

World Investment Casting Market Review

EICF Conference

Bilbao, Spain

May 2006

Agenda

- World Market Overview
 - Europe & North America - Richard Hirst
 - China - Dr Zhigang Lu
 - Japan/Taiwan/Korea – Junichi Take-Uchi
 - India – Kishan Gohil
- Other regions
- Discussion

Acknowledgements

The data used for this presentation has been provided by the following organisations, whose help and contribution is gratefully appreciated :

CAEF (Casting Association of European Foundries)

cmf (Cast Metals Federation)

EICF (European Investment Casting Federation)

ICI (Investment Casting Institute - United States)

CFA (China Foundry Association)

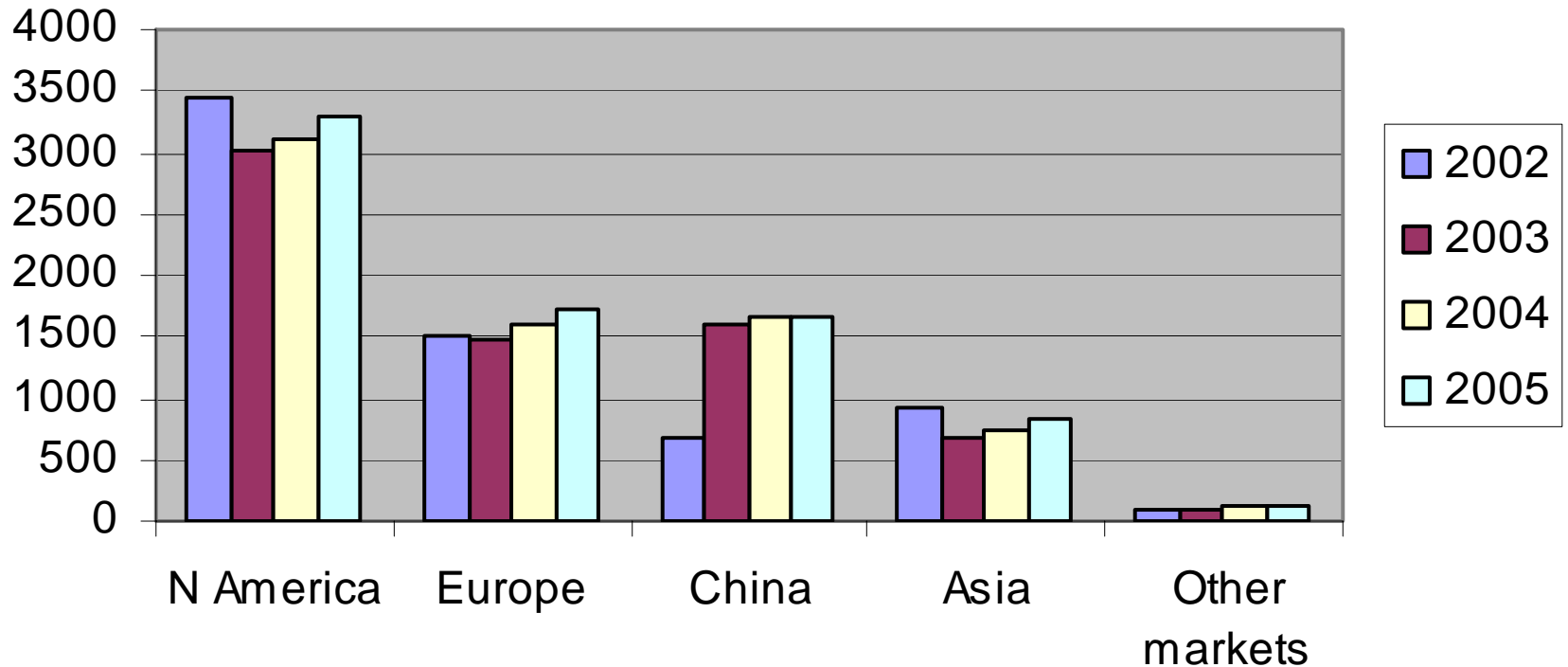
JFS (Japan Foundry Society)

