





Materials Testing

3rd December 2004

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1. INTRODUCTION Core Values

Our vision

To be recognised as the leading global provider of materials testing services and the partner of choice for outsourcing needs, by delivering value added services to our customers.

Our mission

We have four key priorities, all interlinked:

- To meet our financial objectives, as only by achieving this goal can the company continue to satisfy the need of its customers and stakeholders, e.g. shareholders, employees and the community
- Develop and retain competent people, harness their enthusiasm and inspire them to excel
- Develop and promote excellent service principles and to deliver these to customers with a high regard for their needs
- Act as a good citizen by operating in a safe and ethical manner.



What We Do

"But the Contractor said his tests passed"



BMT is a knowledge based company providing independent, accredited materials testing services to almost every business sector. The results of testing facilitate product development, production release, forensic analysis and certification.



2. BUSINESS MODEL Key Competencies

- BMT is a leading global provider of testing services focused on Materials, Health Sciences and Engineering/Technology
- Bodycote is a market leading brand and is renowned for quality, service, innovative solutions and delivering a client oriented service.
- The Group has an excellent track record in creating value and positive cash generation.
- Growth opportunities abound via organic and acquisition routes
- Organisationally BMT focuses on its Key Competencies:

Safety, Health & Environment hyperlink O.ppt

Extensive Network of Facilities hyperlink 1.ppt

Management Structure/Support Services hyperlink 2.ppt

IS Systems hyperlink 3.ppt

Quality Systems hyperlink 4.ppt

Human Resources hyperlink 5.ppt

Operational/Technical hyperlink 6.ppt

Business Development hyperlink 7.ppt



3. FINANCIALS/KPI's

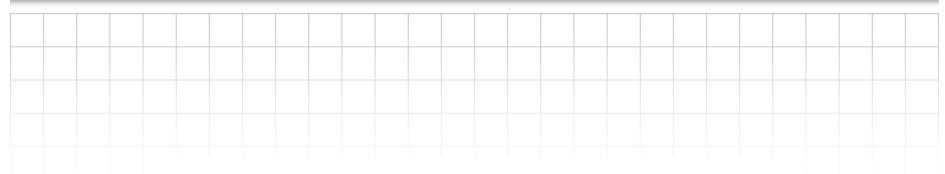
- 1. Sales/EBIT CAGR hyperlink 8.ppt
- 2. Margins hyperlink 9.ppt
- 3. Capex and depreciation hyperlink 10.ppt
- 4. ROCE <u>hyperlink 11.ppt</u>



4. SERVICES/MARKETS/ COMPETITION

- a) Materials
- b) Health Sciences
- c) Engineering & Technology





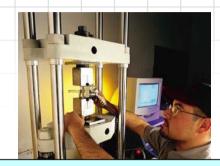




MATERIALS TESTING

Materials Testing core services







The "Materials" laboratories within the Bodycote group mainly provide routine testing services to a wide range of industries



Corrosion testing Oil & gas sector



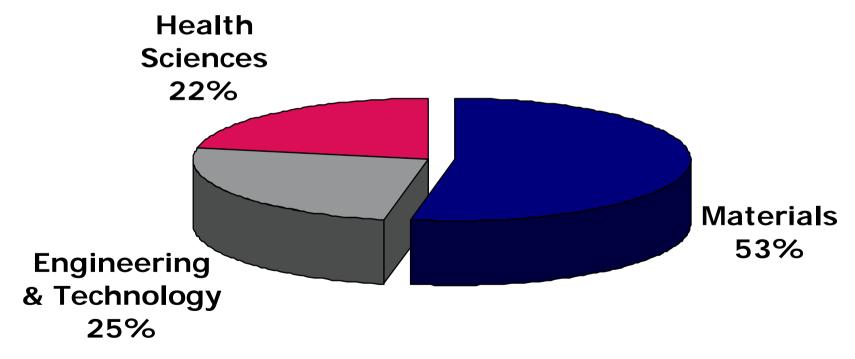
Metallurgical examinations



Scanning electron microscopy

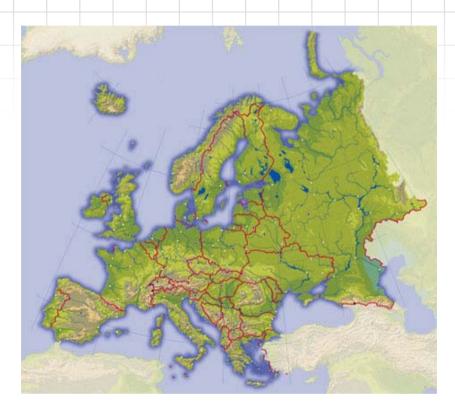








Where is the service provided from?



