31                               | 73                  | 135.4          |
| Investments               | -2                               | -3                  | -50.0          |
| TK Steel AG/Consolidation | 17                               | -71 <sup>3)</sup>   | -517.6         |
| <b>Income Steel</b>       | <b>86 <sup>1)</sup></b>          | <b>183</b>          | <b>112.8</b>   |

\* before taxes and minority interest

<sup>1)</sup> includes compensation payment of €57.8 m (consolidation at Group level)

<sup>2)</sup> includes compensation payment of €43.3 m

<sup>3)</sup> consolidation of compensation payment within TK Steel

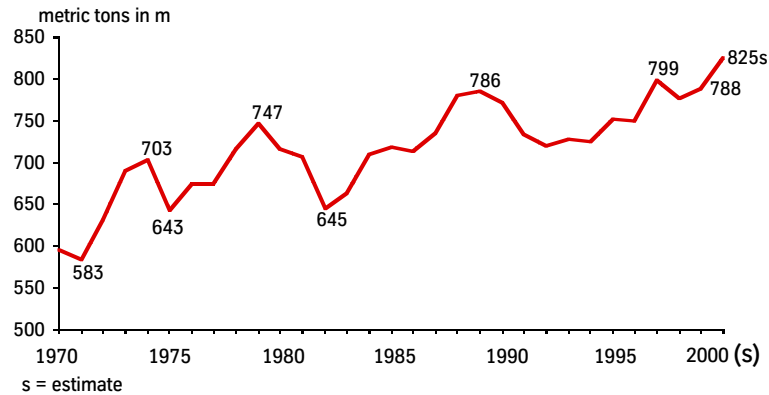
Note: no further compensation payment as of 2nd half 1999/00



# Steel sector activity

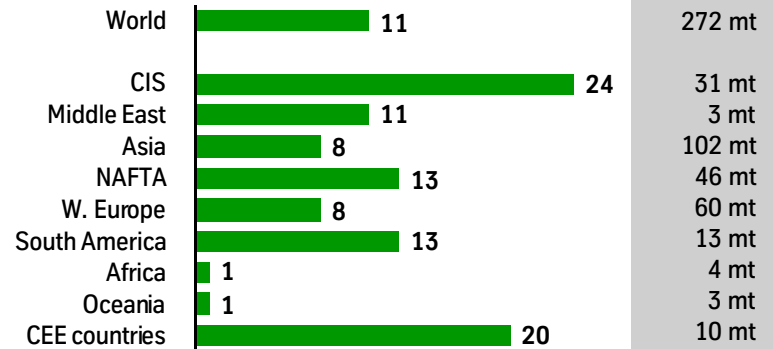
## World crude steel output

Development since 1970



## Crude steel output January to April 2000

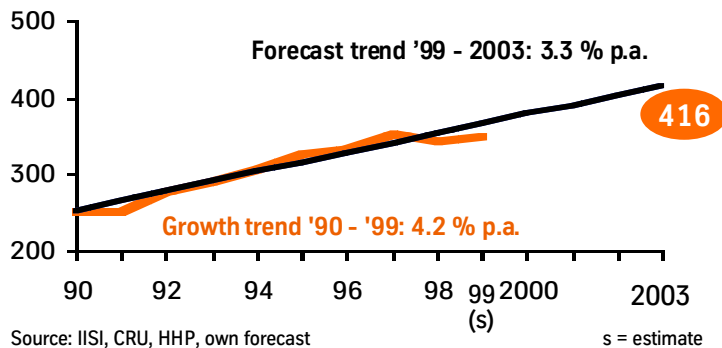
Change in % against prior year



## World carbon steel hot-rolled output (s)

Actual 1990 - 1999 (s) and forecast until 2003

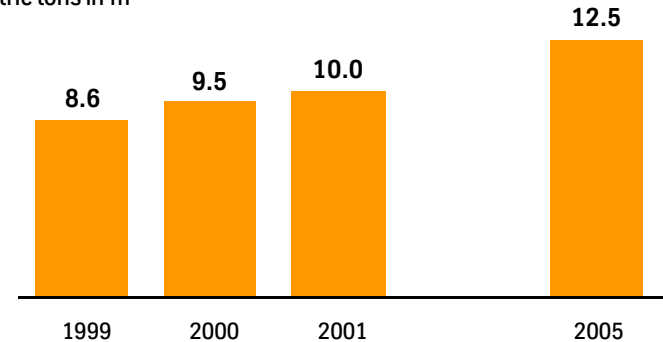
m metric tons/year



## Stainless cold-rolled: World growth trend 1999 to 2005

6.3% p. a.

metric tons in m

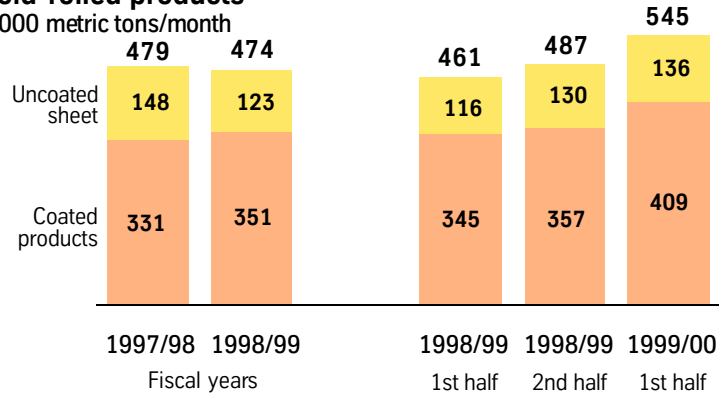


# Carbon Steel Flat-Rolled

## Shipments Thyssen Krupp Stahl AG

### Cold-rolled products

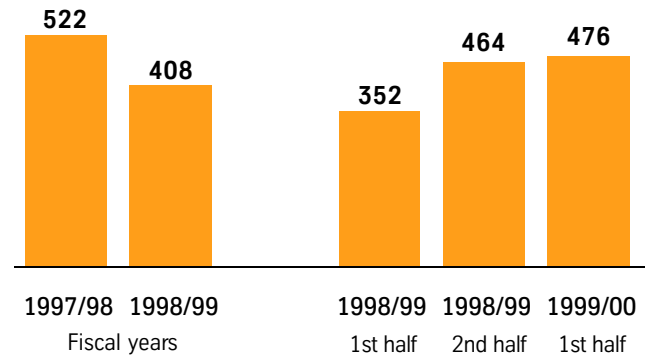
1,000 metric tons/month



## Shipments Thyssen Krupp Stahl AG

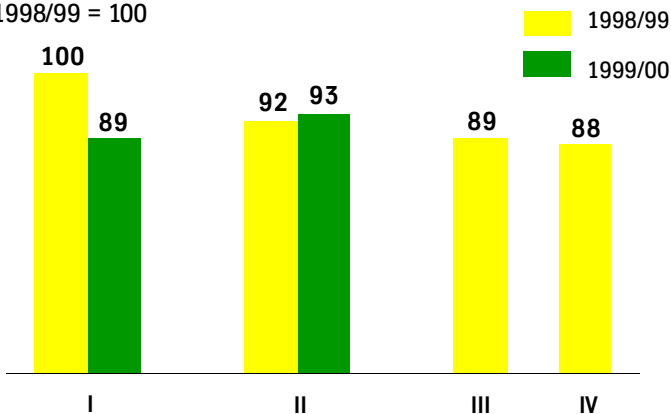
### Hot-rolled products (excl. quarto plate)

1,000 metric tons/month



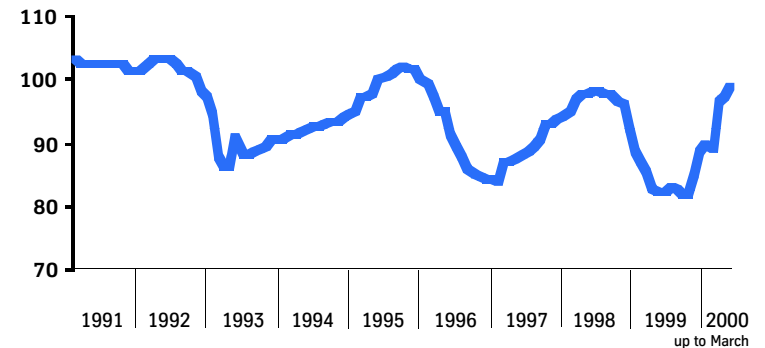
## Thyssen Krupp Stahl AG: average prices per metric ton

Q1 1998/99 = 100



## German production price for cold-rolled unalloyed sheet (new orders)/ 1991 - March 2000

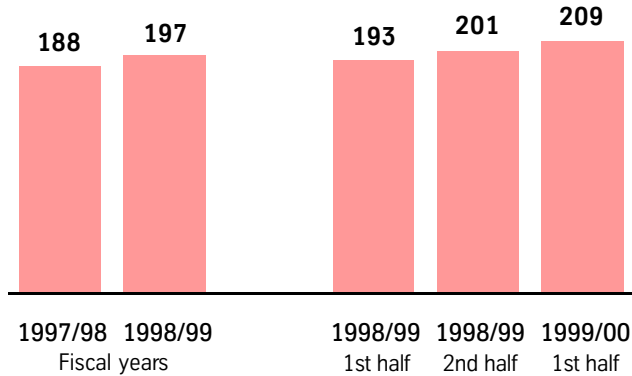
Index 1995 = 100



# Stainless

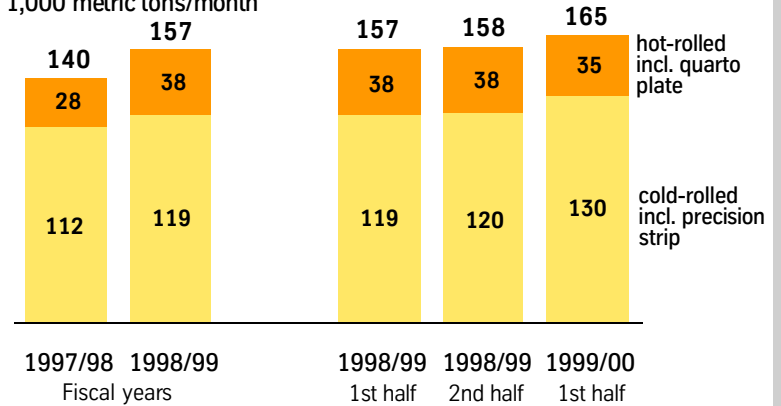
## Total shipments Krupp Thyssen Stainless

1,000 metric tons/month



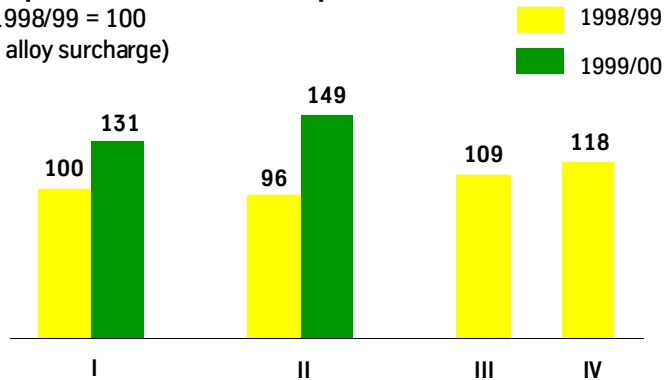
## Stainless flat shipments Krupp Thyssen Stainless