Global Investment Casting Sales – 2005

- 2005 total World sales US\$7,610M (US\$7.6B)
 - + 5.2% v 2004
- N America remains the largest single producer
 - market share falling and sales still below 2002
- Europe demonstrating good sales growth following recovery since 2002
 - led by strong aerospace performance
- European and Chinese market shares now equal
 - total Asian sales now 33% world total

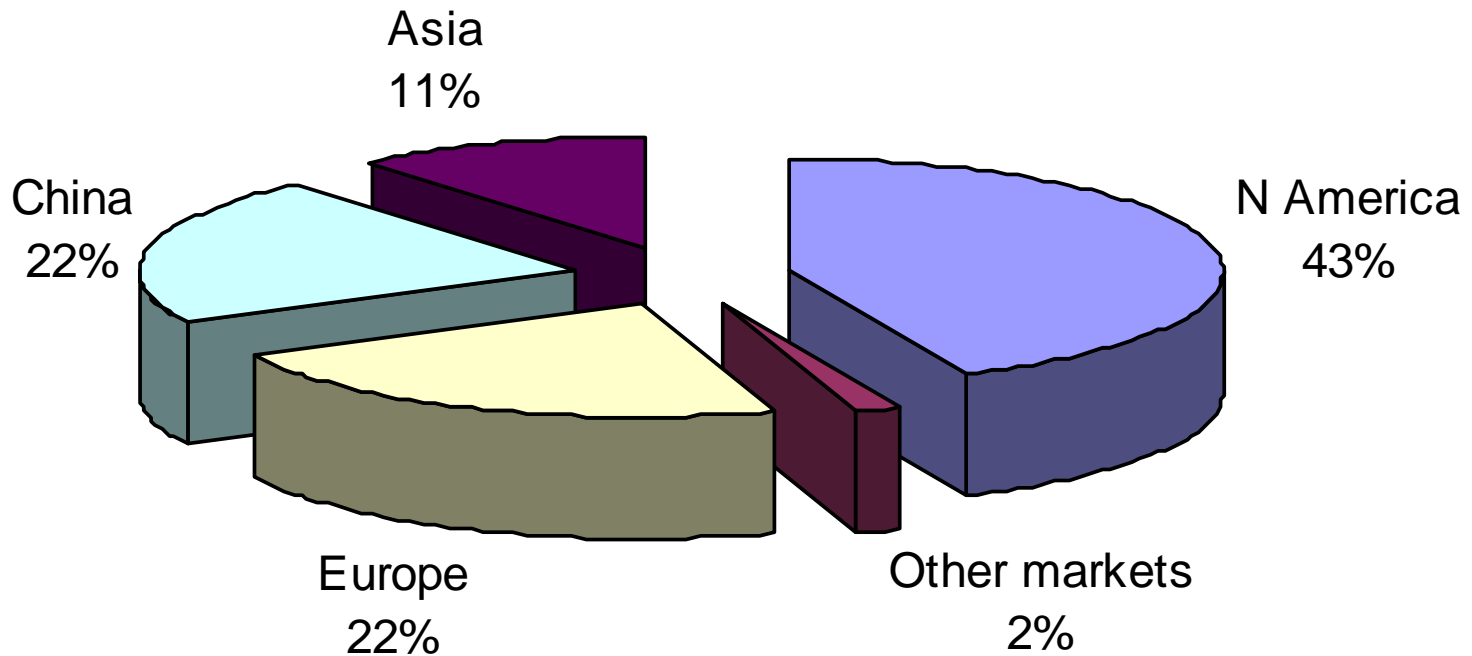
Sales by Region 2002 - 2005

Regional Sales, U\$M

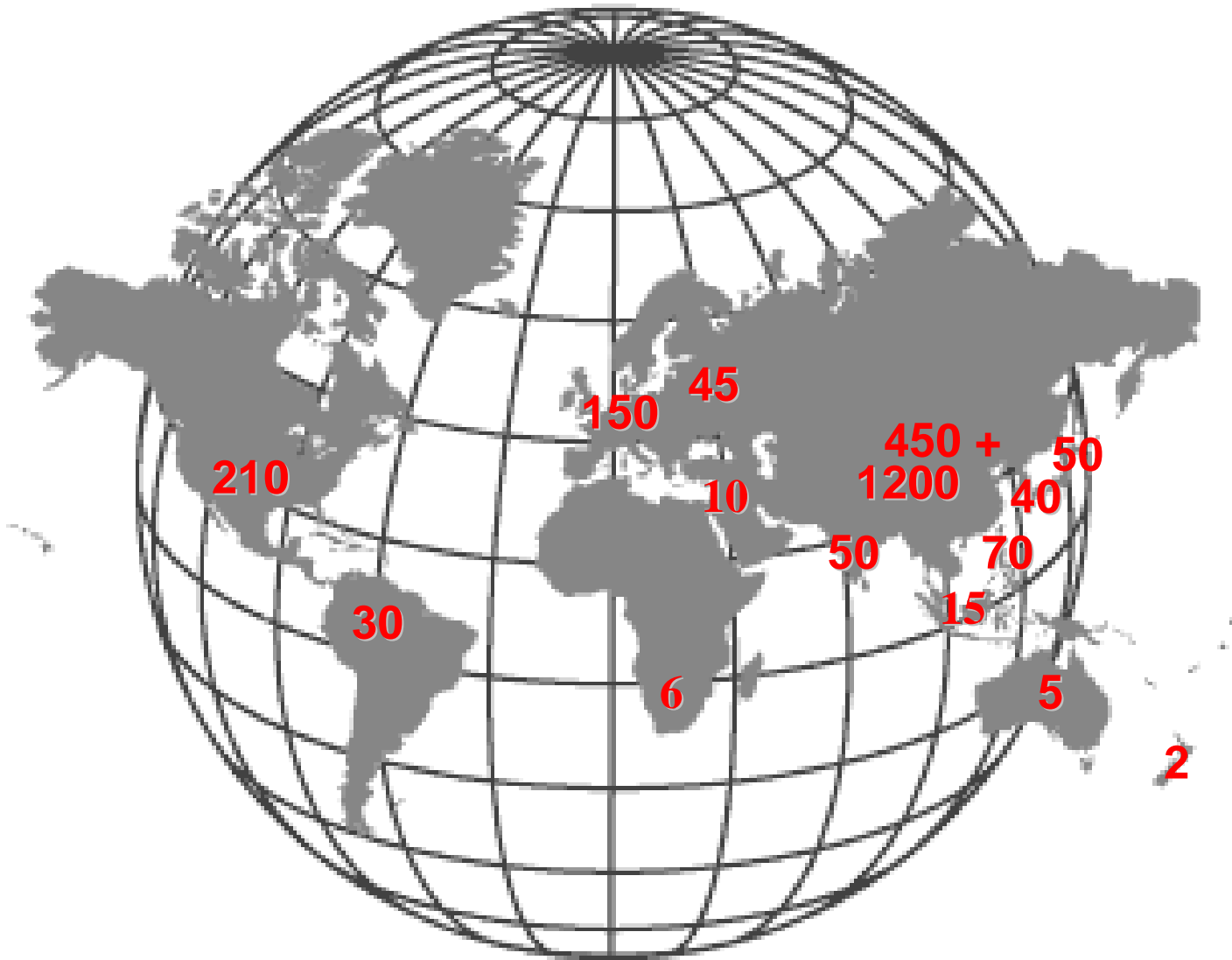