UK – 13 laboratoriesEurope – 4 laboratoriesMiddle East – 4 laboratories



USA – 5 laboratories Canada – 4 laboratories



What sectors does "Materials" serve?

Almost all manufacturing industries: -



Aerospace

Automotive

Construction

Defence

Electronics

General Engineering

Oil & Gas

Power Generation

Rail









Market Drivers

Service – reliable, quality assured performance

Pricing – increasingly competitive

Increasing efficiencies - systems integration

Location – non-specialist services will not travel far

Locomotive lubricating oil analysis



Testing is often the last activity in the manufacturing production chain, the pressure is always on to gain a competitive advantage



Competition

Numerous smaller independents > 1000 globally

A few larger independents – Staveley, USA; Stork; Canspec, Canada

Manufacturers with in-house facilities

Multinational certification companies – DNV, SGS, Intertek – in a few areas only

Universities & Technical institutions (RAPRA, Edison Welding Institute, TWI)



What differentiates Bodycote?

High priority placed on Quality Assurance

- Absolute, non-negotiable refusal to 'adjust' results

Stature – we're large enough to partner major clients



Unrivalled breadth of testing capability

Strength in depth - materials and engineering knowledge and skills

Strong service ethic





Market potential / future trends

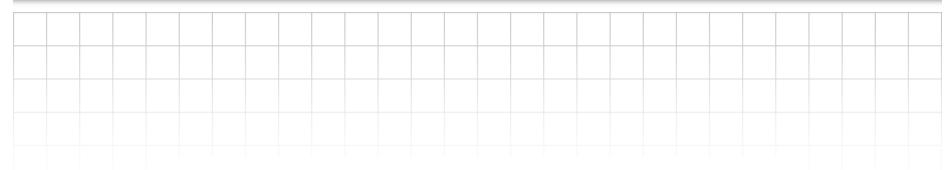
- Engineering manufacturing markets are in flux, globalisation is having an effect
- Project based work oil & gas, Middle East civil engineering development - continues to provide higher margins
- Infrastructure related testing is more secure rail sector / pipelines / power generation
- Adding value to the services offered with e.g. bolt-on consultancy / results interpretation
- Potential upside from globalisation in former Eastern Block countries – Plzen provides a foothold, Poland being investigated
- Acquisition policy is targeted at higher value / higher technology sectors



Barriers to Entry

- **Low**: low technology, locally based service
- Medium: client wants a Groupwide deal across several regions demands a laboratory network
- High: client demands expensive, industry specific approvals or accreditations e.g. NADCAP for aerospace









