



ENGINEERING PROFESSORS' COUNCIL

**EPC Durham Congress 2002**

**“The Journey - From the  
Engineering Council to The  
Engineering and Technology Board**

**Dr Robert Hawley CBE, DSc, FRSE, FREng**

**25th-27th March 2002**



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# Technology of Tomorrow

- Financial modelling
- E- & M-commerce
- Intelligent software
- Nanotechnology
- Learning technology
- Media technology & Leisure software
- New materials
- Biotechnology
- Genomics
- New drug discovery techniques
- New drug delivery techniques
- Body part replacement
- Cleaner energy sources
- Pharmaceutical control of ageing



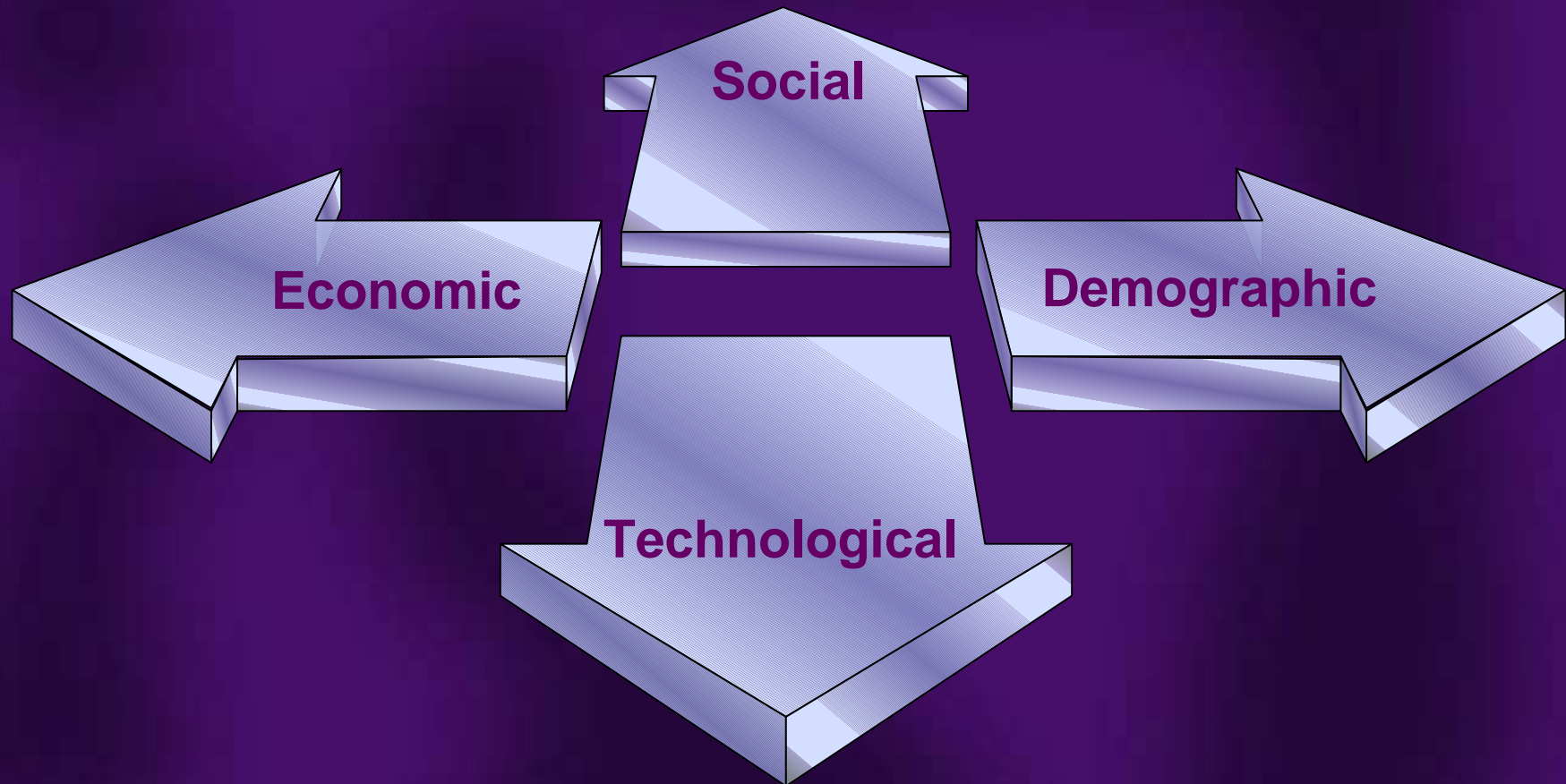
# Survey Findings

- The engineering profession is undergoing rapid change
- Boundaries in the profession are blurring



