



**ENTERPRISE AND CULTURE COMMITTEE**

**10th Meeting, 2003 (Session 2)**

**Tuesday, 25 November 2003**

The Committee will meet at 2 pm in Committee Room 1, Committee Chambers

1. **Item in private:** the Committee will decide whether to take agenda item 3 in private.
2. **Intermediary Technology Institutes:** the Committee will take evidence from:
  - Dr Janet Brown, Director, Competitive Business, Scottish Enterprise;
  - Mr Gordon Campbell, Chairman, Intermediary Technology Institutes;on the establishment of Intermediary Technology Institutes in Scotland.
3. **Scottish Solutions Inquiry:** the Committee will consider a draft report on its Scottish Solutions inquiry.

Judith Evans  
Clerk to the Committee (Acting)  
Room 2.7, Committee Chambers  
Ext. 0131 348 5214

The following meeting papers are enclosed:

**Agenda Item 2**

Cover note and Scottish Enterprise briefing on Intermediary Technology Institutes [EC/S2/03/10/1](#)

**Agenda Item 3**

Cover note and draft Committee report on Scottish Solutions (Private Paper) [EC/S2/03/01/2](#)

**Enterprise and Culture Committee**

**Meeting 25 November 2003**

**Intermediary Technology Institutes**

Members will recall that following the Committee's away day on 27<sup>th</sup> August the Committee decided to seek information on the establishment of Intermediary Technology Institutes (ITIs). As members are aware, ITIs and their potential to stimulate the economy have also arisen as part of the Committee's Scottish Solutions inquiry.

An evidence session has therefore been arranged with Dr Janet Brown, Director of Competitive Business with Scottish Enterprise, who was responsible for the development of the ITIs, and Mr Gordon Campbell, the newly appointed Chairman of the Intermediary Technology Institutes. Members will be able to question the witnesses about the establishment of the ITIs and about plans for future development.

The following documents have been received as background for members and are attached to this paper:

- a summary of the economic case for the establishment of ITIs and the rationale behind the approach taken to their development;
- a summary of the new Institutes following the launch of ITI Scotland, including the key individuals on the management teams (including a biography of Mr Gordon Campbell); and
- a one-page organisational structure of the ITIs.

Judith Evans  
Clerk to the Committee (Temporary)

# Services to Industry Groups

Price	+/-	YTD %	Yield	NAV	Disc/Prent
534.0			16.3	627.0	14.8
67.2	+0.2		-6.4		
590.8	+3.5		16.2	2.7	
280.0			9.3		
87.5			1.5		



**ITI Scotland**  
Realising Scotland's potential



Scottish Enterprise



# Realising Scotland's potential

The ITIs are vital components in the Scottish Executive's Smart Successful Scotland strategy. Scottish Enterprise in partnership with Highlands & Islands Enterprise has established ITIs in three key areas of market opportunity for Scotland – Life Sciences, Energy, and Communications Technologies & Digital Media. The ITIs' goal is to help increase the number and strength of High Growth Technology Companies in Scotland – the foundation of economic growth. They will do this by commissioning and then diffusing market-focused pre-competitive technology, into new and existing high growth companies. This proactive approach will stimulate greater entrepreneurial dynamism, create wealth and support sustainable economic growth for Scotland.



## Realising the Vision

The launch of the ITIs in December 2002 by the First Minister marked a significant step forward in growing a successful knowledge-based economy in Scotland.

The ITIs have been developed as part of the overall strategy to support a Smart, Successful Scotland. They will focus on global market areas in which Scotland has strong expertise and business development potential – Life Sciences, Energy, Communications Technologies & Digital Media (TechMedia).

The ITIs aim to:

- Create and expand the number of high growth, high value technology companies
- Attract and expand foreign direct investment that is linked to knowledge and retained skills
- Nurture strong technical, entrepreneurial and flexible skills to create a fertile environment for growth
- Increase both the technology research and commercial reputation of Scotland
- Build significant, sustainable economic impact for Scotland in these key global market areas

The three ITIs will act as centres or 'hubs' for identifying, commissioning and supporting the diffusion of market-focused pre-competitive technology. Existing and new high growth companies will be able to access and build on the technology platforms developed by this process, helping them meet the challenges of rapidly evolving global markets.

The ITIs are unique to Scotland, specifically addressing the strengths and weaknesses of the country's economy and building on the experience of similar institutes and organisations around the world. Scottish Enterprise recognises that this is a long term programme and has committed funding of £450 million over the next ten years.

