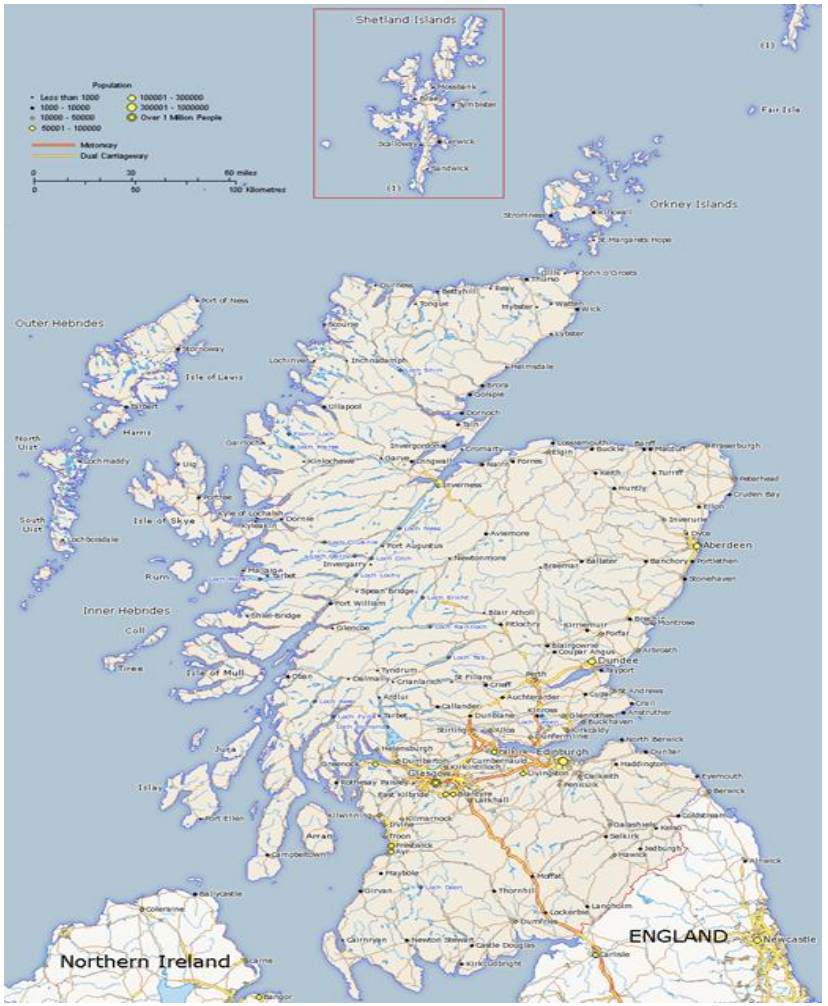
Scotland – Development & Implementation of RIS3 Priorities

Population	**Around 5.3 million**
Area	**78,772 km²**
Cities	**Edinburgh**
	Glasgow
	Aberdeen
	Dundee
	Inverness
	Stirling
	Perth
Business Statistics	**341,360 businesses**
	339,110 SMEs
	1.09m employees

Devolved Administration, Established 1999, Current Administration , 2011

Responsibilities include health, education, justice, rural affairs, housing and transport.