HEALTH SCIENCES

Health Sciences core services



Testing pipelines for water utilities



Testing soil and water for signs of contamination



Testing and surveying for asbestos in buildings



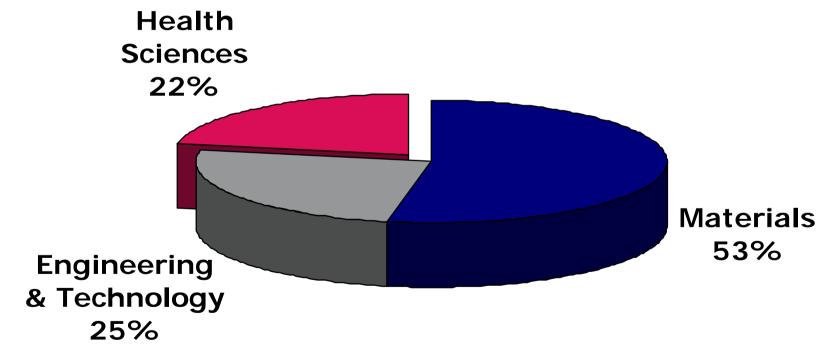
Testing and evaluating pharmaceuticals



Food testing









Service centres



UK – 5 laboratories



Canada – 4 laboratories



Middle East – 1 laboratory



Market Drivers

- Businesses are driven by changes in legislation eg. asbestos, environment etc.
- Competency and reliability. Testing on time, every time.
- Aversion to risk (supermarkets, brand retention issues).
- Reverse globalisation products from outside EC need to be tested in the EC.
- Canadian Cost Competitiveness: tax credits for US companies using Canadian laboratories.
- Ability to trade globally ie. One quality standard, one service, one company, eg consolidation in European markets, transatlantic capabilities etc.

Current trends are for increased prominence /activity in all the key drivers



Competition

- Pharma market fragmented. Niche market for routine/R&D testing. Large CRO's dominate clinical testing but do not compete in "analytical testing" markets.
- Environmental market dominated by large competitors. Niches exist for best in service providers.
- Utilities market. Large audit competitors lack intellectual expertise. Niche for expert businesses.
- Asbestos survey market. No dominant competitor. Market currently under-supplied.



Market Differentiators

- Service driven philosophy. The customer gets what the customer wants ie. Trending, web based interactive services, out of spec reporting etc.
- Flat management structure; responsive to change, deployment of skills as required, flexibility of approach.
- Using the "factory" approach but embracing a true first class service. Specialist services draw in custom.
- Ability to talk to senior, technically competent personnel, not a customer service clerk.



Market Potential / Future Trends

- Organic growth of min 10% per annum achieved on existing UK Pharma / Environmental laboratories last 5 years and targeting future growth.
- Strengthening core services through acquisition, adding bolt-on environmental / asbestos laboratories in the UK.
- Increasing scope of group to major on food testing in the UK. Additional food testing capacity in West coast US/Canada.
- Additional pharma / nutraceutical capability in the Boston triangle & in California.

Burden of legislation suggests the overall Health Sciences market will increase during the decade



Future Priorities

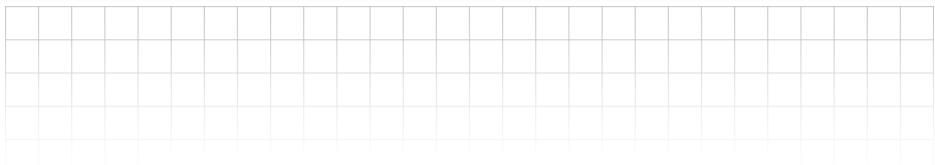
- Introduce and develop new acquisitions, bringing them to Bodycote typical EBIT margins.
- Standardise test methodologies to:
 - Reduce operating risk.
 - Create efficiencies.
 - Improve margins.
- Continue the development of centres of excellence for niche tests, or contract out around the network.
- Transfer invested know-how globally using a best in practice approach.



Barriers to Entry

- Substantial in most Health Sciences markets:
 - Key staff: have significant invested knowledge in their markets; hard to find.
 - ▶ Pharma and Environmental labs are capitally intensive to start up.
 - Quality standard requirements in Environmental testing are increasingly stringent.
 - Business risk and PI issues in Asbestos.
 - Credibility in food testing is hard to establish.









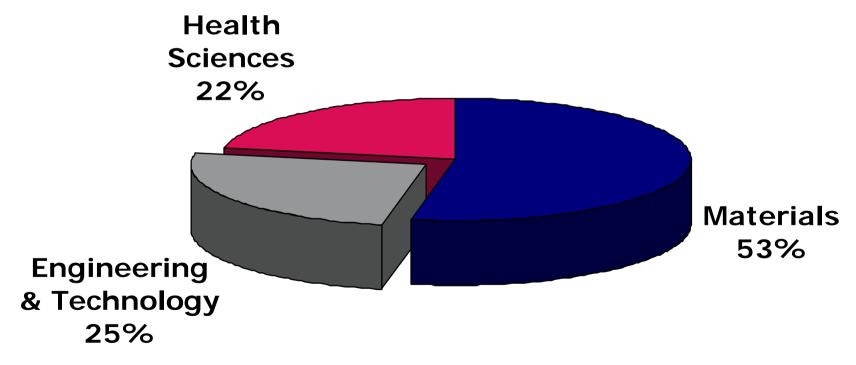
ENGINEERING & TECHNOLGY

What Does Engineering & Technology Do?