1,000 metric tons/month



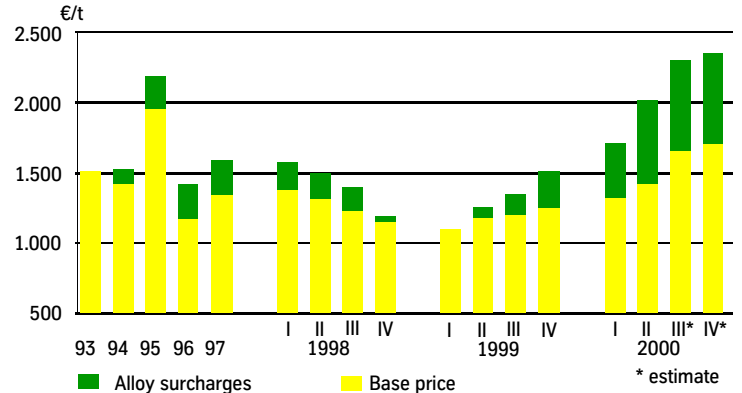
## Krupp Thyssen Nirosta: price per metric ton cold strip 4301

Q1 1998/99 = 100  
(incl. alloy surcharge)



## Price development stainless cold-rolled 4301, W. Europe

(X5 CrNi 18 - 10, 2 x 1250 x 2000, IIIc, trade)



# Outlook

## Economic outlook

- Economic upswing will gain impetus
- We expect sustained strong demand for steel
- World automobile production to remain at a high level
- German construction industry still depressed
- We expect a strong recovery in mechanical engineering

## Outlook ThyssenKrupp

- The encouraging business performance to date will continue in the 2nd half. For fiscal 1999/00 we are currently planning a sales increase - excluding effects from portfolio changes - of 10%.
- The positive earnings performance will continue for the rest of the fiscal year. Income in 1999/00 will be significantly higher than in the previous year.
- Dividend payment not expected to carry tax credit

## Financial calendar

- Dec. 8, 2000 Initial overview of the 1999/00 fiscal year
- Jan. 15, 2001 Annual press conference/analysts' meeting
- Mar. 2, 2001 Annual Stockholders' Meeting



# ThyssenKrupp Automotive



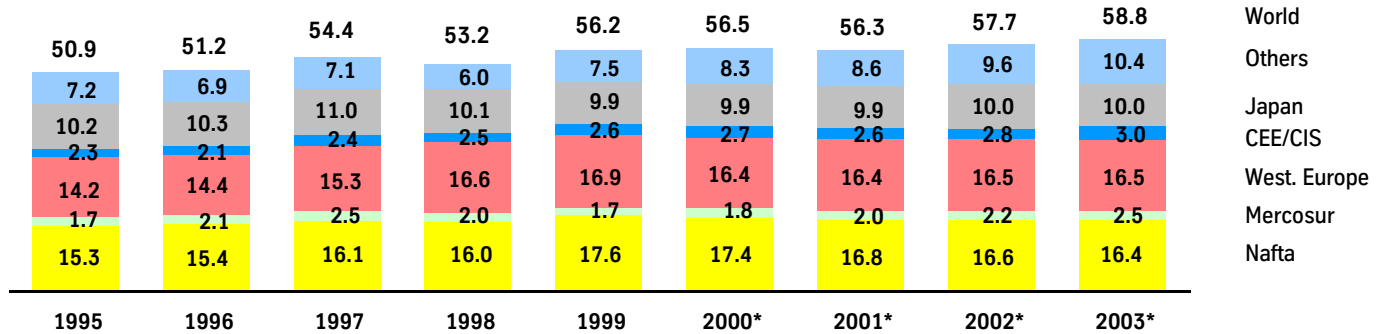
**ThyssenKrupp** Automotive



# Automobile market

**World vehicle output**  
million cars + trucks

CAGR 1.3%



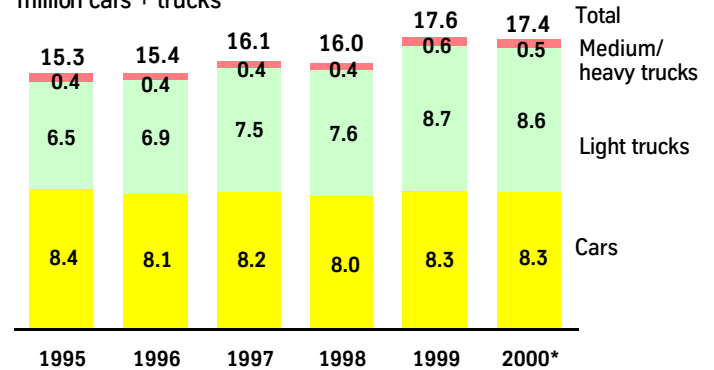
\* Estimate

**Vehicle output Asia and Latin America**  
million cars + trucks



\* Estimate

**Vehicle output Nafta**  
million cars + trucks

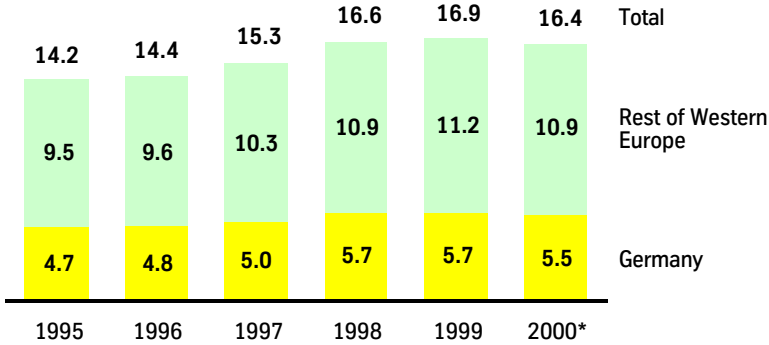


\* Estimate



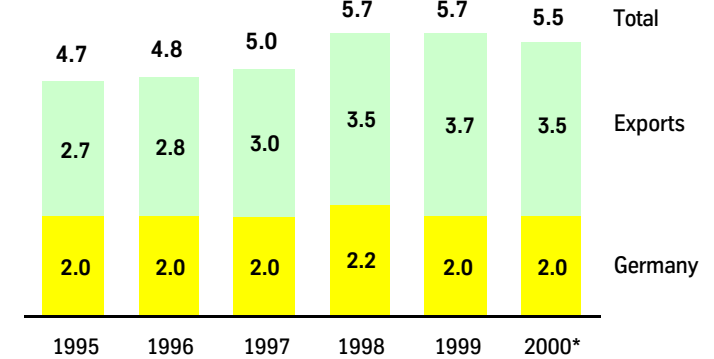
# Automobile market

**Vehicle output Western Europe**  
million cars + trucks



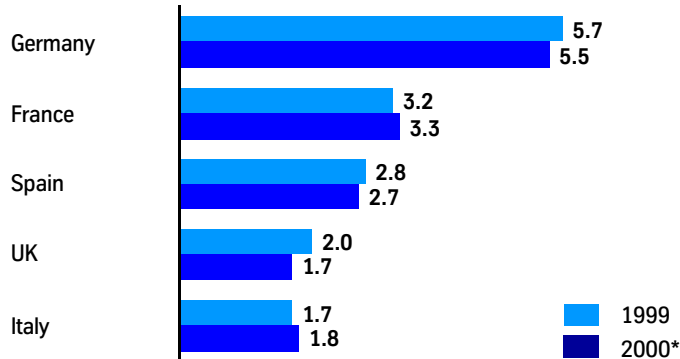
\* Estimate

**Vehicle output Germany**  
million cars + trucks



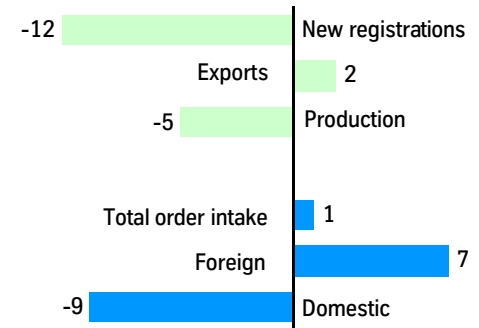
\* Estimate

**Vehicle output Western Europe**  
million cars + trucks



\* Estimate

**German vehicle output (cars) January - April 2000**  
Change in % against corresponding prior-year period



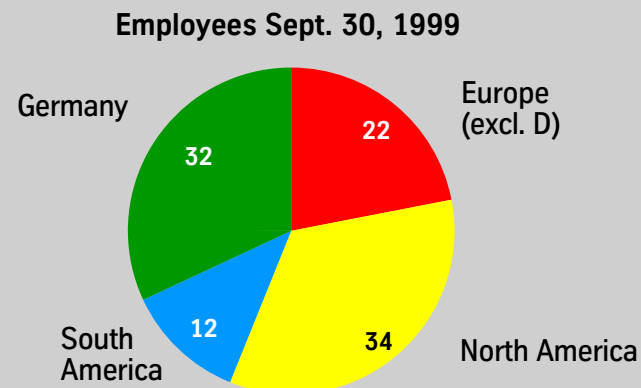
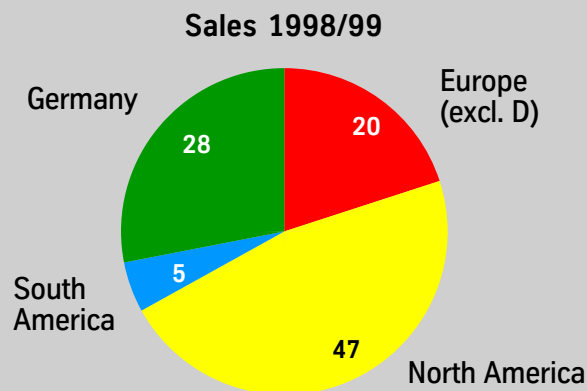
# Key figures

| in €                          |   | Fiscal<br>1998/99<br>pro forma | 1st half<br>1998/99<br>pro forma | 2nd half<br>1999/00 | Change<br>% |
|-------------------------------|---|--------------------------------|----------------------------------|---------------------|-------------|
| Order intake                  | m | 5,115                          | 2,481                            | 3,017               | 21.6        |
| Sales                         | m | 5,208                          | 2,547                            | 2,973               | 16.7        |
| EBITDA                        | m | 590                            | 278                              | 326                 | 17.3        |
| Income*                       | m | 291                            | 123                              | 155                 | 26.0        |
| Employees (Sept. 30/March 31) |   | 37,594                         |                                  | 38,619              | 2.7         |

\* before taxes and minority interest

## Sales and employees by region

%

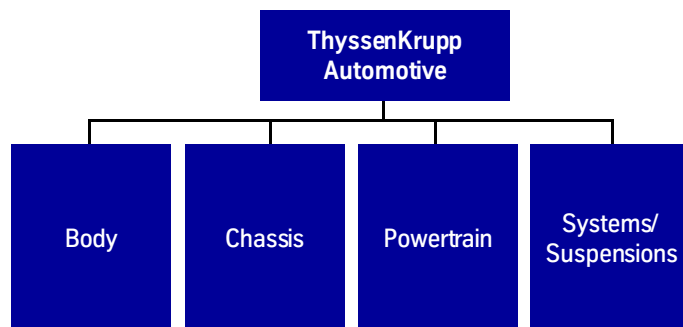


**ThyssenKrupp** Automotive



# Key figures

## Organization



## Order intake Automotive

| € m                            | 1st half<br>1998/99<br>pro forma | 1st half<br>1999/00 | Change<br>% |
|--------------------------------|----------------------------------|---------------------|-------------|
| Body                           | 578                              | 694                 | 20.1        |
| Chassis                        | 821                              | 1,112               | 35.4        |
| Powertrain                     | 619                              | 757                 | 22.3        |
| Systems/Suspensions            | 416                              | 462                 | 11.1        |
| Consolidation/Others           | 47                               | - 8                 |             |
| <b>Order intake Automotive</b> | <b>2,481</b>                     | <b>3,017</b>        | <b>21.6</b> |