**Involvement with this major project can help companies achieve growth, profits and significant commercial advantage.**

pre-competitive  
research

academic / industrial relationship

self-sustaining  
knowledge economy

attract / retaining  
direct investment

## Looking to the Future

Scotland's economic health depends on growing strong, sustainable and profitable companies that can address global market opportunities with innovative products and services utilising the latest developments in research and technology.

Many of the components to support a healthy knowledge-based economy in Scotland are already in place. We have a long-standing reputation for world class research in many fields, an excellent educational system and skilled, adaptive people. Many high growth technology-focused companies have been set up that are achieving good results. However our overall performance falls considerably behind other countries.

There are too few high growth companies, integration and exploitation of technology is poor and research and development by companies is low. For Scotland to compete successfully at world level, it needs to optimise knowledge generation and the ability to exploit opportunities.

Which is why Scottish Enterprise is making a major investment in supporting and developing the ITIs. This flagship programme will play a key role in capitalising on the skills and capacity of science in Scotland. The involvement of Scottish Enterprise Cluster Teams, Local Enterprise Companies and Scottish Development International will help to make sure that companies can take full advantage of the activities of the ITIs.

**Our long-term objective - to create high quality jobs and deliver substantial financial benefits for Scotland.**

world class research

improving mechanisms to  
identify market opportunities

specialist  
strengths

## Assessing our Strengths and Facing our Challenges

Scotland has many distinctive and valuable assets that should give us a head start in creating a highly competitive, knowledge-driven economy.

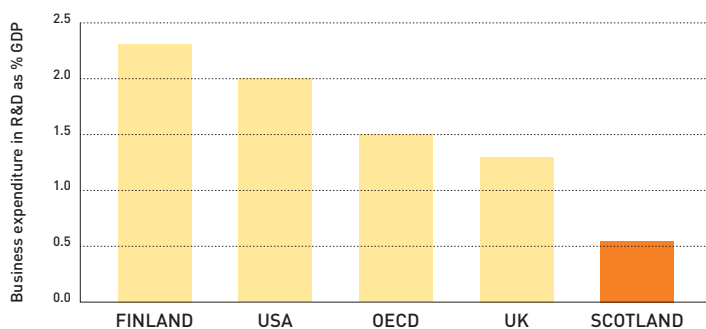
- Our universities are world level players in research, ranked third in the world for cited research published per head of population. Scotland has 13% of the highest ranked UK academic departments and attracts proportionally more academic research funding than the rest of the UK
- Scottish graduates account for 6.6% of the UK total and post graduates account for 9.2%
- Our record of establishing links with multinational companies is excellent, especially in the electronics and energy sectors
- We have a well-developed legal and financial infrastructure

However, a number of challenges and gaps have been identified that prevent us from benefiting from the global growth in technology;

- The overall level of research and development by companies, including multinationals, is below average
- Few of Scotland's strategic industries are based on large well-developed clusters. Existing clusters tend to lack critical mass, R&D intensity and strong local linkages
- The use of existing government and EU mechanisms to support company R&D is poor
- Graduate employment is low and many of the best graduates are lost

Overcoming the weaknesses in our high technology sector and developing our capacity for effective commercialisation of R&D through existing or new high growth technology companies is critical.

**Our ultimate aim - to make a real and lasting difference to the Scottish economy.**



SOURCE: ONS/OECD 1999



commitment  
leverage company  
research spend  
major strategic project  
focused

## A Mechanism for Growth

Many developed economies have institutes or organisations that help to optimise competitiveness and knowledge generation in their country. Examples can be seen all over the world, in countries such as Canada, Australia, Germany, Singapore, Taiwan, Finland and Sweden. Each Institute operates as part of an overall economic system, typically focusing on part of the development spectrum. In all cases they address the strengths and weaknesses of their particular economies. Many have shown significant long term, sustainable economic impact.

The ITIs will aim to do the same for Scotland.