The Engineering & Technology function provides specialist / advanced mechanical and materials testing services to a wide range of industries









What Industry Sectors Does It Serve?

Almost all manufacturing industries: -



Aerospace (airframes & engines)

Automotive

Construction

Defence

Electronics

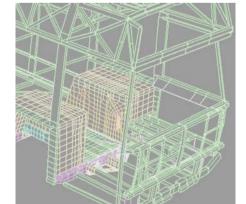




Oil & Gas

Power Generation

Rail







Where Is The Service Provided From?



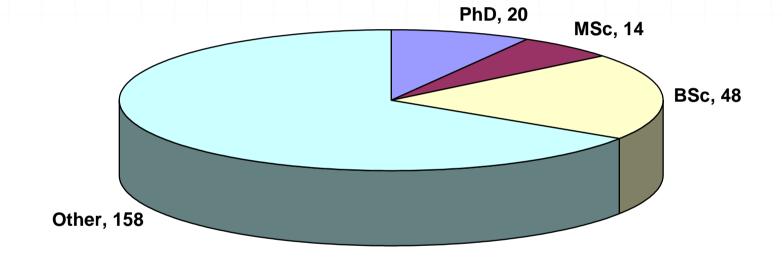


- 3 specialist facilities within the UK
- 3 within Europe
- 1 within the USA
- 2 within Canada





Who Is The Service Provided By?



240 staff

Over 1/3 Qualified to degree standard or higher



What Is The Customer Looking For?

Demonstrating Fitness for Purpose:

Product certification

Design (& change) validation

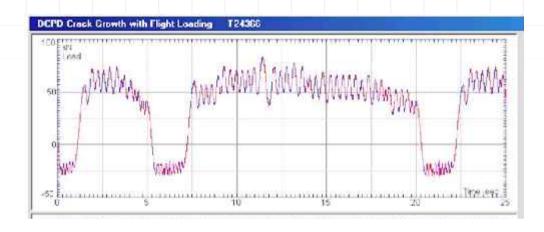
Determine susceptibility to defects and degradation

Response to service problems



Response Of Materials To Complex Variables





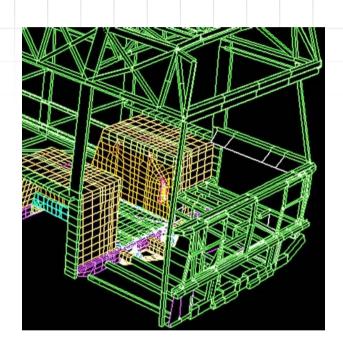


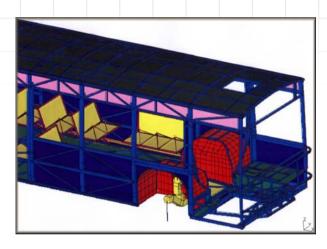
Example: Measuring the rate of fatigue crack growth against simulated aircraft flights



slige number 35

Validation of Computer Models



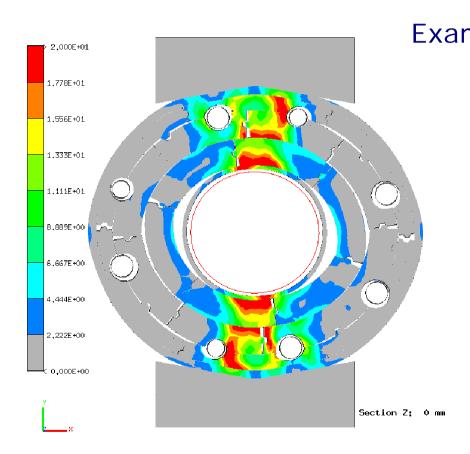


Example: Checking the stress 'hot-spots' seen on computer model with those seen in simulated service