## Sales Automotive

| € m                     | 1st half<br>1998/99<br>pro forma | 1st half<br>1999/00 | Change<br>% |
|-------------------------|----------------------------------|---------------------|-------------|
| Body                    | 597                              | 705                 | 18.1        |
| Chassis                 | 868                              | 1,072               | 23.5        |
| Powertrain              | 631                              | 748                 | 18.5        |
| Systems/Suspensions     | 409                              | 456                 | 11.5        |
| Consolidation/Others    | 42                               | - 8                 |             |
| <b>Sales Automotive</b> | <b>2,547</b>                     | <b>2,973</b>        | <b>16.7</b> |

## Employees Automotive

| € m                         | Sept. 30, 99  | Mar. 31, 00   | Change<br>% |
|-----------------------------|---------------|---------------|-------------|
| Body                        | 6,730         | 7,075         | 5.1         |
| Chassis                     | 12,542        | 12,482        | -0.5        |
| Powertrain                  | 11,010        | 11,436        | 3.9         |
| Systems/Suspensions         | 6,959         | 7,264         | 4.4         |
| Services/Sales              | 353           | 362           | 2.5         |
| <b>Employees Automotive</b> | <b>37,594</b> | <b>38,619</b> | <b>2.7</b>  |



# ThyssenKrupp Automotive: The sum of competence



- Leading market positions
- Technology leadership
- Cost leadership
- Materials capability
- Systems capability
- Services
- Close to customers worldwide



## Leading market positions

- Body panels (steel, aluminum, plastic)
- Cast brake components
- Forged and cast crankshafts
- Assembled camshafts
- Transmission components
- Steering columns
- Suspension springs and stabilizer bars
- Systems business
  - axles/complete chassis
  - air suspension systems

around 80% of sales  
in TOP 1-3 positions



# Capability areas

## Materials capability

Processing capability for all main auto materials, iron, steel, aluminum, magnesium, plastics:

|                           | Iron | Steel | Aluminum | Magnesium | Plastic |
|---------------------------|------|-------|----------|-----------|---------|
| Body panels               |      | X     | X        |           | X       |
| Chassis components        | X    | X     | X        |           | X       |
| Engine/transmission parts | X    | X     | X        | X         | X       |
| Steering components       |      | X     | X        | X         |         |

## Fenders of steel, aluminum and plastic



## Cost leadership

- Lean production processes with optimum batch sizes
- International production network
- Highly automated production (e.g. for body assemblies, steering columns)
- Standardized design (e.g. assembled camshaft)
- Reduced number of parts (e.g. hydroforming solutions)

## Camshaft production



# Capability areas

## Technology leadership

Product technologies:

- Safety components
- Axle and frame components
- Crankshafts
- Camshafts
- Steering systems and steering columns

Process technologies:

- Hydroforming
- Forming of large panels
- Manufacture and processing of plastic components
- Casting
- Precision forging

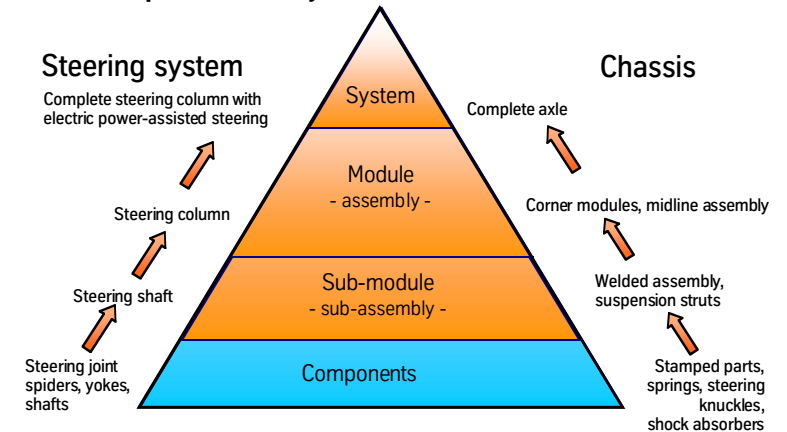
## Hydroforming



## Systems capability

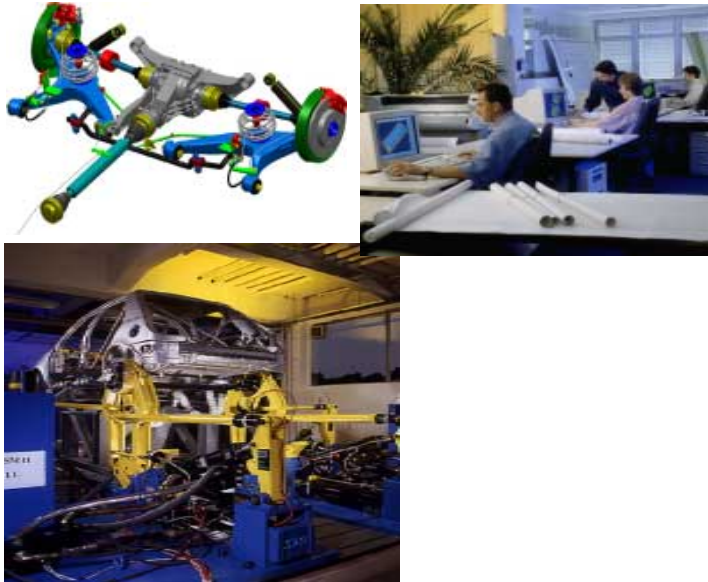
- Linking of components and module business to form systems business (e.g. complete axle systems, air suspension systems)
- Engineering together with OEMs and suppliers
- Taking responsibility for entire systems in production, assembly, logistics (e.g. Porsche axles)

## From components to systems



# Adding services to the value chain

## Engineering



- Project/systems management
- Simultaneous engineering
- Concept / innovation
- Design / calculation
- Simulation / testing
- Integrating electronics
- Start of production

## Assembly



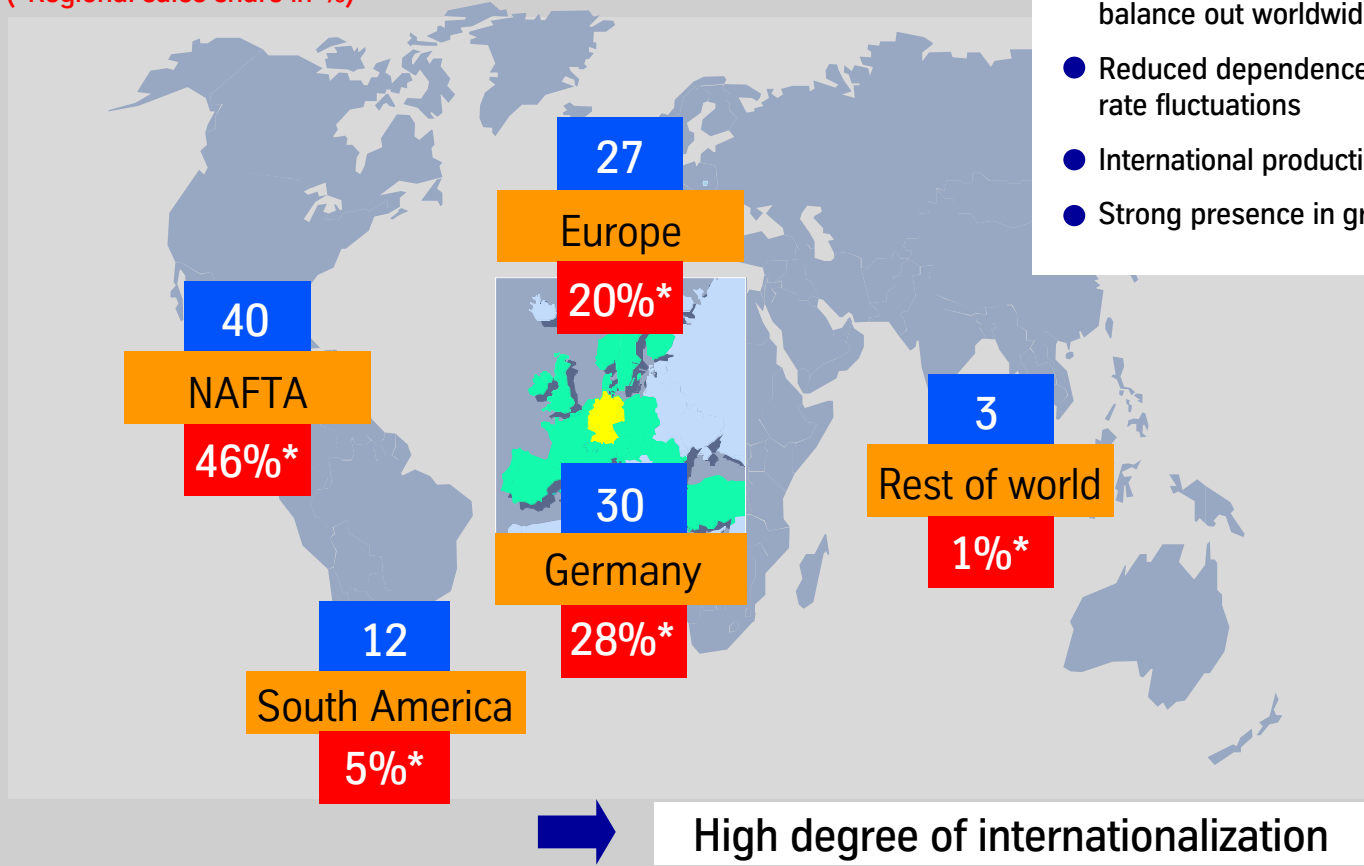
- Plant and process planning
- Investment and site sharing
- Supplier integration
- Quality management

 Increased service share in sales



# Close to customers worldwide

(\*Regional sales share in %)

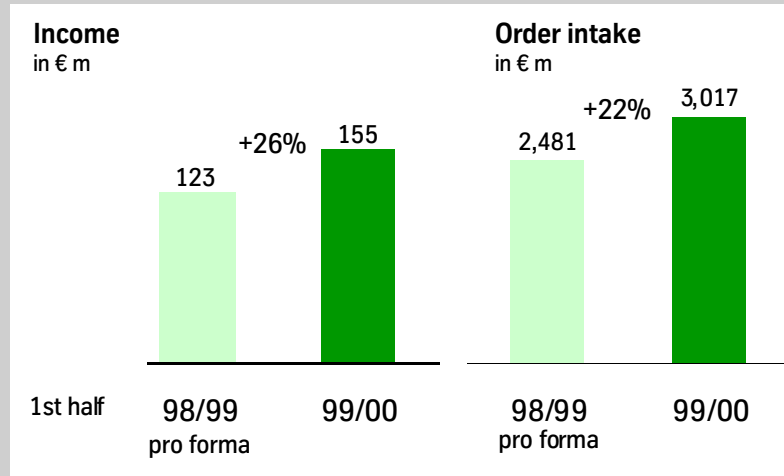
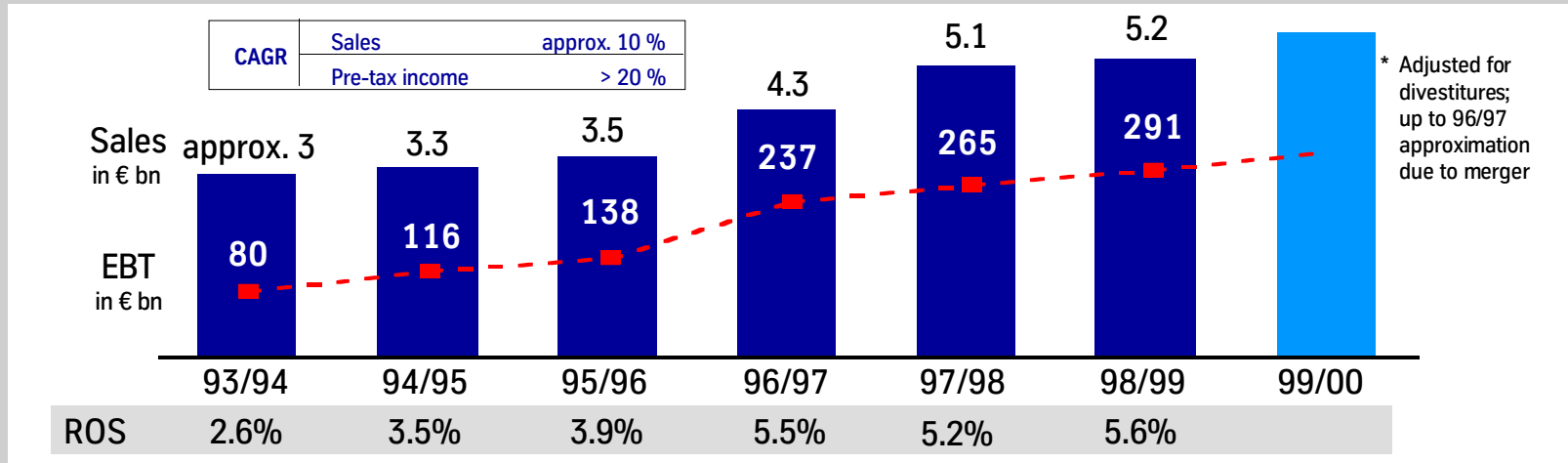