World Sales by Region, 2005

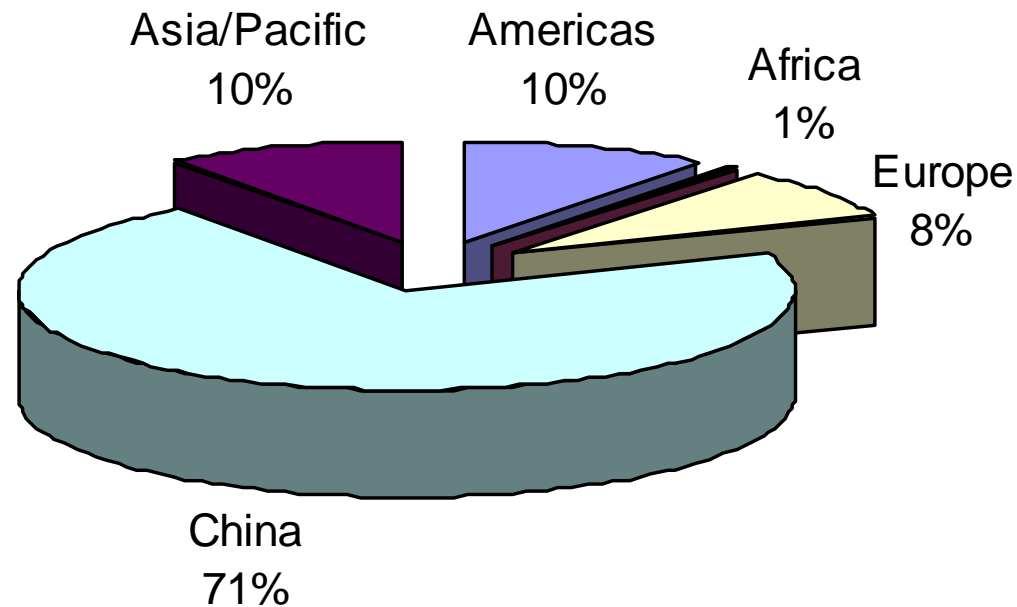
Total US\$7.6B



Distribution of Investment Casting Foundries



Distribution of Investment Casting Foundries



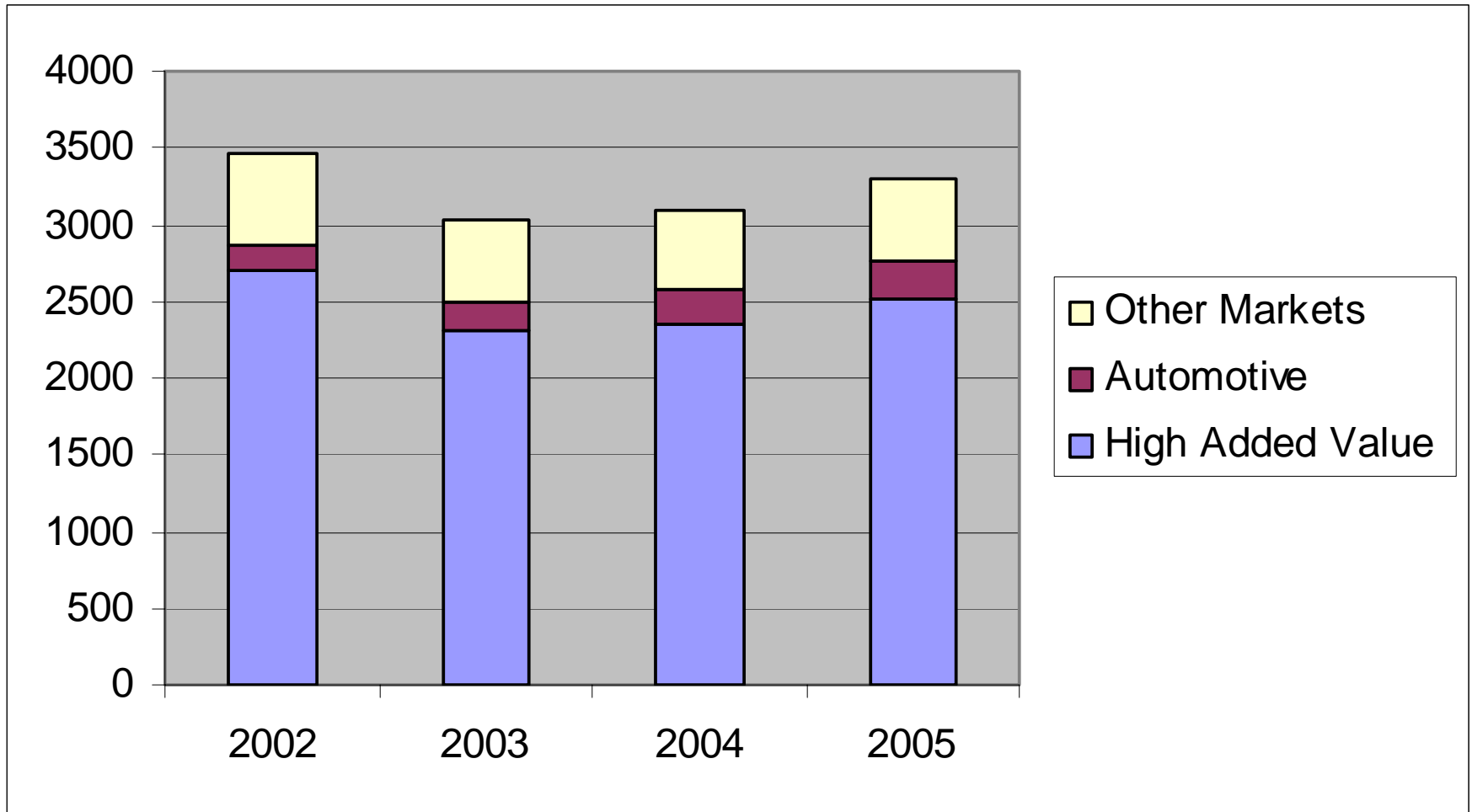
INVESTMENT CASTING MARKET REVIEW 2005 Europe & North America