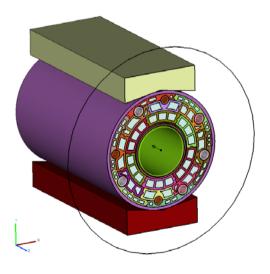




Validation of Computer Models



Example: Checking the predicted clamping force transferred to the central steel tube of a sub-sea umbilical during installation



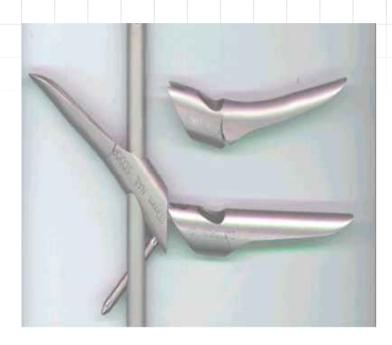


Examples: Product Certification





Examples: Design Validation



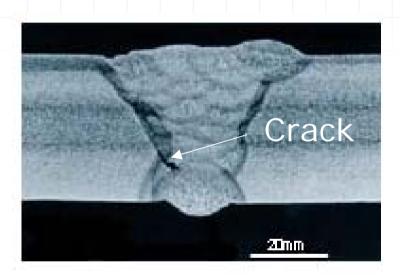
Example: Medical devices (femur nail)

Earthquake dampers for bridges





Examples : Establishing Tolerance ToDefects



Preventing



Example: Using fracture mechanics to predict the resistance to manufacturing defects in welds



What Are The Main Market Drivers?

Product certification / qualification against specification

New materials / new designs

Protection against litigation

Reduced warranty exposure

Will the product work properly, safely and for the required length of time when it reaches market?





Who Are The Competition?

Manufacturers' specialist in-house facilities (Alstom, Incotest)

Privatised Government Facilities (Qinetiq, TRL, IMA)

Universities & Technical institutions (Heriot Watt, Ghent, TWI, Sintef)

Smaller industry specific testing organisations (MIRA, Westmorland, Martest, Sintef, Southwest Research)

The manufacturer simply takes the risk



What Differentiates Bodycote From The Rest?

- Commercially driven, not institutionalised
- Scope of capability
- Experience from many industry sectors
- The willingness and ability to tackle novel problems
- Depth of both materials and engineering knowledge and skills
- Willingness to invest to support changing market demands
- Strong service ethic
- High priority placed on Quality Assurance
- Independence





Market Potential / Future Trends

- Higher end engineering currently remains in west
- •Some 'reversed globalisation' due to re-qualification of existing items under new manufacture
- Engineering project income not related to production volume
- Increased integration between testing and computer modelling – smarter testing
- Manufacturers downsizing in-house capabilities
- Business is becoming more time critical



Barriers to Entry

- Capital Intensive. Often need extensive range of expensive equipment
- •Personnel. Very dependant on high calibre personnel, both academic and practical
- Branding. Widespread customer base, a difficult service to sell – branding and networking are key
- Accreditation. Specific approvals are often required which can take considerable time and effort to obtain



5. STRATEGY FOR GROWTH

- a) Organic/Outsourcing/Acquisitions
- b) Business Development
- c) Technology Transfer



Organic/Outsourcing/ Acquisitions hyperlink 12.ppt

Bodycote plans to grow the materials testing group both organically and by acquisition.

- 1. Diversify away from routine and commodity testing by expanding further up the value chain. <a href="https://hyperlink.nih.gov/hyperlink
- Increase BMT exposure to regulatory driven markets, as opposed to cyclical engineering/manufacturing markets. hyperlink 14.ppt
- 3. Broaden scope of services and network provision. hyperlink 15.ppt
- 4. Expand into new geographical markets. hyperlink 16.ppt