- 112 production locations worldwide close to customers
- Regional demand differences balance out worldwide
- Reduced dependence on exchange rate fluctuations
- International production network
- Strong presence in growth markets

(as per April 2000)



# ThyssenKrupp Automotive: The value of competence



- Faster-than-market sales growth
- ThyssenKrupp Automotive countered price pressure from automobile industry with rationalization advances (e.g. new technologies)
- Continuous value enhancement process



# OEM environment

## Aims of global OEM mergers

- Economies of scale and synergy effects in R&D, purchasing, production and sales
- Complete product ranges and brand portfolios to cover all market segments and market niches
- Platform and component sharing strategies
- Global presence to develop new sales regions and regional growth markets

## Concentration process of car manufacturers

2000

15 independent car makers

General Motors group  
DaimlerChrysler/Mitsubishi  
Ford group  
Toyota/Daihatsu  
Renault/Nissan  
VW group

Fiat  
Honda  
Peugeot, Citroen (PSA)  
BMW  
Porsche  
Daewoo  
Hyundai  
Fuji Heavy (Subaru)  
Suzuki

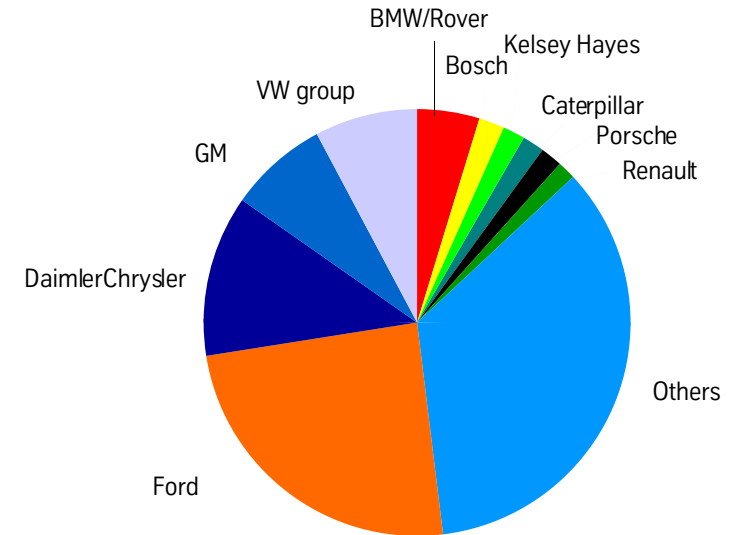
2008

7-8 independent car makers

General Motors group  
DaimlerChrysler/Mitsubishi  
Ford group  
Toyota/Daihatsu  
Renault/Nissan  
VW group

?  
?

## Major customers of ThyssenKrupp Automotive



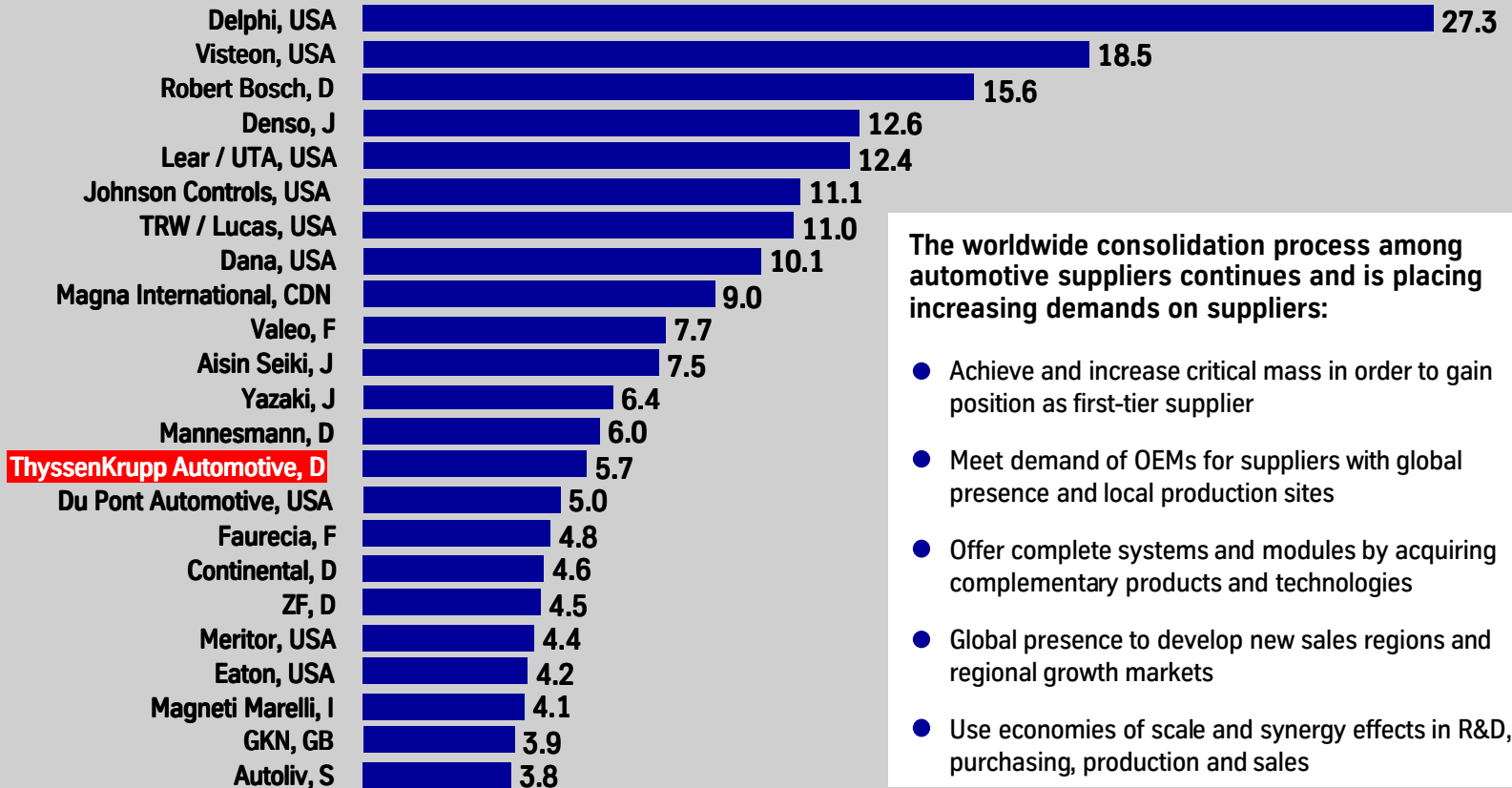
ThyssenKrupp Automotive realizes 2/3 of its sales with its 10 biggest customers (1998/99)



# Supplier environment

## Competition among automotive suppliers\*

USD in billions 1998/99



The worldwide consolidation process among automotive suppliers continues and is placing increasing demands on suppliers:

- Achieve and increase critical mass in order to gain position as first-tier supplier
- Meet demand of OEMs for suppliers with global presence and local production sites
- Offer complete systems and modules by acquiring complementary products and technologies
- Global presence to develop new sales regions and regional growth markets
- Use economies of scale and synergy effects in R&D, purchasing, production and sales