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# Four Forces of Change



# Areas of Technological Change

- Information technology
- Miniaturisation



# Areas of Technological Change

- **Material Science**
- **Bioengineering and Medicine**



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# Areas of Technological Change

- Energy



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# Areas of Technological Change

- Manufacturing



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# Areas of Technological Change

- Transportation



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# Areas of Technological Change

- Environmental engineering



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# Demographic Changes

- Population growth in developing countries



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# Demographic Changes

- Ageing of developed nations



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# Demographic Changes

- Increasing diversity



# Economic Changes

- **The manufacturing workforce will grow in developing regions**



# Economic Changes

- **Globalisation of world commerce**



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# Economic Changes

- **New fast-paced, competitive economy**





# Social Changes

- **Increased urbanisation**



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# Social Changes

- Accelerating change and pace of technology



# Social Changes

- Older engineering professionals



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# 21st Century trends

- Information technology
- E-commerce
- Globalisation
- Corporate downsizing
- Deregulation
- Artificial intelligence
- Biomedicine
- Micromechanics
- New materials



# 21st Century Trends

- The engineering “Knowledge base” will change constantly and rapidly
- The boundaries of engineering work will expand
- Intellectual property will become the most important component of value to both the individual and the corporation
- Organisational structures will change constantly



# The Future Engineering Environment

- One of continued learning
- Cultural diversity
- Ethics in engineering
- Engineers as entrepreneurs
- Communication skills



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# Young Engineers will need

- Continuing education
- Carer development and counselling
- Role models and mentors
- Professional networking



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# Mid-Career Engineers will need

- Continuing education
- Career planning and transition
- Technical updating
- Networking and job finding assistance



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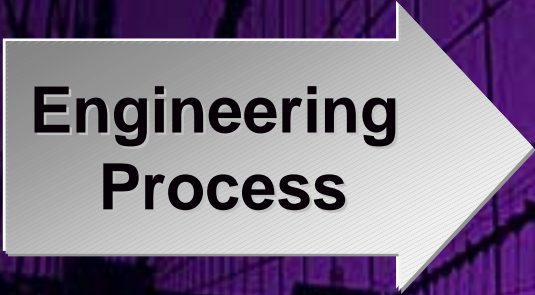
# Mature Engineers will need

- Continuing education
- New job-finding opportunities and career changes
- Benefits that companies will stop offering (e.g. health, dental and life insurance, pensions)
- The ability to provide mentoring opportunities



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**Science**



**Technology**



**Product**



**ENGINEERS**



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***“To add value to society and make an effective input to Government policy by being the focal organisation developing and capitalising on synergies within the wider engineering community”***