They have been set up to identify emerging future market trends and develop technologies to make the most of these opportunities. The principles on which they operate are targeted at Scotland's specific needs:

- Attracting leading global players, local companies and researchers to participate in identifying future market opportunities
- Generating market-focused intellectual assets by commissioning work from leading researchers in existing research institutions in Scotland and world wide
- Creating pre-competitive market-focused technology platforms that will strengthen existing Scottish companies and / or create new firms
- Facilitating the movement of staff between research organisations and industry
- Retaining technology graduates for Scotland by providing career development opportunities
- Capitalising upon existing science and technology strengths to develop a critical mass of expertise and a reputation of successful exploitation in specific market niches
- Acting as a proxy for corporate R&D and significantly increasing the levels of R&D in Scotland
- Stimulating high technology companies in Scotland to create their own demand for near-market research.

**This flagship project has the potential to help companies make sound commercial decisions and generate substantial returns.**



## Market-Driven and Demand-Led

The three ITIs each focus on a clear area of market opportunity for Scotland – that of Life Sciences, Energy, and Communications Technologies & Digital Media (TechMedia) – here Scotland has already established technical strength and a distinguished reputation.

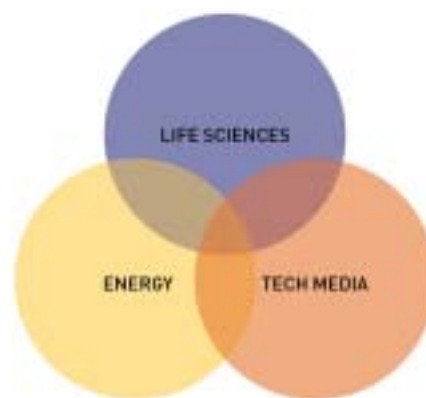
ITIs are not bricks and mortar research laboratories, a substitute for corporate R&D or a replacement for basic blue sky academic research; rather, they seek to tap into existing research capacity and fund work in areas necessary to capture future market opportunities.

The ITIs have a Scotland-wide remit, with the potential to support market driven enterprises in rural areas as well as in the industrial belt. Their strategy and operation will be actively supported and informed by participant member companies.

The ITIs or ‘hubs’ are located in Dundee (Life Sciences), Aberdeen (Energy) and Glasgow (TechMedia). Each ITI will have a core staff of approximately 15 people who will co-ordinate with the market and undertake programme management. Research activity will be commissioned through existing research organisations in Scotland and, where necessary, elsewhere.

The ITIs have a single Chairman and each ITI has a CEO. The CEOs are drawn from industry and have been chosen for their strong market links and global perspective.

Two inter-dependent advisory groups support the operation of each ITI in the areas of market focus and commercialisation. Both groups comprise global industrial players and world-leading experts.



In addition to a focus on their respective areas, all three ITIs will work closely together to capture and exploit opportunities in the overlap areas between each of them – where new markets may emerge with significant potential for Scotland.

**The ITIs are explicitly and expressly market-driven and demand-led - to address genuine business requirements.**



## Foresighting Emerging Markets

Each ITI will manage a sophisticated ongoing market foresighting process which will utilise existing global networks and sources. The aim of this is to identify future emerging global markets and business opportunities in which Scotland can play a leading role. Markets will be viewed in the light of Scotland's potential strengths in terms of both research and/or the company base. These markets will represent pre-competitive opportunities which offer potential for a number of companies.

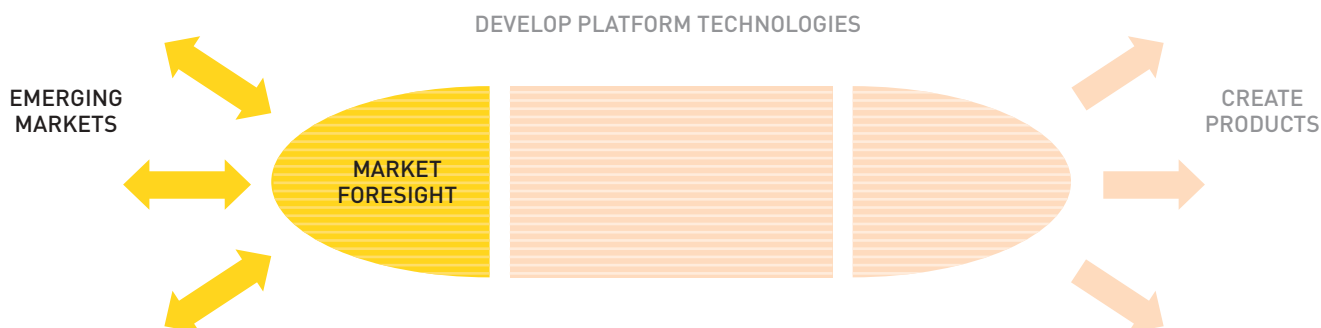
The ITI foresighting process aims to:

- Identify future emerging markets and business opportunities and highlight those in which Scotland can play a leading role

- Identify market-relevant scientific and technological developments
- Identify new business models and end user needs
- Maintain up-to-date competitive analysis

The ITI market foresighting will inform the future programmes of activity. In addition, this work will provide valuable and unique information which companies can utilise in their own strategic planning.