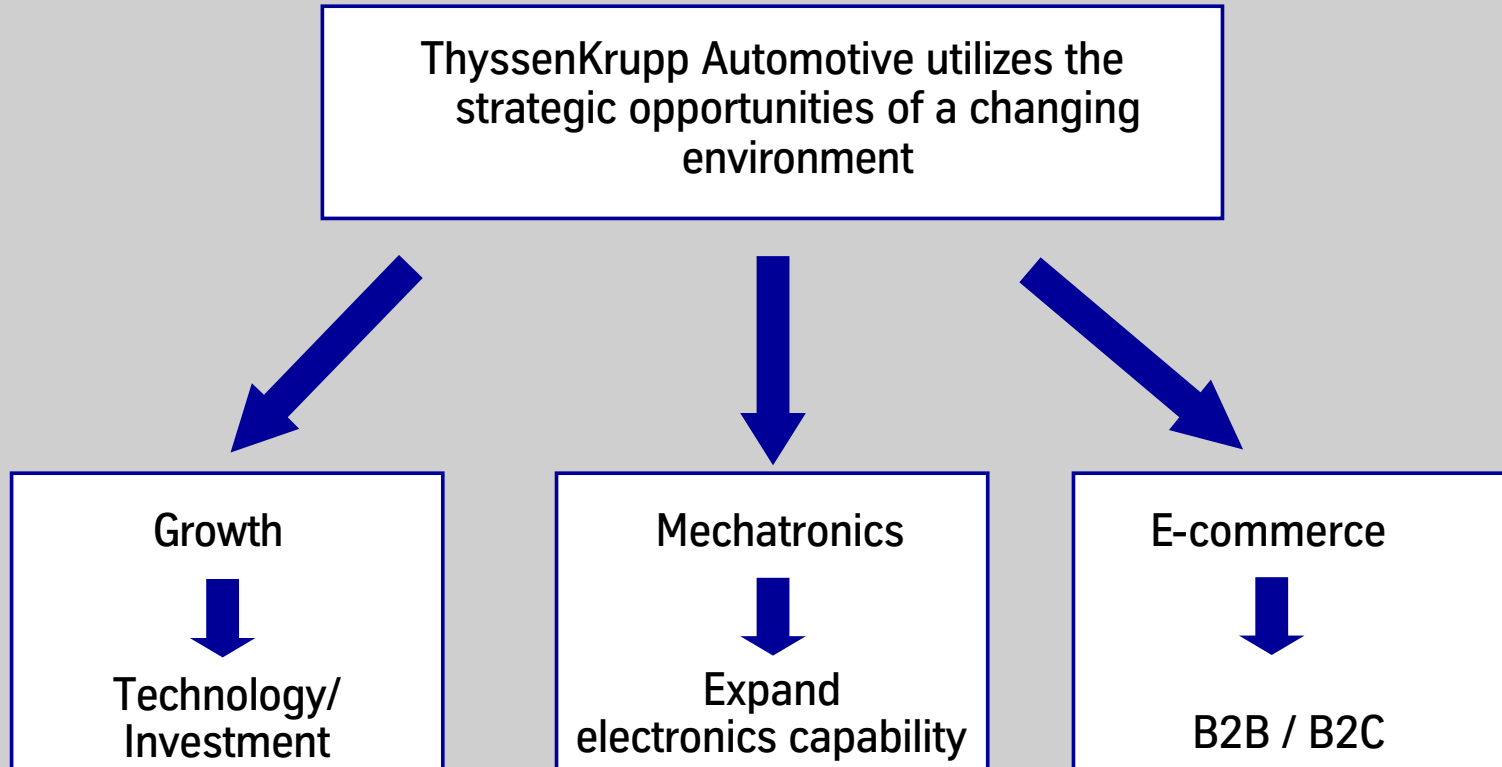
Source: Automotive News, March 27, 2000

\*excl. tire manufacturers / excl. tire share of sales

ThyssenKrupp Automotive

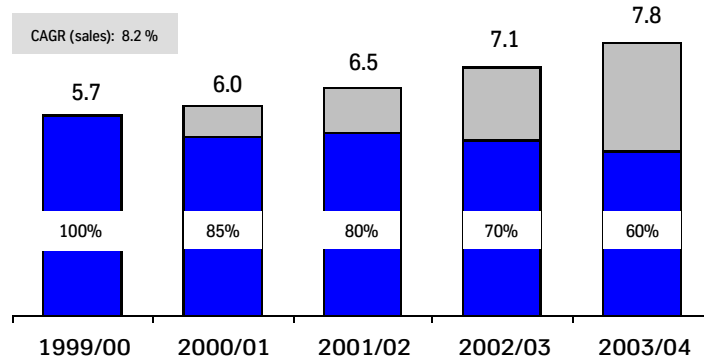


# Strategic approach



# Growth offensive

## Share of sales already secured by supply agreements - in € bn -



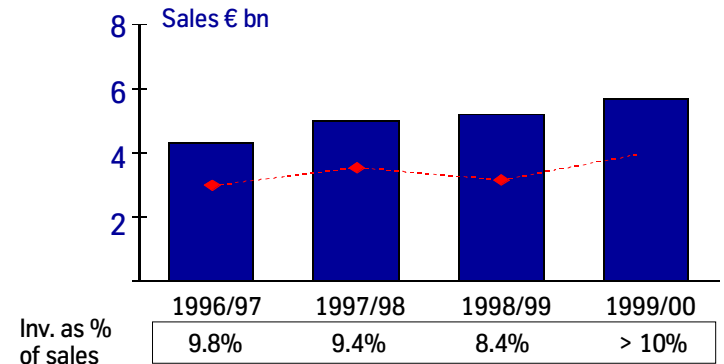
## Internal and external growth

- Planned sales increase to €8 bn by 2003/04 by organic growth (CAGR of 8%)
- Internal growth backed by order-related investment (80%)
- Further external growth to €10 bn

## Growth areas

- Further expansion of core businesses to strengthen TOP positions
- Expansion of systems business/systems engineering
- Further expansion of presence in Asia and South America

## Investment



Average investment = 10% of sales



# Growth drivers

## Growth with product innovations/technologies

- |   |  |                            |
|---|--|----------------------------|
| ● Air suspension system   | improved ride comfort and weight advantage | DC S and E Class           |
| ● Steering systems, in future with electric power-assisted steering | fuel saving                                | VW/AUDI/ Renault           |
| ● Hydroformed frame   | improved ride comfort                      | GM SUV                     |
| ● Aluminum body panels  | weight reduction                           | DaimlerChrysler, BMW, Ford |
| ● Side impact beams   | high-strength steel                        | BMW 3 + 5 series           |
| ● Control blade   | ultralight welded structure                | Ford Focus                 |
| ● SMC pick-up box cover   | folding plastic cover                      | Ford Sport Track           |
| ● Low-density SMC   | as light as aluminum                       | Chevrolet Corvette         |
| ● Truck cab suspension  | improved design with cost advantages       | VOLVO/Iveco                |
| ● Camshafts, in future with variable valve timing                   | improved exhaust emission values           | Ford/VW                    |

## Growth with new vehicle models

- By 2002 more than 250 new vehicle models will be introduced on the market
- ThyssenKrupp Automotive already has supply agreements for various products for one in two models

## Growth through outsourcing by OEMs

- Crankshaft machining (e.g. Cummins)
- Complete front and rear axles for all Porsche models
- Corner modules (e.g. for Rover Freelander)
- Rear axle drive module for MCC smart
- Body panels for BMW
- SMC pick-up box for Ford



# Growth drivers

## Investment in new production facilities

|        | <b>Company</b>  | <b>Products</b>  | <b>Location</b>  |
|--------|---|--|--|
| ● 2000 | Krupp Drauz<br>Krupp Fabco<br>BV Chassis Systems (JV)<br>Stahl Specialty<br>Waupaca, plant 6<br>Krupp Presta<br>Krupp Presta<br>Krupp Presta<br>p.a.d.  | Door pillars<br>Body stampings<br>Complete axle modules<br>Aluminum castings<br>Castings<br>Camshaft extension<br>Steering columns<br>Complete cylinder heads<br>Engineering office                                    | Meerane (D)<br>Springfield (USA)<br>Troy (USA)<br>Missouri (USA)<br>Tennessee (USA)<br>Ilseburg (D)<br>Shanghai (China)<br>USA<br>Neckarsulm (D)   |
| ● 1999 | Waupaca, plant 5<br>TKA Atlas<br>Krupp Presta<br>Krupp Presta<br>Krupp JBM (JV)<br>Krupp Automotive Systems<br>Budd Tallent<br>Aventec (JV)<br>Krupp Modulos Automotivos do Brasil (JV)<br>Krupp Presta do Brasil<br>Krupp Presta do Brasil<br>TBA Juiz de Fora | Castings<br>Crankshafts/camshafts<br>Camshafts<br>Steering columns<br>Subframes<br>Cab suspensions<br>Chassis components<br>Outer panels<br>Axle modules<br>Steering columns<br>Steering systems<br>Chassis components | Tell City (USA)<br>Fostoria (USA)<br>Danville (USA)<br>Danville (USA)<br>Madras (IND)<br>Werdohl (D)<br>Hopkinsville (USA)<br>Silao (MEX)<br>Curitiba (BR)<br>Curitiba (BR)<br>Ibirité (BR)<br>Juiz de Fora (BR) |



# Growth drivers

| Technological trends  | Position TKA  | Technological trends   | TKA position   |
|---|---|--|--|
| <ul style="list-style-type: none"> <li>■ <b>Weight reduction</b> <ul style="list-style-type: none"> <li>■ Material substitution               <ul style="list-style-type: none"> <li>- Steel</li> <li>- Aluminum</li> <li>- Magnesium</li> <li>- Plastics</li> </ul> </li> <li>■ Hydroforming</li> <li>■ Electronically controlled suspensions based on air spring systems and adjustable shocks; electronically controlled stabilizers</li> <li>■ Expansion of systems and modules into new applications, e.g. complete cylinder head modules for engines, complete doors</li> </ul> </li> </ul> | <ul style="list-style-type: none"> <li>• TKA supplier with full range of materials</li> <li>• Increasing use of aluminum and plastics in Body and Chassis</li> <li>• TKA leading position</li> <li>• TKA market leader with Krupp Automotive Systems and Krupp Bilstein</li> <li>• TKA leading position with Krupp Automotive Systems and TKA Budd Systems</li> </ul> | <ul style="list-style-type: none"> <li>■ <b>Powertrain / Steering</b> <ul style="list-style-type: none"> <li>■ Engine               <ul style="list-style-type: none"> <li>- Improvements to IC engines with direct injection for gasoline and diesel engines, new cat technology</li> <li>- Reduced costs and emissions through lower consumption</li> </ul> </li> <li>- Variable valve timing</li> <li>■ Steering               <ul style="list-style-type: none"> <li>- Introduction of electric/electronic power assist systems</li> </ul> </li> </ul> </li> </ul> | <ul style="list-style-type: none"> <li>• High added demand for TKA products</li> <li>• TKA world market leader in forged crankshafts for high-compression engines</li> <li>• TKA offers latest patented technology</li> <li>• TKA developing new advanced systems</li> </ul> |



# Mechatronics

- Expansion of tier one position with systems leadership requires full range of systems engineering, mechanical and electronic components
- ThyssenKrupp Automotive has strong mechanical and engineering capabilities in components/modules and systems as well as interface expertise for electronics



ThyssenKrupp Automotive will strengthen and expand its system leader capabilities by adding electronics capabilities



Example: Air suspension for the DaimlerChrysler S-Class



# e-commerce at ThyssenKrupp Automotive

## General goals of e-commerce

- Create new information channels
- Speed up business
- Improved communication between business partners
- Innovative and effective buying and selling processes
- Cost reductions
- Increase up-to-dateness and transparency

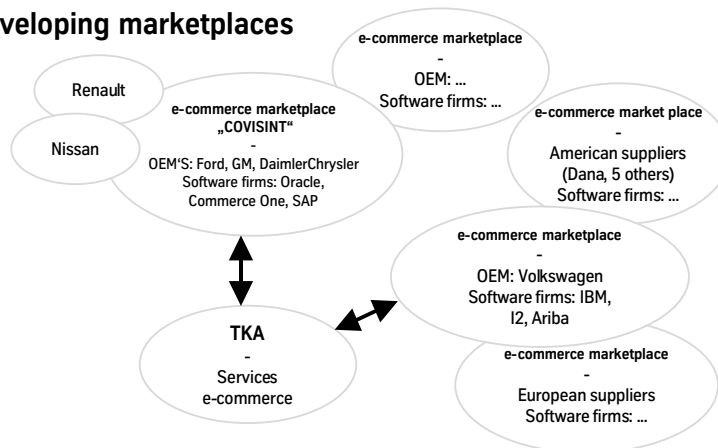
## Auto industry expectations of e-commerce

Revolutionize core processes:

- Minimize transaction costs
- Reduce coordination costs
- Improved complexity management
- Increased process speed

➡ Improvements in quality, delivery and cost

## Developing marketplaces



## Consequences for ThyssenKrupp Automotive

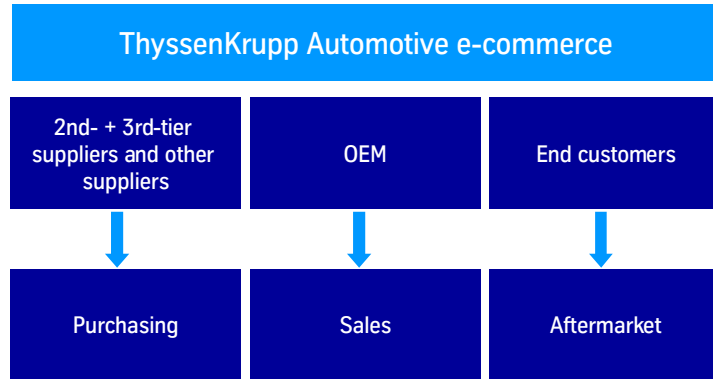
- Considerable process simplifications above all through standardized marketplaces
- Technical conditions for data exchange can be created
- Online auctions not suitable for systems and high-tech products

➡ Opportunities outweigh any risks



# e-commerce at ThyssenKrupp Automotive

## ThyssenKrupp Automotive action areas



## Best Practice: Purchasing

Example: The Budd Company

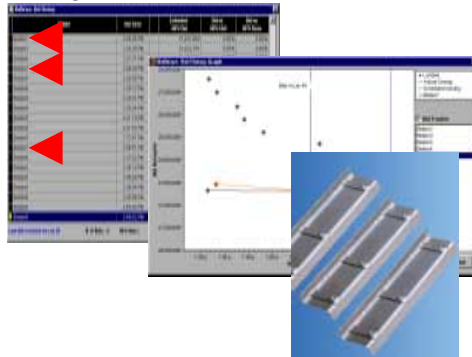
Purchasing of standard materials via online agency "Free-Markets" to achieve simplifications and cost savings:

- Reduced real costs (purchasing prices)
- Reduced transaction costs
- Increased process efficiency (order changes, faster delivery, etc.)