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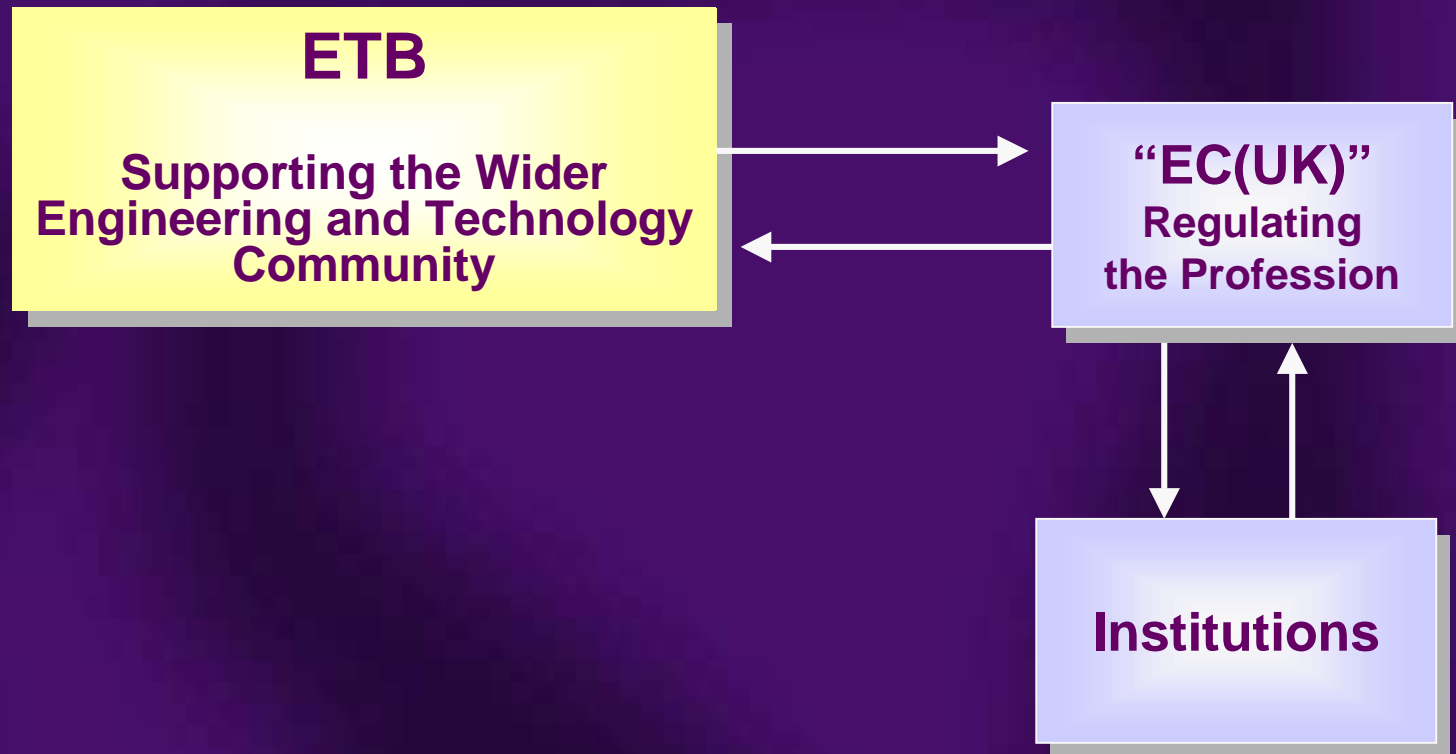


**The  
Hawley  
Group**

# **The Engineering and Technology Board**



# ETB & NRB



# The Engineering and Technology Board (ETB)

## The Engineering Community

The Engineering Council

The Profession



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**Who are today's engineers and  
technologists**

**Where do they work?**





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**Who are the real  
customers?**



**The wider  
Engineering  
Community**



**Institutions  
Academia  
Government**



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# Customer Based Survey



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# The Customer Survey

- **81%** agreed that a body was needed immediately to cover a wider role; inclusive of business; industry; new technologies; different skills
- **65%** thought it was genuinely feasible
- **90%** said more to be done to promote knowledge sharing across disciplines
- **89%** saw the development of the Web based services as a market for the new Engineering Council
- **92%** arrangements for continuing professional development as vital to maintaining a truly competitive edge



# What does the industry need?

- **Widen the role and become more relevant**
- **Ensure people and technology suppliers actually have right skills for the job**
- **Enable people to prove they are up to date with knowledge, given the rapid rates of change and information overload**
- **Make qualifications recognised internationally**
- **Develop broader based business skill as well**
- **Increase links between education and business**
- **Speak to Government**



# Education and Skills



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# Engineering & Technology Board