**Market foresighting can offer an informed and well-researched perspective on potential market opportunities for companies in Scotland.**



## Developing Platform Technologies

Market foresighting is only the first step. What the ITI then does is to define the knowledge required to transform the market opportunity into intellectual capital capable of generating real wealth. This means determining all the elements required to develop the opportunity. This will include determining the current status or availability of Intellectual Property (IP) and defining research needs.

Acquiring the Knowledge may involve working with both existing IP and commissioning new research. The ITIs will manage a portfolio of work including:

- Commissioning new research
- Building forward acquired IP
- Developing the value release
- Managing member companies participation in the research programmes

This process will be managed throughout by ITI Programme Champions who will work with members, contracted research organisations and other providers. Work will be commissioned from leading researchers in both Scotland and worldwide.

**The ITIs aim to generate market focused intellectual assets that can be diffused into companies in Scotland fast and efficiently.**





## Creating New Market Opportunities

The ITI model will stimulate economic growth by helping companies to acquire the necessary technology platform capabilities to address specific global markets. As these opportunities are at the pre-competitive stage, a number of different companies can develop their own competitive propositions building upon the technology platform. Commercialisation of the intellectual assets generated by any of the ITI programmes will be

controlled and managed by the ITI. This may involve diffusion via participant member companies, start up companies or licensing – whichever is the most appropriate course of action. The process is supported by a Commercialisation Advisory Group for each of the ITIs. These groups will comprise strong representation from industry and key commercial areas including the legal and financial sectors.

**The ITIs can help companies develop high value innovative solutions to set them ahead of the market.**



world wide perspective

# active participation

global market opportunities

## Sharing the Benefits

ITI membership has evolved to reflect feedback from industry and other Institutes. It is aimed at maximising diffusion into the Scottish economy while ensuring intellectual property (IP) requirements are maintained. Membership will involve:

- General membership with a relatively low annual fee to encourage smaller companies in Scotland to become involved
- Programme membership in which companies will be able to participate in the research process, for an additional cost payable either as a fee or in kind such as the provision of services to the project

ITI membership is open to organisations throughout the world and is in no way restricted by the geographical location of each ITI.

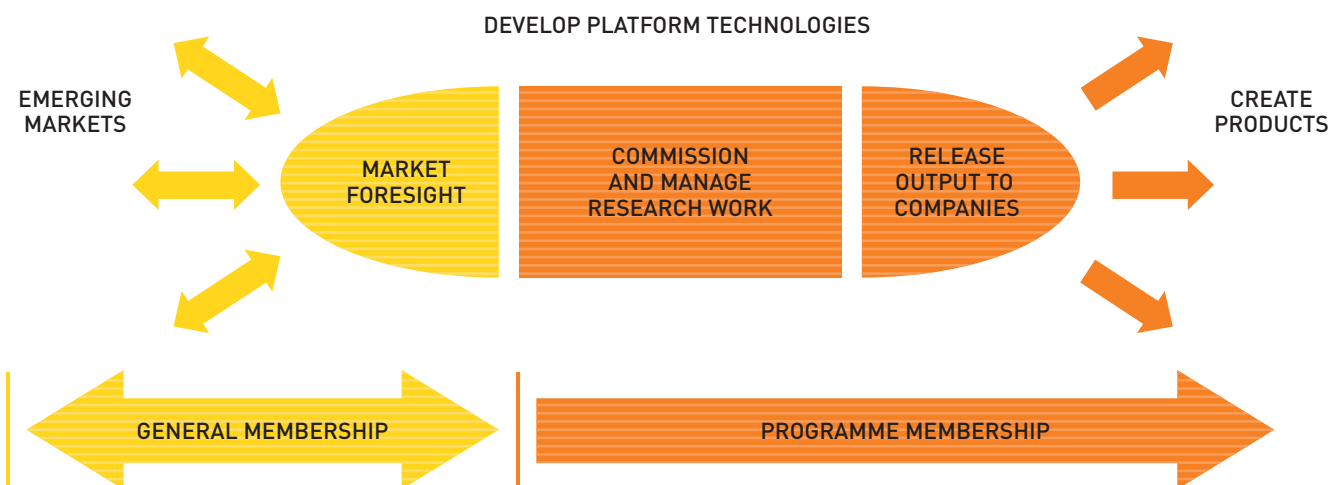
Companies will gain substantial benefits from General membership including:

- Access to valuable market foresighting information
- Entry to a global network of companies and researchers in key market sectors

In addition, benefits from programme membership will include :

- The opportunity to access and participate in world-class technology development to realise new market opportunities
- The ability to focus internal research spend and share the burden of strategic technology development

You can place a request for further information on the Scottish Enterprise website – [www.scottish-enterprise.com/iti](http://www.scottish-enterprise.com/iti)



## Releasing the Value

A comprehensive impact assessment carried out for the ITI programme indicates the potential for substantial economic benefits accruing to the Scottish economy. The ITIs will play a vital part in:

- Increasing and sustaining the birth rate of indigenous high value-added, technology-based companies
- Increasing the level of exchange between the research and the corporate sector in Scotland, helping in the transfer of skills and increasing corporate R&D
- Further establishing and connecting Scotland into key overseas markets, promoting Scotland as an important centre for specific technologies and as a location for foreign direct investment, portfolio direct investment and mobile skilled labour
- Creating a sustainable flow of market relevant technology companies that will attract more local and international venture capital to Scotland
- Significantly increasing the retention of graduate and professional skills in Scotland

**The ITIs can become a key component in achieving a Smart Successful Scotland.**

## More Information

Further information is available at  
[www.scottish-enterprise.com/iti](http://www.scottish-enterprise.com/iti)

**Companies** please contact your Local Enterprise Company or phone the Scottish Enterprise helpline on 0845 607 8787 or 0141 228 2000 (for outside Scotland).

**Companies in Highlands & Islands area** please contact your Local Enterprise Company or Highlands & Islands Enterprise on 01463 234 171.