## Best Practice: Selling (OEM)

Example: Electronic Sourcing - at FABCO

- FABCO in small group of GM suppliers
- FABCO selected due to good ratings for quality and delivery
- FABCO offers GM simple stampings



## Best Practice: Direct selling to aftermarket

Example: Krupp Bilstein

- Goals:
- Increase sales
  - Workshops order direct via internet
  - Retain customers through full service
  - Flexibility and speed in distribution

- Service Packages:
- Price and delivery information
  - Order management (integration in Bilstein's goods management system)
  - Hotline and advice
  - "Track and trace" parcel monitoring
  - Claim management
  - Training



## Strategic outlook

- Double sales to €10 bn by 2003/04 through organic growth and acquisitions
- Expand core businesses to achieve/strengthen number 1 positions worldwide
- Develop/expand electronics and engineering capabilities
- Boost services share of sales
- Drive use of e-commerce



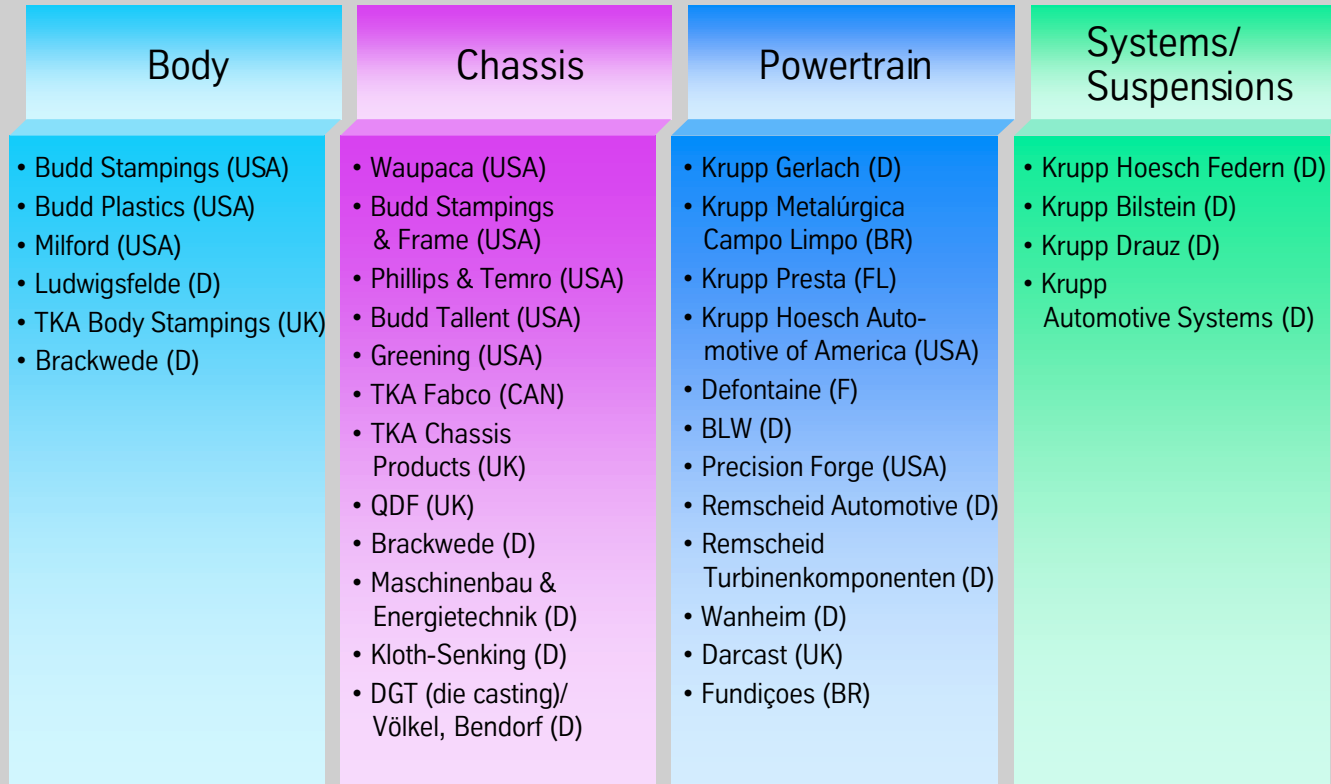
ThyssenKrupp Automotive on a growth track with:

- high growth
- high earning power
- innovative products
- strong international presence

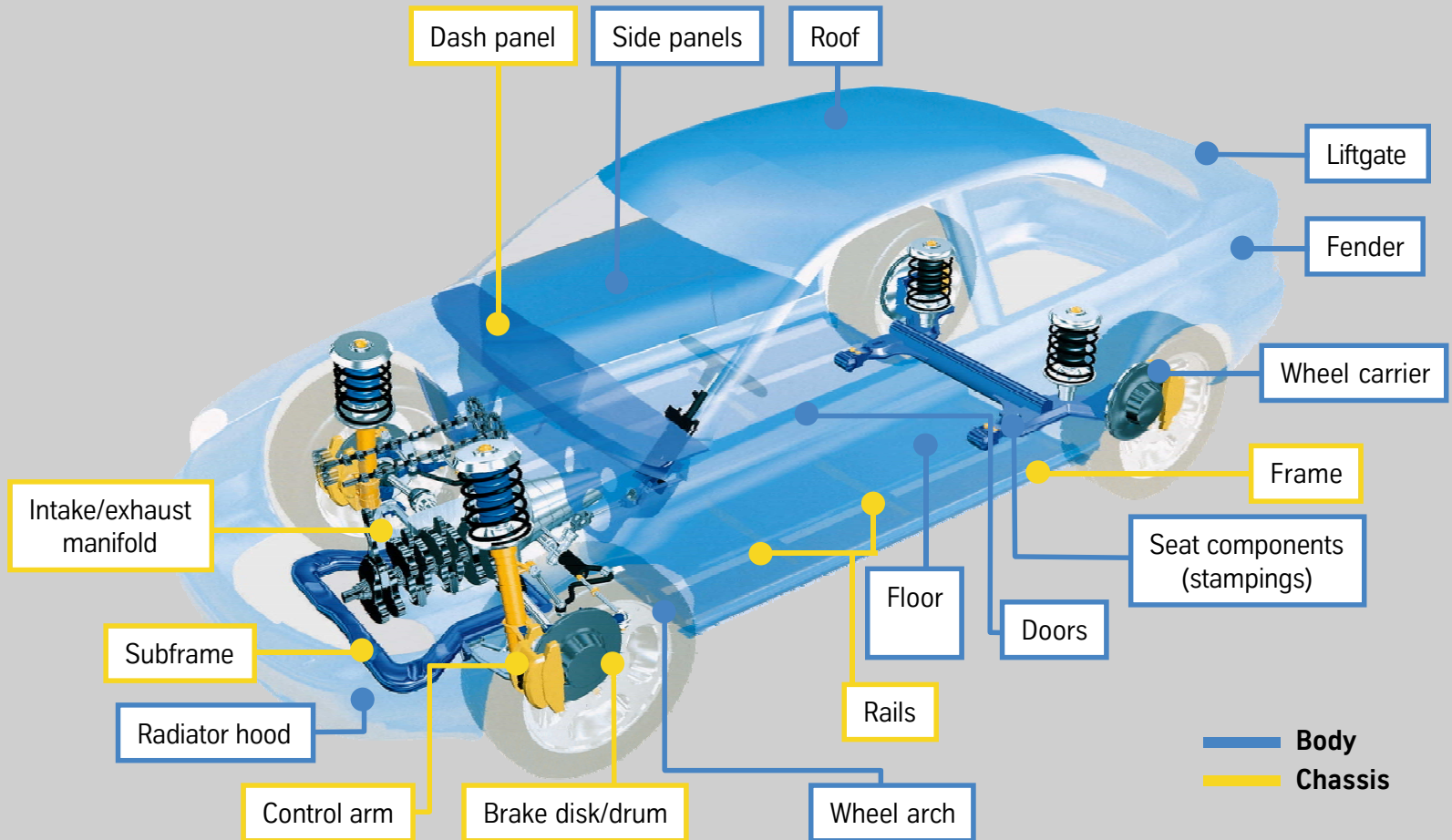


# ThyssenKrupp Automotive

## Organization of companies/plants



# Capabilities in Automotive Components, modules, systems



# Business Unit Body



## Main products

Doors  
Closures (hoods, liftgates)  
Side panels  
Roof panels  
Body assemblies  
Prototypes  
Tooling

## Processes

### Forming

Stamping  
Hydroforming  
Calibrating

### Joining

Adhesive bonding  
Clinching  
Welding

### Painting

### Machining

## Materials

### Steel

coated  
high-strength  
stainless  
sandwich  
tailored blanks

### Aluminum

sheet

### Plastics

SMC  
Thermosetts  
Thermoplastics



# Body

## Market leadership through top positions

| Body                      | North America   |              | Main competitors *        |
|---------------------------|-----------------|--------------|---------------------------|
|                           | Market position | Market share |                           |
| - Outer panels - steel    | 1               | >40 %        | Magna, Ogihara            |
| - Outer panels - plastic  | 1               | >40 %        | Cambridge, Venture-Bailey |
| - Outer panels - aluminum | 1               | <90 %        | OEM's                     |

Major customers (examples):

Ford, DaimlerChrysler, BMW, GM, Honda, VW, Toyota, Johnson Controls, Autoliv, Webasto

\* excl. in-house and captives

## Strategy Body

1. Systematically extend market leadership in outer body panels in North America and establish a global presence
2. Further expand materials capabilities:
  - Aluminum and magnesium for weight reduction reasons
  - New product development based on know-how combination in high-strength steel with Thyssen Krupp Stahl
  - Low-density SMC solutions for plastic composite products through in-house materials base
3. Technological leader in design and production of hybrid outer panels (steel, aluminum, magnesium, plastic)

## New products - Body

- TKA worldwide know-how leader in outer panels and body assemblies with all relevant materials
- Steel:
  - Outer panels and assemblies using advanced steels and composite technologies
  - Safety-related products e.g. side impact beams made of high-strength steel
- Aluminum:
  - Strong growth in aluminum outer panels for weight reduction reasons: both in high-volume (Ford Explorer) and low-volume cars (BMW Z8)
- Plastics (SMC):
  - TKA leading position in outer skin stampings and assemblies using advanced composite technologies, new materials for further weight reduction (low-density SMC) with strong growth potential for weight reasons
- Development of "Modular Door" with material combinations (steel, aluminum, magnesium, SMC)



# Body

## TUG Brackwede - (D)

- Vehicle:
  - BMW series
- Products:
  - side impact beam of high-strength steel (1200 N/mm<sup>2</sup>)
- Weight reduction: 20%
- Cost reduction 15%