## MUST BE

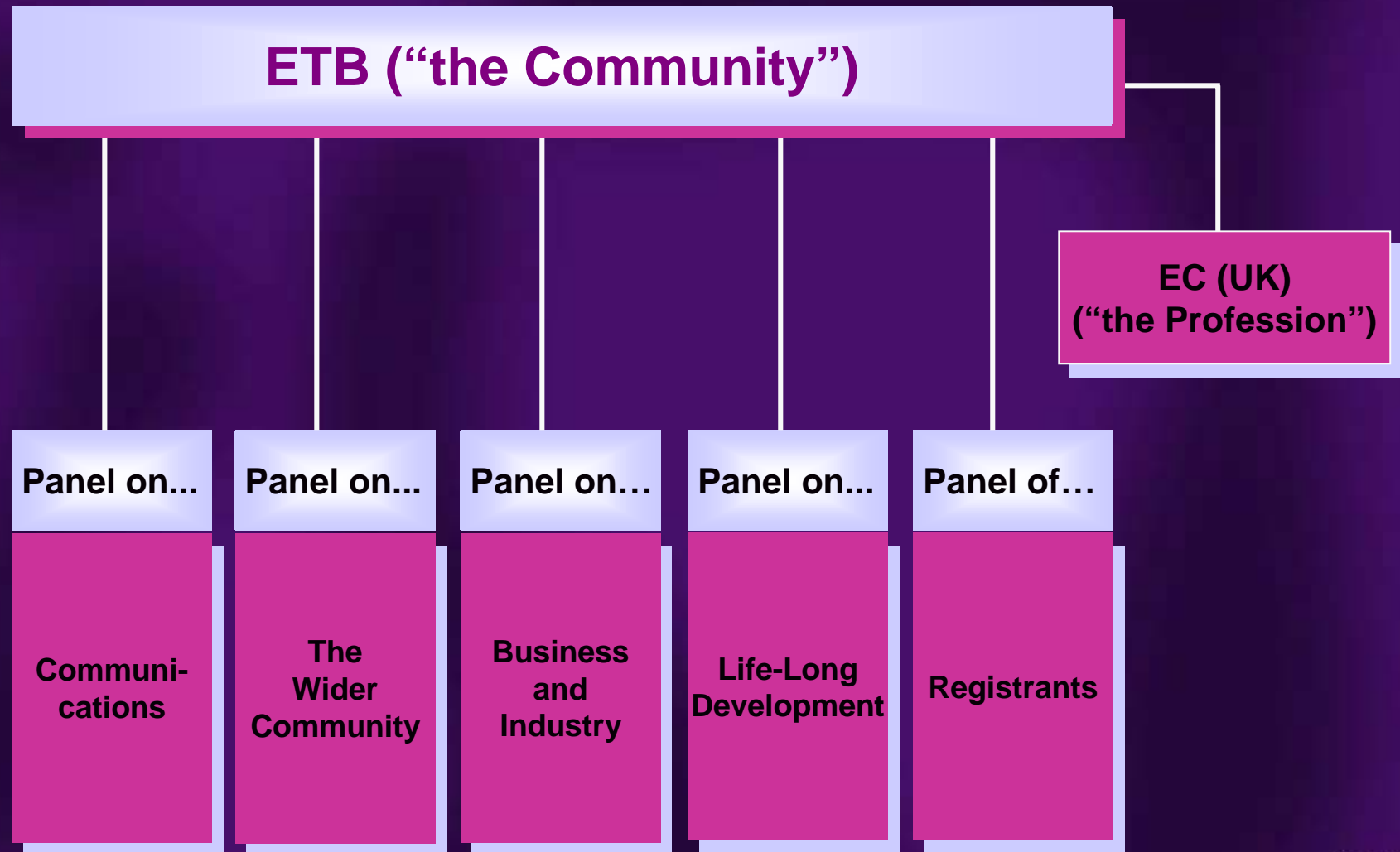
- Relevant to the wider engineering community
- Inclusive of that community of the profession

## AND ITS JOB IS

- Urgent



# ETB Structure



# ETB Objectives

## Primary Objective 1

Start the reversal of the downward trend in the supply of people with qualifications and skills relevant to engineering and technology based careers and jobs.

## Primary Objective 2

Achieve a marked and noticeable shift in public attitudes towards an understanding of the importance and value of engineering and technology in today's economy.

## Primary Objective 3

Build effective and valued links with business and industry reflecting its real-time and future needs.

## Primary Objective 4

Review and maintain the professional standards required to meet industries needs and maintain an authoritative register of appropriately qualified individuals.







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