Business Development

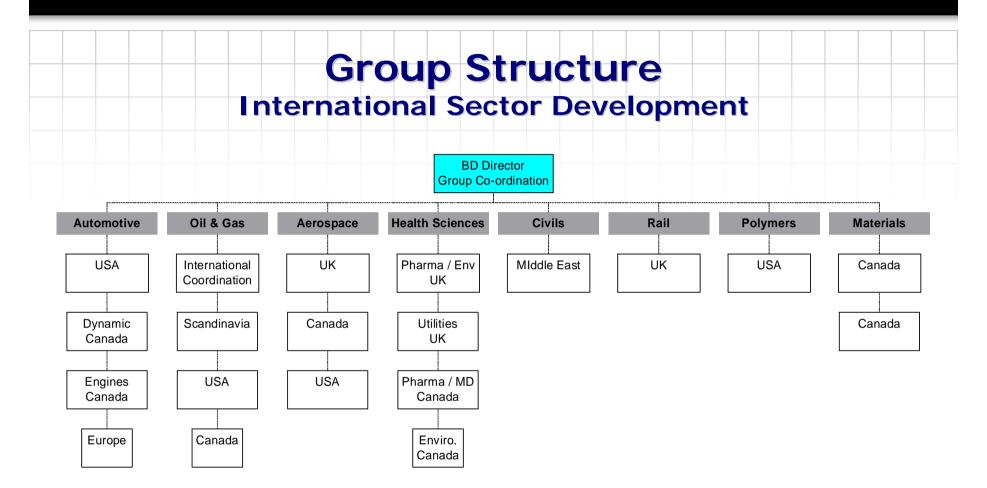
- Core skill-set Business Development Managers
- Organisation & structure
- Marketing strategy
- Partnerships & Outsourcing
- Acquisition pipeline



Core Skill-set Business Development Managers

- Specific sector experience
- Operating at board level
- Entrepreneurial
- Numerate, IS literate
- Good communicator
- Self starting
- Testing experience is not essential
- Business acumen is!







Group Coordination

- Regular cross reporting by international / sector seniors
- Use of Bodycote "Extranet" as a communication tool
- Annual meeting of international seniors to review strategy and report on progress
- Sector specific meetings to coordinate approach to major clients
- Sharing of business critical news
- Ongoing development of CRM systems
- Recent appointment of Global sector coordinator Oil & Gas



Dealing Effectively With Major Clients

- Locally Operations Managers
 - Close working relationship
 - Deal with day-to-day production issues
 - Inform other interested parties through Extranet /CRM system
- Group Business Development Managers
 - Target key influencers
 - Negotiate beneficial Group deals
 - Set Group pricing
 - Communicate effectively within Group
 - Protect the Group's wider interests



Marketing Strategy

- Differentiation through unrivalled breadth of services, geographical cover and ongoing service enhancement
- Brand development through improved communication, both internal and external
- Facilitate easy communication with the Group through the development of regional marketing centres
- Being Web-centric
- Encourage Group 'experts' to have high external profile.



Regional Marketing Centres

- Well established in Canada
- Developing in USA and UK
- Future development in Middle East
- "One-stop-shop" for inbound enquiries
- Ensure maximum value extracted from every enquiry
- Place the work with subject experts
- Take the enquiry administration load off the laboratory staff
- Measure client satisfaction more testing
- Provide management information re-enquiry stream / client satisfaction