## Milford Fabricating, Detroit MI, USA

Collaboration with Ford on prototype for the P2000 aluminum program



## Budd Plastics Division - (USA)



SMC\* Pickup Box for Ford Sport Trac

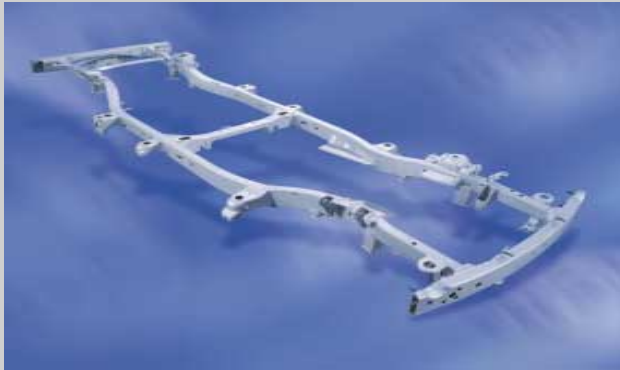
- Compared with steel only one molding
- Weight reduction 30%



\*Sheet-Molded Composites



# Business Unit Chassis



## Main products

Complete frames  
 Cross members  
 Front and rear subframes  
 Axle assemblies  
 Iron, steel, magnesium and aluminum castings  
 Truck side rails  
 Prototypes  
 Tooling

## Processes

### Forming

Stamping  
 Hydroforming  
 Calibrating  
 Forging  
 Casting  
 Sintering

### Joining

Adhesive bonding  
 Clinching  
 Welding

### Painting

### Machining

## Materials

### Steel

coated  
 high-strength  
 stainless  
 sandwich  
 tailored blanks

### Aluminum

sheet  
 die cast

### Magnesium

### Ductile iron

### Grey iron



# Chassis

## Market leadership through top positions

| Chassis                      | World           |              | North America   |              | Main competitors *              |
|------------------------------|-----------------|--------------|-----------------|--------------|---------------------------------|
|                              | Market position | Market share | Market position | Market share |                                 |
| - Complete frames            | 3/4             | >10%         |                 |              | Tower, Dana, Magna              |
| - Cast brake parts           |                 |              | 1               | >40 %        | Teksid, Intermet                |
| - Prototype development      |                 |              | 1               | >10 %        | Troy Design, Modern Prototyping |
| - Cold weather starting aids |                 |              | 1               | <40 %        | Beru, Philipps Industries       |

Major customers (examples):  
GM, DaimlerChrysler, Ford, BMW, Kelsay Hayes, Nissan, Hydraulics,  
Dayton Walther, Webb Wheel

\* excl. in-house and captives

## New products - Chassis

- In the Chassis business TKA has engineering and process capabilities in full-size frames, subframes, control arms and cross members. Development results are confirmed by simulation programs and verified in in-house test centers, giving the capability for customerspecific new developments.
- Using new welded designs TKA has substituted various individual parts made of different materials and by different processes, e.g. control blades.

## Strategy Chassis

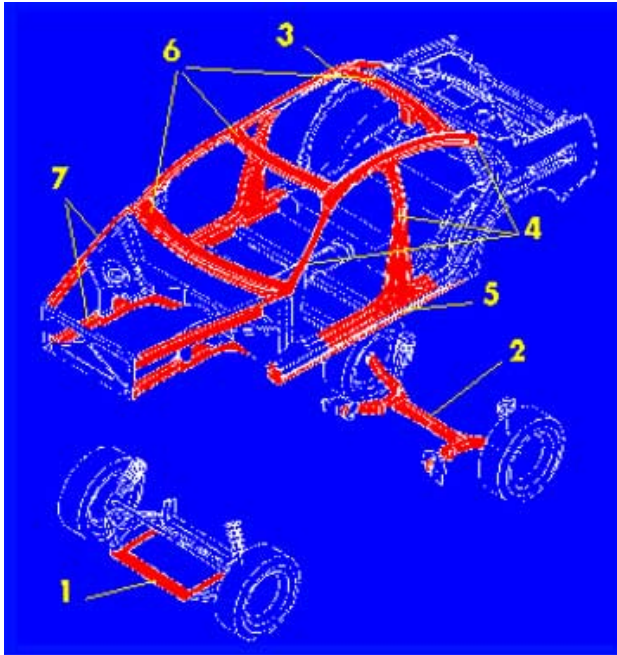
1. Systematically expand worldwide component and module business
2. Develop technological/process innovations and new materials
  - customer-specific new developments in in-house test centers (example: hydroformed subframes)
  - substitutability of various materials and processes (example: control blade)
3. Exploit further growth opportunities by increasing presence in growth markets

## BMW 5 series side sill



# Hydroforming

## Examples of hydroformed parts



- |                   |                   |
|-------------------|-------------------|
| 1 Subframe        | 5 Sill            |
| 2 Rear axle beam  | 6 Roof side beam  |
| 3 Roof cross beam | 7 Front side beam |
| 4 Pillars         |                   |

## Chassis

TUG Chassis - Tallent/Camford (UK)



- Vehicles:
  - Opel Vectra
  - Ford Mondeo
- Product:
  - Hydroformed subframe

# Chassis

## Thyssen Umformtechnik + Guss, Brackwede

Mercedes A-Class  
A-subframe



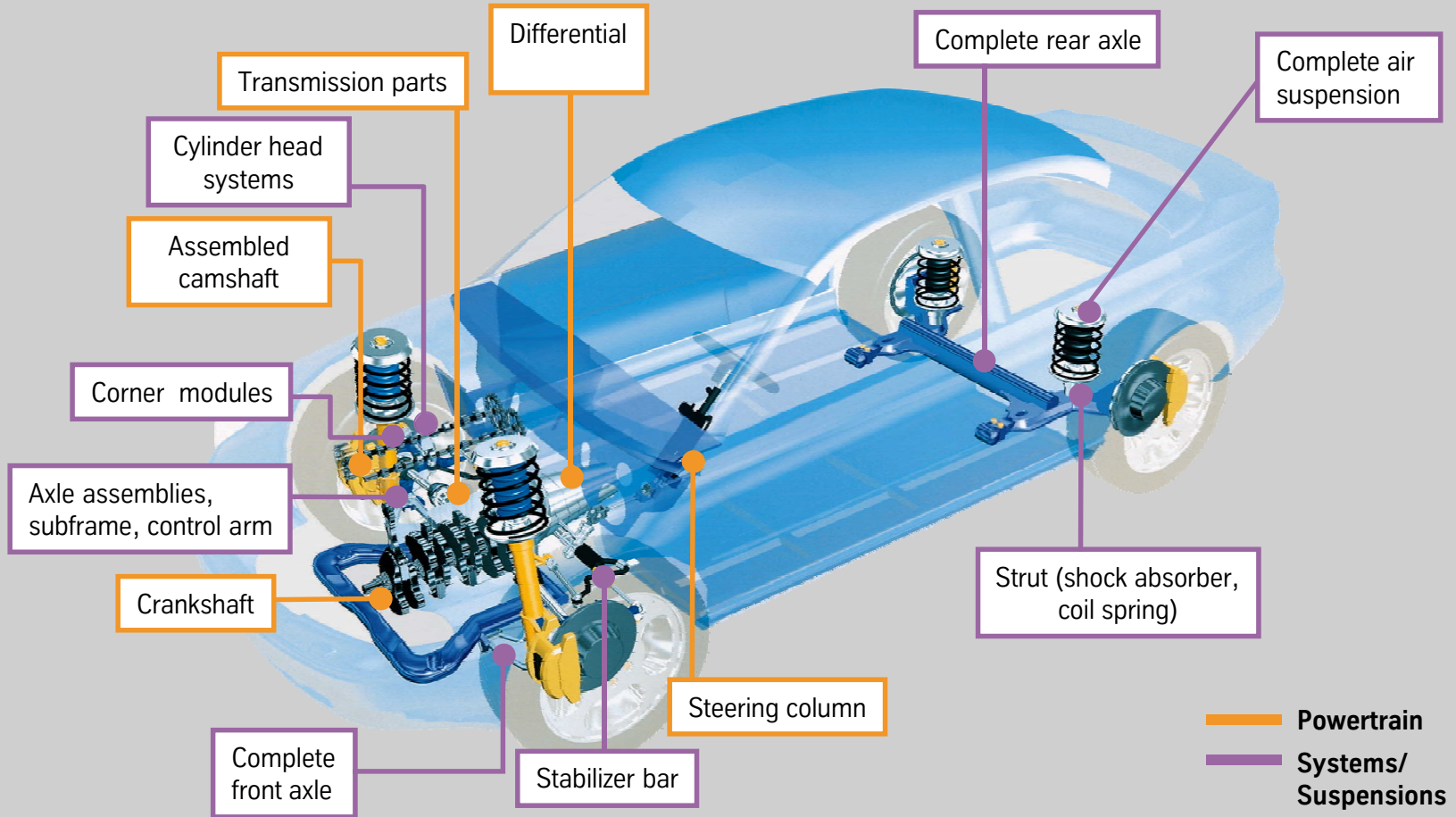
Renault Twingo  
Rear axle



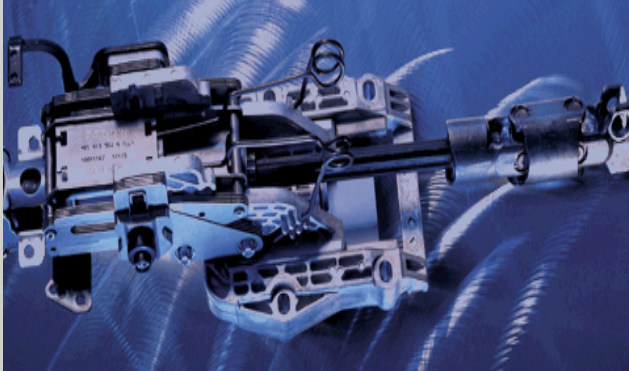
Ford Focus  
Control blade



# Capabilities in Automotive Components, modules, systems



# Business Unit Powertrain



## Main products

Crankshafts (forged and cast)  
 Camshafts  
 Steering columns, steering shafts, complete steering systems  
 Bevel gears, speed gears, synchronizers for differentials, manual and automatic gearboxes  
 Cold forged powertrain and steering components  
 Powder metal parts and starter components

## Processes

### Forming

Die casting  
 Permanent mold casting  
 Sand casting  
 Roll forming  
 Shell casting

### Forging

Drop forging  
 Precision forging  
 Cold forging

### Sintering

### Machining

Welding  
 Friction welding

### Assembly

## Materials

### Steel

high-strength  
 forging steel

### Gray iron

### Ductile iron

### Aluminum

### Magnesium

### Powder metal



# Powertrain

## Market leadership through top positions

| Powertrain            | World           |              | Main competitors *         |
|-----------------------|-----------------|--------------|----------------------------|
|                       | Market position | Market share |                            |
| - Crankshafts         | 1               | <30%         | Sumitomo, Louisville Forge |
| - Assembled camshafts | 1               | >80%         | Nippon Piston Ring, Sico   |
| - Steering columns    | 1/2             | ≈20%         | ZF, Nastec/Torrington      |
| - Precision forgings  | 1               | >10%         | Gevelot, Masco             |

Major customers (examples):

Ford, VW, DaimlerChrysler, Cummins, Caterpillar, DDC, BMW, Renault, GM, Dana

\* excl. in-house and captives

## Strategy Powertrain

- Develop business with ready-to-install engine components - machined and preassembled
- Expand business through new technologies such as variable valve timing and alternative joining processes
- In steering, further expand technological leadership

## New products - Powertrain

- TKA is pioneering the trend toward lightweight steering columns through to electrically adjustable steering columns. Development capabilities for complete steering columns in crashsafe design. Latest TKA product is an electric power-assisted steering column (EPAS) which allows fuel savings of approx. 9% versus previous power-assisted steering systems.
- TKA's patented assembled camshafts are used in an increasing number of engines.
- Engines can be further optimized by variable valve timing. TKA is developing a patented adjustable camshaft which allows variable valve timing.
- TKA already supplies ready-to-install precision-forged bevel gears, to be followed in the near future by complete differentials.
- TKA produces load-optimized forged crankshafts to satisfy the trend toward high-compression gasoline and diesel engines with higher performance and lower consumption.