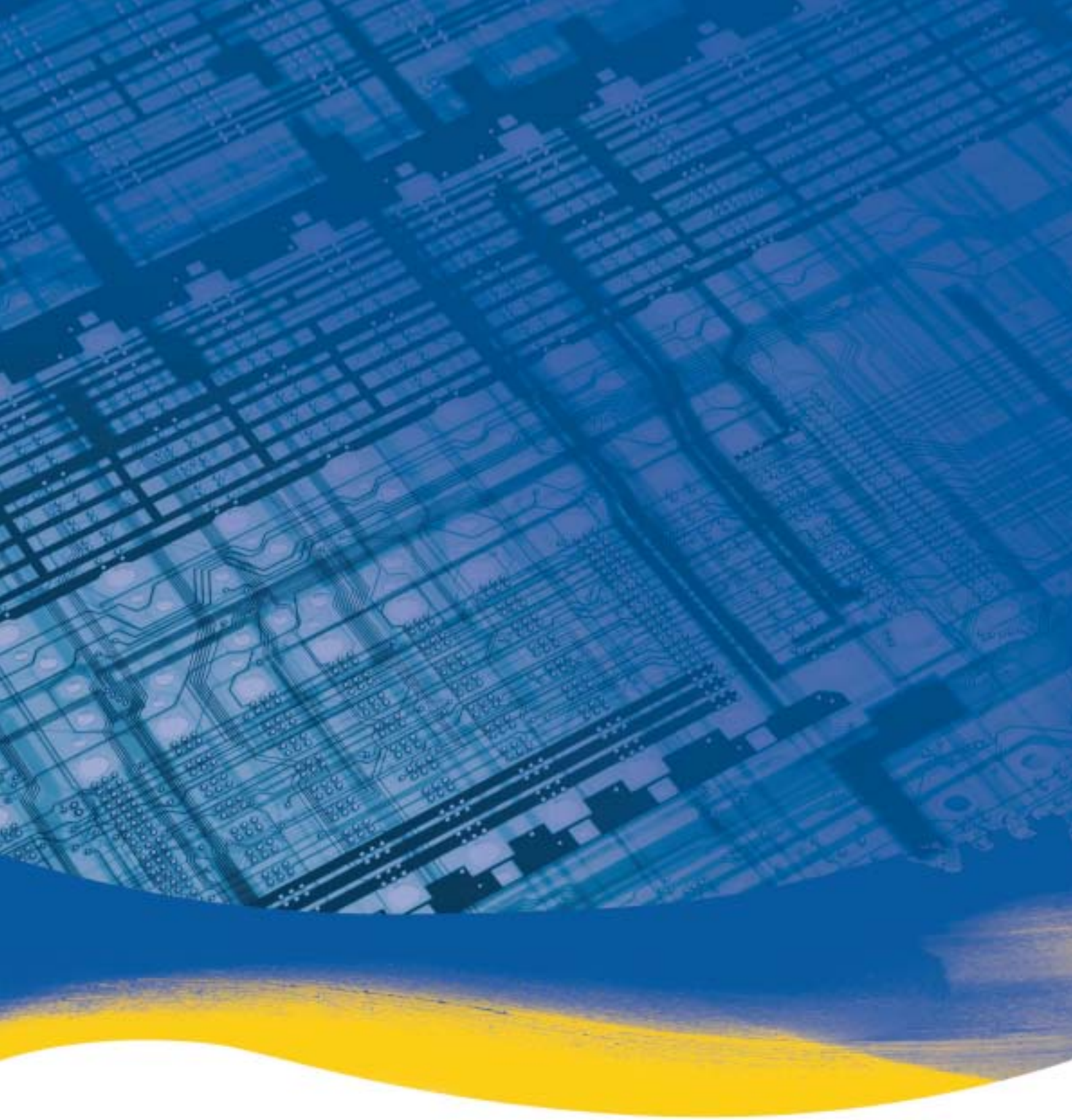


**Highlands & Islands**  
ENTERPRISE

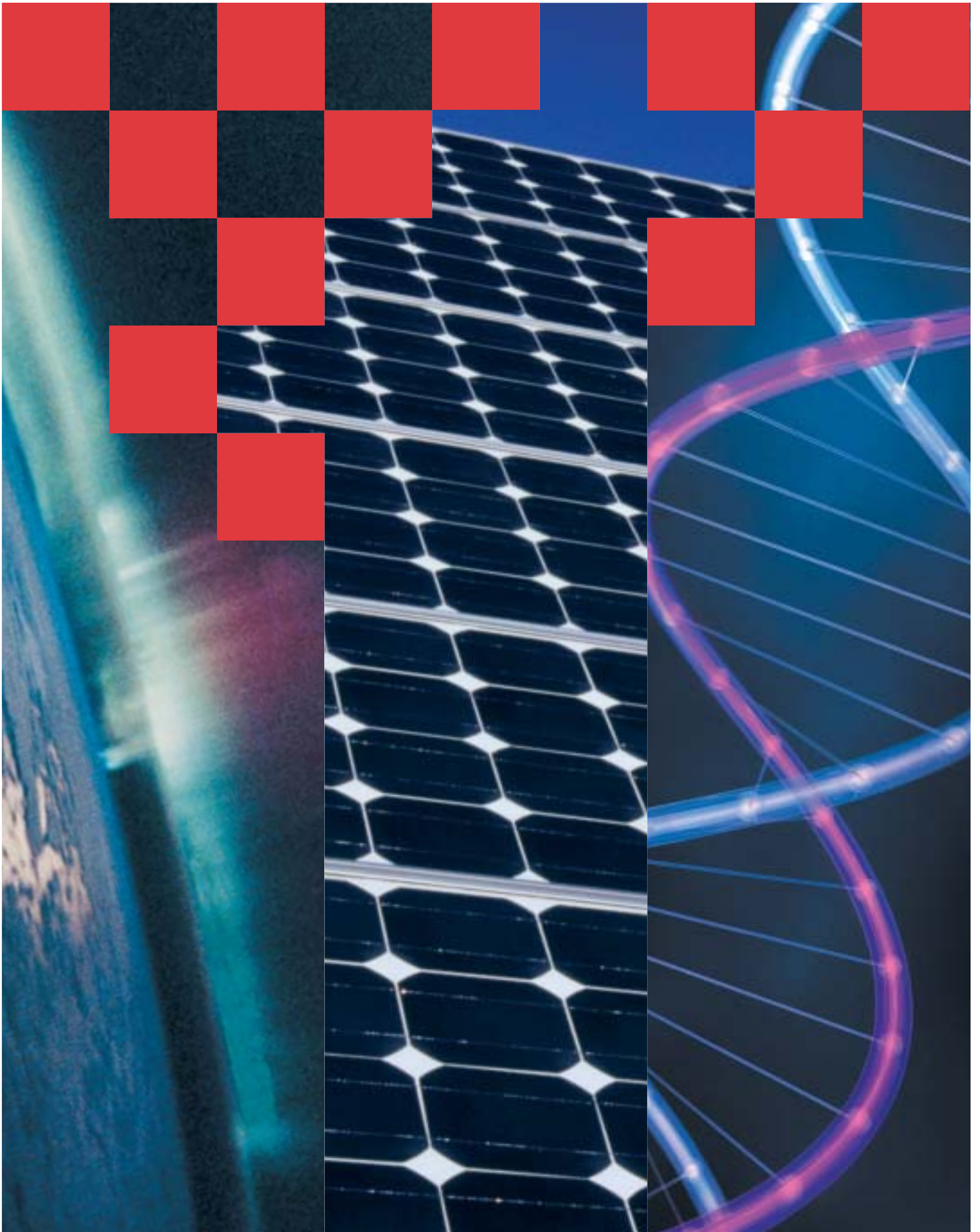


**Scottish Enterprise**





Scottish Enterprise



# Innovating tomorrow's industry

Involvement  
in ITI  
Scotland  
will bring  
benefits to all



The launch of ITI Scotland represents significant opportunity for companies, universities and individual researchers in Scotland and worldwide.

Involvement in ITI Scotland will bring benefits to all. Companies can access and participate in market driven pre-competitive R&D that will exploit emerging global markets and build future sustainable profit streams. University research departments and researchers will have greater collaboration potential with industry creating new avenues of research and technology transfer thereby strengthening longer term partnerships with industry.

The three ITIs – Energy, Life Sciences and Techmedia – are completely new vehicles for Scotland. They will help stimulate company and research base growth by identifying future emerging markets and developing the technology required to exploit these commercially.

A minimum investment of £450 million in research over the next ten years will be focussed on delivering new pre-competitive technologies upon which companies can develop their own proprietary products or services capable of addressing global markets.

Through their membership companies can access valuable market foresighting information, be part of a global network and help focus their strategic internal research.

ITI Scotland aims to increase the overall company research investment in Scotland and thus provide a vital contribution to the longterm development of businesses in Scotland.



Scotland  
has many  
valuable  
assets

### **Building on Scotland's Strengths**

Scotland has many distinctive and valuable assets that should give us a head start in creating a dynamic economy where companies are strategically aligned to emerging markets and capable of uniquely addressing their commercial potential.

- Scotland's Universities are world class players in research, ranked third in the world for cited research per head of population. Scotland has 13% of the highest ranked UK academic departments and attracts potentially more academic research funding than the rest of the UK