Being Web-Centric

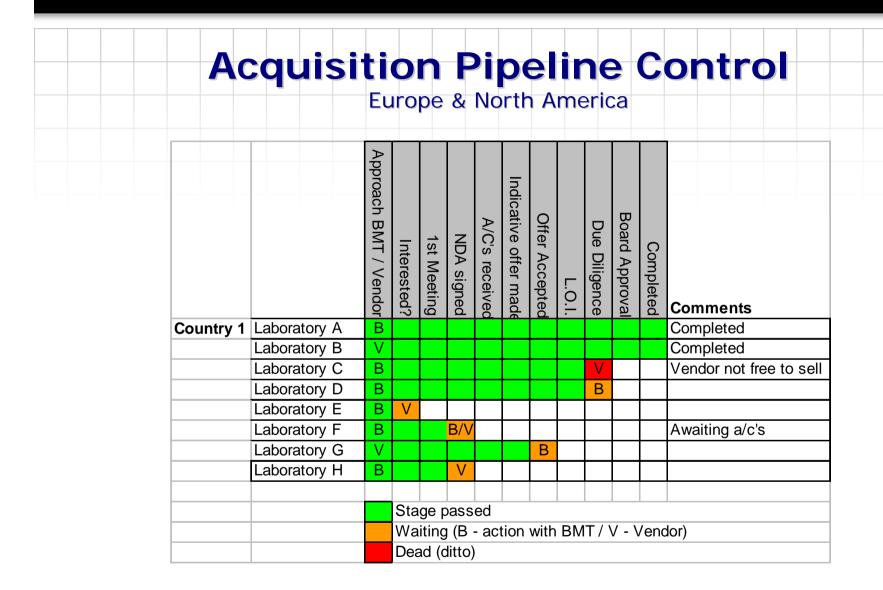
- Group web sites are promoted at every opportunity
- Major web-sites for:
 - North America
 - Europe
 - Middle East
- North American site being split to provide better differentiation for Canadian R & D services
- Web search engine optimisation measures in-place
- Approximately 20,000 visits a month
- Web enquiry stream providing ~£600k p.a. of additional business
- Brochure and other material available on-line
- Micro-web sites developed for specialist services / local language entry points, examples – "BOMIC", Failure investigations, Swedish language



Partnerships / Outsourcing

- Ongoing outsourcing contracts in North America and Europe
 - Automotive and aerospace predominate
- Clients are increasingly looking to develop partnerships with Bodycote
 - ▶ Planned service enhancements shared benefits
 - Technology benefits
 - Stable trading conditions
 - Assured quality
 - Ongoing investment







Technology Transfer

Technology transfer is now a key element within Bodycote Materials Testing's growth strategy

The objectives are:

To the maximise the leverage from existing key skills and capabilities

and

To fast track introduction of advanced technologies



Technology Transfer

Bodycote has several areas of specialist capability but the market frequently insists on a local delivery of service

For example:



Corrosion testing

Advanced fracture toughness testing

Vibration

Fire & Flammability

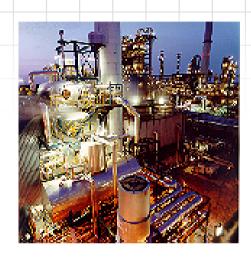
Numerical Modelling

Food testing



Opportunities

Just considering oil and gas









Oil & Gas

The spectrum of services & capabilities already offered:

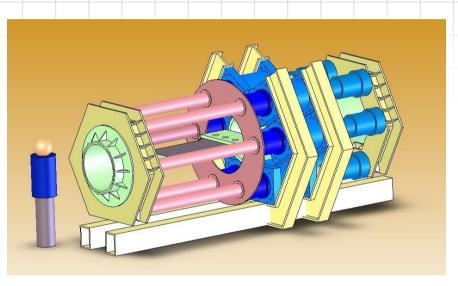
- Routine mechanicals
- Advanced Fracture Toughness
- Component & Structural Testing
- Corrosion Testing
- Numerical Modelling / ECAs

There are potential benefits identifiable now from technical development and exchange for all the above



Oil & Gas





1200 Tonne Wide Plate Test Rig

Near-Resonance Full Scale Pipe Fatigue Test Rig



From The Client's View

The client can reasonably expect:

- A consistent quality of service from each location
- Access to appropriate expertise to satisfy needs
- Apply consistent, appropriate methodologies
- That we understand our local and global capabilities



The Advantages For Us

- Reduction in time & costs associated with procedure development / eliminate duplication of effort
- Increased leverage from our personnel with 'top consultant-level' expertise
- Improved client confidence through rigorous training of local staff
- Increased resource capability through global networking giving to ability to undertake larger programs



6. SUMMARY

- A proven track record of consistent revenue EBIT and ROCE growth
- A solid infrastructure foundation for development moving forward
- Business Development function provides pipeline of outsourcing/organic/acquisition opportunities
- Highly motivated management team committed to achievement of strategic goals
- Bodycote target is to develop BMT to major group contribution