Richard Hirst
Blayson Olefines Ltd

North America 2005

- 2005 Total Sales \$3,300M
 - +6.5% v 2004
 - still below 2002 but recovering
- Improved order books in all market sectors
- Factors influencing the market
 - industry consolidation
 - imports
 - availability and cost of raw materials e.g. Zircon
- Overall market expected to grow by 6 – 8% in 2006

N America - Sales by Market Sector US\$M



Market Trends – N America

AEROSPACE

- Commercial market very busy with increased build rates and strong spares sales
- Overall air traffic is up and load factors are at record levels
- Airline losses continue causing doubts as to viability of several large airlines
- Low cost airlines re-shaping the industry
- Growth expected to continue for next few years
- Boeing has significantly raised forecast for sales to 2025

Market Trends – N America

Industrial Gas Turbines

- 2nd largest sector
- Strong spares sales
- New build growth predicted to satisfy Asian demand

Automotive

- Growing market for new casting applications
 - driven by new emission standards and fuel efficiency
- Substantial increase in turbocharger sales for cars and trucks
- Sales expected to grow by 6% in 2006

General Industry

- High volume applications susceptible to offshore sourcing
- Growth of 3% predicted in 2006

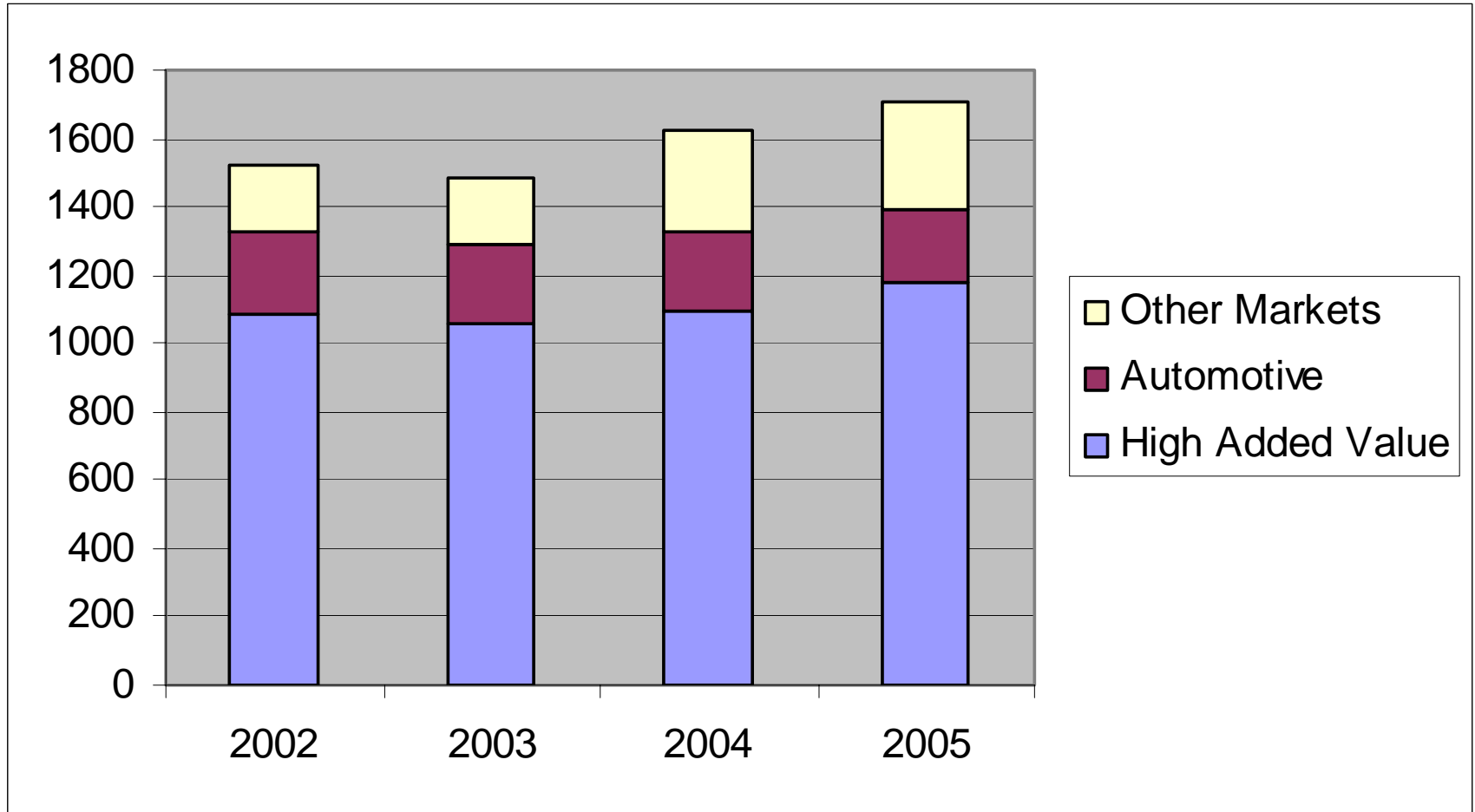
Medical

- Business strong and growing by 6-10% per annum

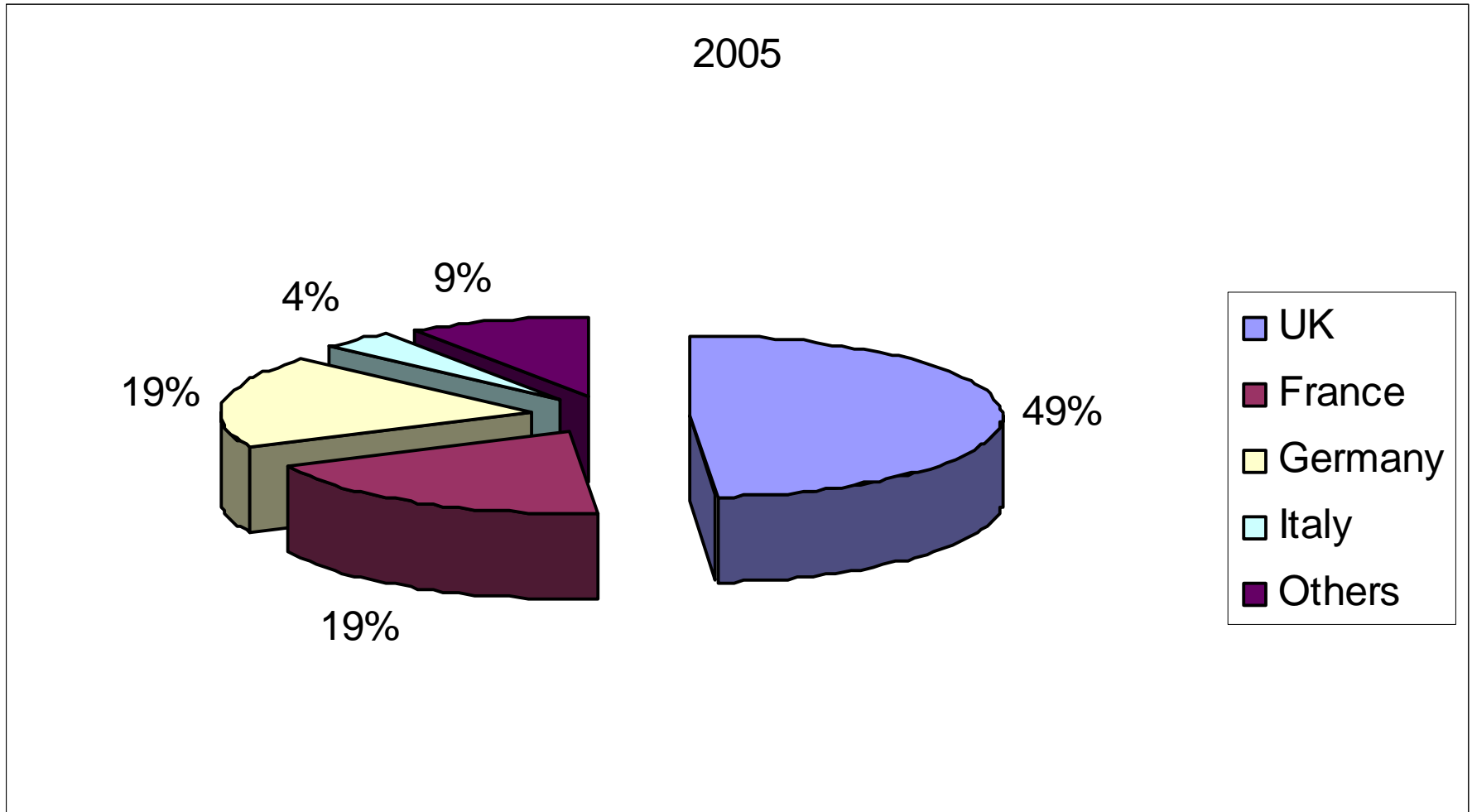
Europe 2005

- 2005 Total Sales \$1,709M
 - +12% v 2004
- Growth based on high added value sales
- Automotive steady
- General commercial castings increasingly outsourced
 - some foundry closures
 - some foundries ‘managing’ imports
- Investment casting production in Central/Eastern European countries increasing
 - Czech Republic & Slovakia benefiting from automotive sales