- Scotland's record for establishing links with multi-national companies is excellent
- Scotland has a well-developed legal and financial infrastructure and an excellent level of graduate output

ITI Energy, ITI Life Sciences and ITI Techmedia will focus on market areas in which Scotland has particularly strong company and research capabilities. ITI Scotland will build on Scotland's strengths for the benefit of its company base.

# Opportunities for Growth

ITI Scotland  
will stimulate  
increased  
company  
R&D



ITI Scotland also recognises the current challenges that are faced by companies in Scotland and that these are inhibiting our performance in the global arena.

- The overall level of R&D by companies, including multinationals, is below average
- The use of existing government and EU mechanisms to support company R&D is poor
- Too few high growth technology companies
- Graduate employment is low and many of our best graduates are lost

By combining sophisticated foresighting, focussed investment, company capabilities and research expertise ITI Scotland will provide the mechanism to stimulate increased company R&D aligned to future global market opportunities.

## What is an ITI?

- It is a centre or “hub” for identifying, commissioning and diffusing pre-competitive research
- Its activities will be driven by new emerging markets
- It will manage intellectual assets to maximise commercial and economic value
- It is open to all companies and research institutions who will actively participate in its activities

- There are three ITIs – Energy, Life Sciences, Techmedia, each focussing on their respective market areas but also utilising their activities and knowledge to identify potential overlap, or “white space”, opportunities

- ITI Scotland, the group holding company, will be responsible for developing the overall infrastructure and shared services

## Importantly, an ITI is not:

- A bricks and mortar research laboratory
- A substitute for company driven research
- A replacement for basic academic research



The immediate priority of the ITI executive team will be to develop the exact detail of the model.