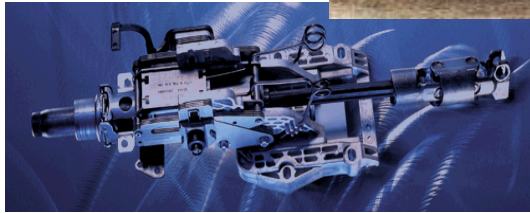


# Powertrain

## Krupp Presta

Steering column Audi A4 and A6

New crash-optimized design, crash sled made of magnesium



## Krupp Presta

- Vehicles:
  - Development project
- Product:
  - EPAS (Electric Power Assisted Steering)



## Krupp Presta



Newly developed camshaft adjuster

## Krupp Gerlach / KMCL / Thyssen Umformtechnik + Guss



DaimlerChrysler C-class



Ready-to-install machined crankshafts



# Business Unit Systems/Suspensions



## Main products

Chassis, steering and engine systems

- complete axles
- air suspension systems
- truck systems
- cylinder head systems

Shock absorbers  
 Springs and stabilizer bars  
 Welding and assembly lines  
 Prototypes  
 Tools, jigs and fixtures

## Processes

### Forming

Stamping  
 Hydroforming  
 Calibrating

### Joining

Bonding  
 Clinching  
 Welding

### Painting

### Hot and cold coiling

### Bending

### Machining and assembly

## Materials

### Steel

high-strength  
 tool steel  
 spring steel  
 tailored blanks

### Aluminum

### Magnesium



# Systems/Suspensions

## Market leadership through top positions

| Systems/Suspensions      | World           |              | Main Competitors *    |
|--------------------------|-----------------|--------------|-----------------------|
|                          | Market position | Market share |                       |
| - Axles/complete chassis | 2               | 20%          | Benteler, Tower, Dana |
| - Springs (car/truck)    | 1               | 20%          | NHK, Rejna            |
| - Air suspension (cars)  | 1               | >70%         | Contitech             |
| - Truck cab suspension   | 1               | >30%         | still with OEMs       |

Major customers (examples):  
DaimlerChrysler, VW, GM, Porsche, Ford, BMW, Volvo, Fiat/Iveco, MAN/Steyr, Renault

\* excl. in-house and captives

## Strategy Systems/Suspensions

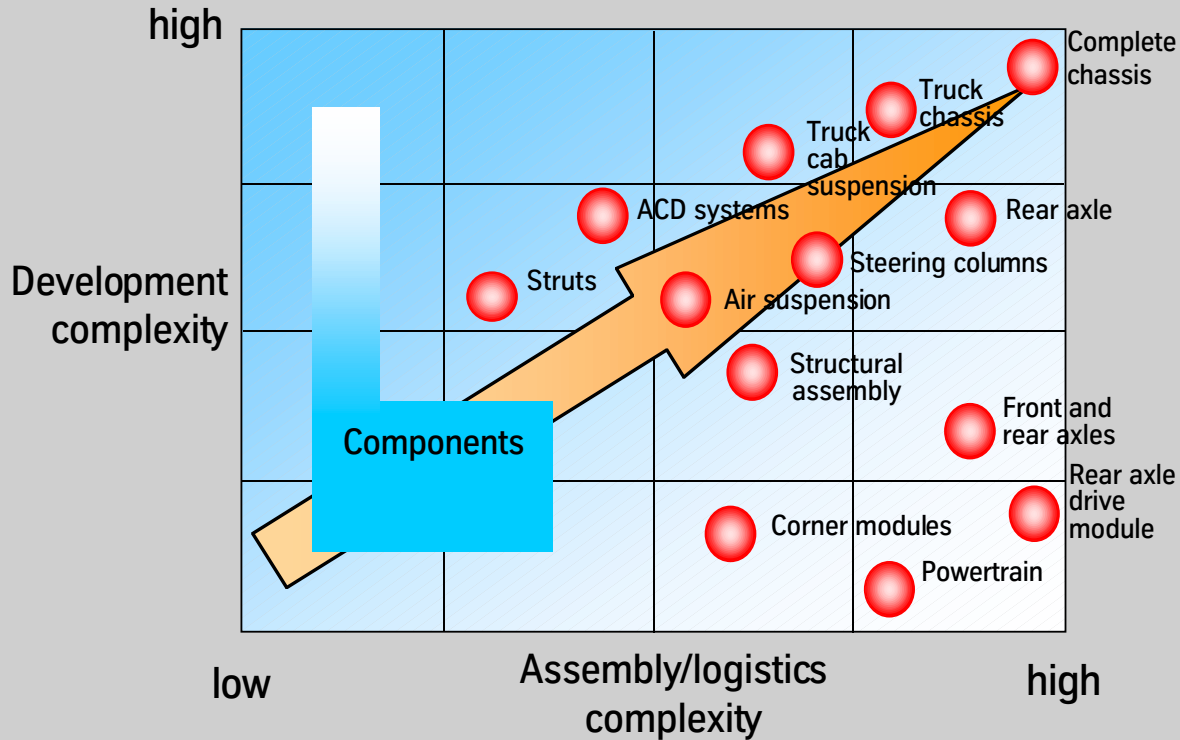
- Establish business with complete cylinder heads
- Expand electronics capabilities for chassis, air suspension and steering systems
- Develop spring/shock absorber systems further and expand position as market and technology leader
- Increase aftermarket business for shock absorbers through use of e-commerce
- Expand market position for springs in NAFTA and Asia

## New products - Systems/Suspensions

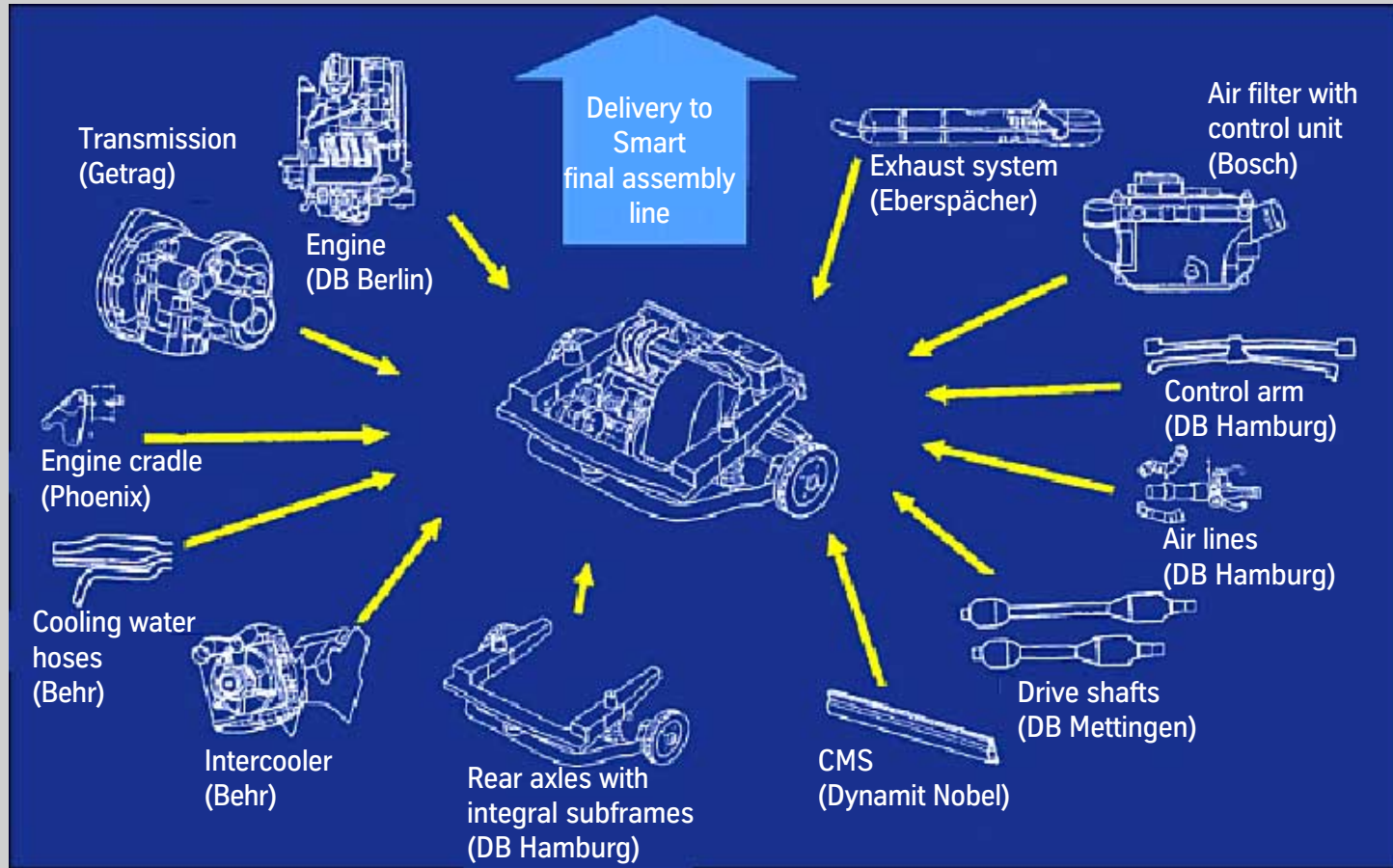
- TKA is a volume supplier of air suspension systems for the DaimlerChrysler S-class and has been awarded orders for other air spring systems. As systems leader, TKA assumes overall system project responsibility; manufacturers of electronic equipment and rubber bellows are partners under TKA's lead.
- TKA is currently developing an active stabilizer bar for an auto manufacturer in southern Germany.
- TKA has developed a new truck cab suspension system for which initial orders have been received. The system utilizes TKA's patented magnet arc welding technology.
- TKA has evolved into a leading service provider for axle systems, offering not just assembly but also logistics, scheduling, purchasing etc. TKA is currently developing several axle systems in collaboration with various auto manufacturers.



# Components, modules and systems



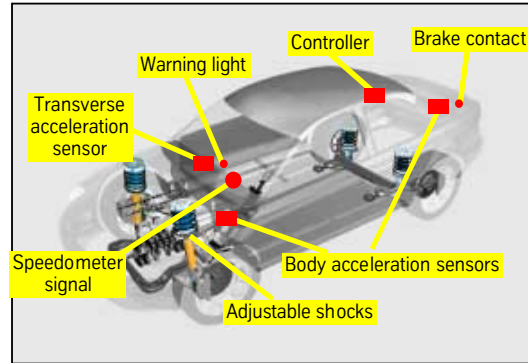
# Rear axle drive module MCC smart



# Systems/Suspensions

## Krupp Bilstein, Ennepetal

### Active Controlled Damping



ACD system for Jaguar



## Krupp Automotive Systems, Krupp Bilstein



Air suspension system  
DaimlerChrysler  
S-class



## Krupp Hoesch Federn

- Vehicles:
  - BMW 7 series
- Products:
  - active stabilizer bar



# Systems/Suspensions

## Krupp Módulos Automotivos do Brasil, Curitiba



Axles for  
VW PQ 34



## Krupp Automotive Systems



Cab suspension



## Krupp Drauz, Heilbronn



Body-in-white "floor"  
line for the Audi A2