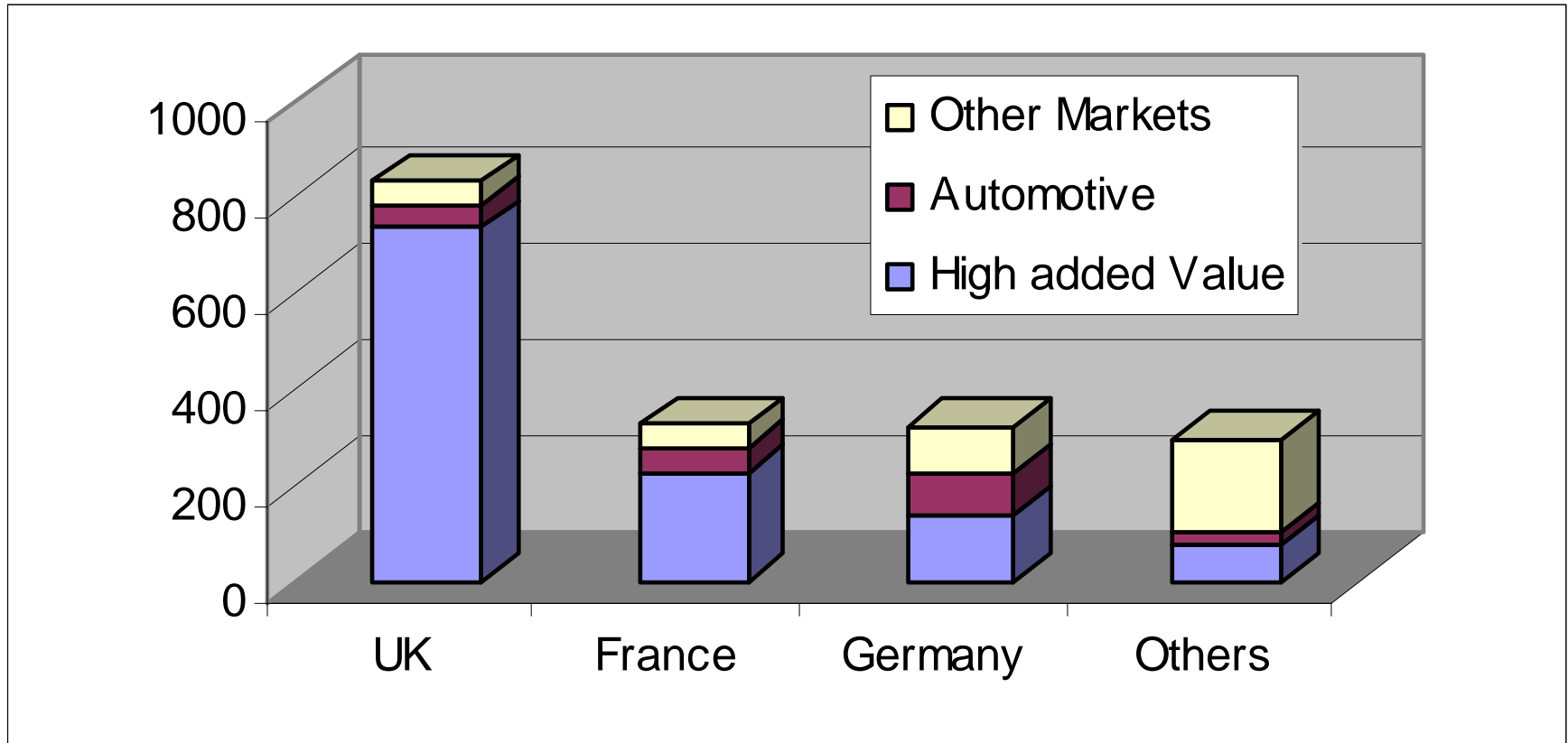
Europe - Sales by Market Sector US\$M



European Market Sales by Country \$USM



European Market Sales by Country & Sector \$USM



Market Trends – Europe: Aerospace

- European aerospace currently very strong
- Rolls Royce profits +50%
 - record new orders of £11.3billion, order book now £23billion
- Airbus forecast further strong growth of 12-19% in profits this year
 - after a record financial performance in 2005
 - 150 A320 aircraft to China in £5.7b deal
- However Boeing won 55% of new commercial aircraft orders by value last year
 - Dreamliner sales winning back market leadership after 3 years of Airbus dominance
- Russia consolidating aircraft manufacturers into one state-run company
 - intention is to double production of aircraft in the next 10 year

Market Trends – Europe : Automotive

- Industry statistics show overall the sector remains healthy but with mixed fortunes
- Toyota, Honda, Nissan and Land Rover all plan to expand
- VW restructuring, could lead to 20,000 job losses
 - possibly outsourcing component operations
 - entire factories could be sold to suppliers
- Audi hopes to sell 1.4m cars by 2015 from 830,000 in 2005
- UK plant closure at Peugeot
- Nanjing auto to restart UK sports car production ?
- Turbowheel sales remain very high, castings manufacturers at full capacity

Market Trends - Europe

- POWER GENERATION – strong growth continues
- MEDICAL – after a quiet period sales now picking up
- GENERAL COMMENTS :
 - High energy and raw material prices causing headaches for all manufacturers
 - Resulting higher costs being passed on where possible
 - Globalisation of sourcing lower value parts continues

Summary - Europe & N America

- Aerospace remains key to future health of North American and European investment casting
- Total world aircraft orders expected to fall to 800<850 aircraft in 2006 from 2057 in 2005
 - will result in steadying of growth in 2007
- Automotive markets will remain competitive with downward pressure on prices
 - turbowheel strong growth to continue
- Less complex castings will continue to be sourced from lower cost regions
- 2006/7 expected to continue growth trend of <6%

Asia

China

- Dr Zhigang Lu, CFA Investment Casting Branch

Japan, Taiwan, Korea

- Junichi Take-Uchi, Japan Foundry Society

India

- Kishan Gohil, Modtech Machines Pvt Ltd

Other Markets

- Australia/NZ – small market, 5 foundries
- South America – has the potential for a large industry
- Africa
 - North – very limited
 - Sub Sahara – nothing known
 - South – reasonable industry and known in world markets
- Russia – economy growing
 - has an established industry based on aerospace and commercial production

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Discussion