#### **How will the ITIs operate?**

In essence the key elements will include:

- **Market foresighting:** by utilising global networks and sources, each ITI will manage a sophisticated foresighting process which aims to identify demand led, emerging global markets. This will be the basis for identifying areas of market opportunity on which the technology development activities of the ITI should focus
- **Technology development:** the ITI will define the knowledge required to develop the pre-competitive technology focusing on the areas of market opportunity identified in the foresighting activity. Knowledge acquisition will involve a number of areas including; assessment of existing IP and commissioning specific new research

- **Membership:** will be structured to encourage access by a wide company base in Scotland and internationally. Membership will provide access to valuable foresighting information and the opportunity to actively participate in programme development

#### **Company Benefits**

ITI Scotland is a unique vehicle and active participation offers companies a number of benefits:

- Access to valuable, global foresighting information
- The opportunity to access and participate in world-class technology development
- The ability to focus internal research spend and share the financial burden of strategic technology development
- Entry to a global network of companies and researchers in key market sectors



From left to right:  
Roger Dickinson,  
Gordon Campbell,  
John Chiplin,  
David Creed

ITI Scotland will be driven by a highly experienced team from industry. Let us introduce the team that has launched ITI Scotland.

**Gordon Campbell  
(ITI Chairman)**

ITI Scotland is headed by our Chairman, Gordon Campbell who is also Chairman of Babcock International Ltd. A Cambridge graduate, Gordon started his career at Courtauld Research. He became Chief Executive of Courtaulds in 1995 and ultimately negotiated the sale of Courtaulds to Akzo Nobel in a £2.2 billion transaction. Babcock International's work with the defence and civil sectors gives Gordon a clear understanding of government and the public sector and he has close links to the academic world through the Royal Academy of Engineering, where he is a vice-president, and the Institution of Chemical Engineers, where he is a

former President. He is also a non-executive director of British Nuclear Fuels.

"I am privileged to be working with such a talented group of individuals who will help realise the true potential of ITI Scotland and the benefits this activity will bring to Scotland. The new team brings a wealth of experience to the table, both in terms of market knowledge and in establishing, running and growing businesses.

Our priority over the next 2-3 months will be to meet the business and research providers with whom we will be working, to learn more about their hopes and aspirations and establish how we are going to work together in the future."

**Roger Dickinson  
(Group Holding Company CEO)**

Roger Dickinson has been a director and lawyer for over 20 years focusing on the commercial exploitation of science in a number of industry sectors – electronics, utility, engineering and life sciences. In that time he has built a wide range of contacts in the UK and abroad with academia, industry and the financial community.

Roger's industry experience includes Gemini Genomics, Domino Printing Sciences, AWG and the British Technology Group.



### **David Creed (Techmedia CEO)**

David Creed has had an extensive career with Sony, the world leader in electronic products for consumer and professional markets, entertainment and games sectors.

Joining Sony Broadcast Ltd's laboratory in Basingstoke UK in 1981 he worked on the development of innovative digital products for the broadcast and television industries worldwide. He became head of the lab in 1986 growing its function and importance internationally.

David led the European business unit responsible for High Definition Video and Mass Storage products and applications. Between 1997 and 1999 he was Managing Director of UK based Sony Digital Network Solutions where he worked on digital video broadcasting products and services.

In 1999 he was appointed VP European Research & Development and Deputy CTO for Sony Europe in Stuttgart, Germany. This role encompassed a broad range of technology development, patent management, technical standards and new business exploitation.

### **John Chiplin (Life Sciences CEO)**

John began his career working in research for GlaxoSmithKline in the area of H2-antagonists before moving to MDL Information Systems, specialists in 3D drug development software.

In 1987 John moved from MDL to Biosym Technologies, the world's largest supplier of molecular design software which shortens the pharmaceutical product discovery cycle. During his time as Vice President, Business Development,

Biosym sales grew from zero to \$35million and market capitalisation from \$5million to \$108million.

From 1995 to 1999 John served as CEO of Superscape plc UK, one of the country's leading publicly traded virtual reality technology companies.

John left Superscape in 1999 to set up GeneFormatics in San Diego, California a business designed to revolutionise protein function determination. Subsequent mergers have propelled the company into a leading position within the drug discovery marketplace.





# Governance Structure