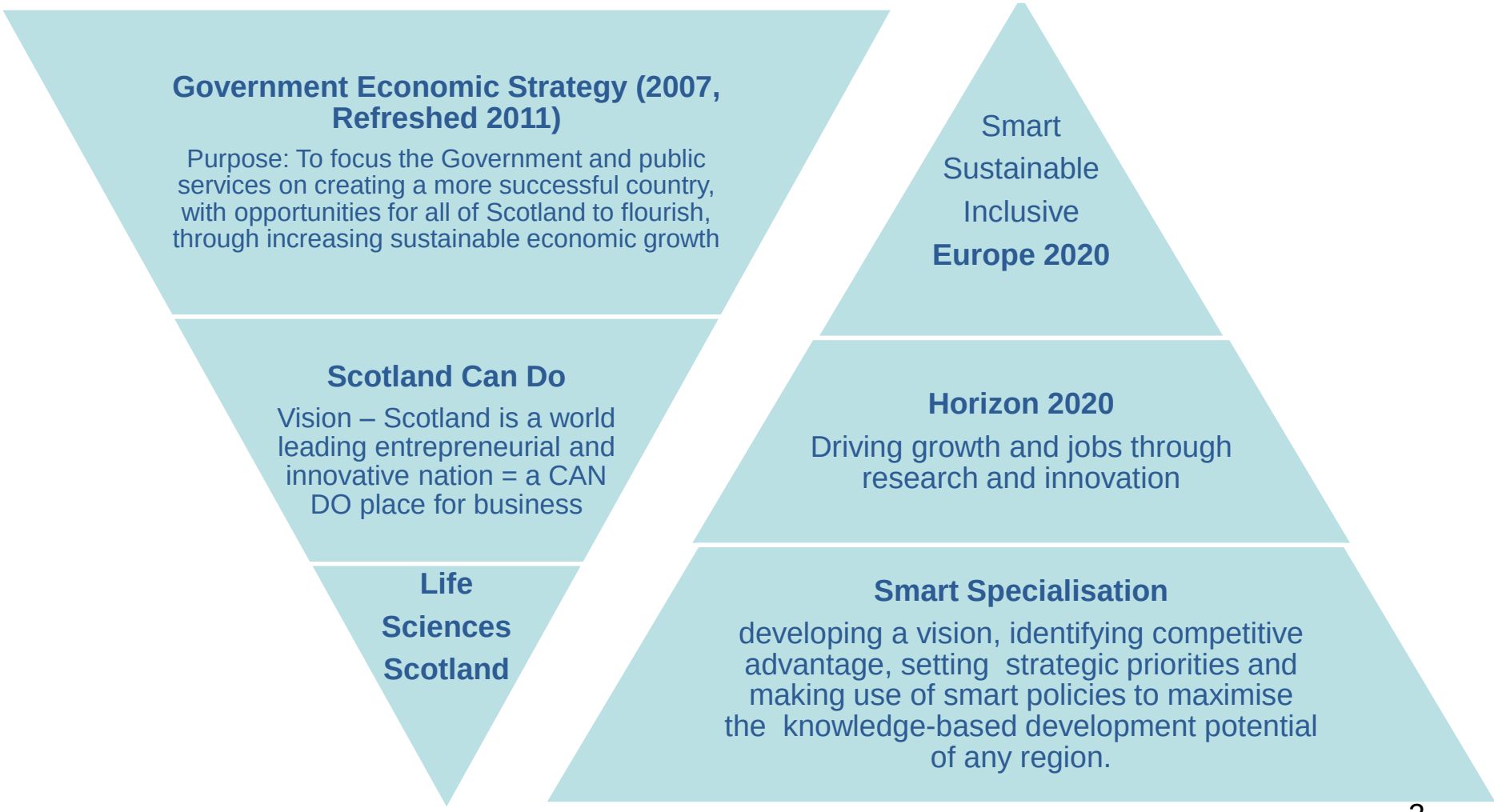


Norrköping, 1-2 April 2014

Professor Jessie Kennedy, Director of Institute for Informatics and Digital Innovation, Napier University, Edinburgh

Dr Ken Sutherland, President, Toshiba Medical Visualisation Systems

Scotland – Policy Mix for Visualisation and Life Sciences



Scotland – Policy Mix for Visualisation and Life Sciences

5 Priorities of Smart Specialisation	Scotland's Approach to S3
That policy support and investments are focussed on key priorities and challenges	GES identifies key priorities for Scotland and key challenges to be addressed
Regions identify and build on strengths, competitive advantages and potential for excellence	Food & Drink, Sustainable Tourism, Financial & Business Services, Creative Industries, Energy, **Life Sciences**
Support for technological as well as practice-based innovation and stimulation of private sector investment	Enterprise Agencies & Industry Groups, Innovation Centres, Knowledge Transfer Partnership
That stakeholders are involved and encourage in innovation and experimentation	"Team Scotland" approach brings together government, academia, enterprise agencies, private sector and skills agencies
There is a regime of monitoring and evaluation systems that is evidence-based.	Scotland Performs – evidence based indicators of economic performance & development of performance monitoring tool for entrepreneurship & innovation.

Scotland – Why Life Sciences

Strength	Supporting Evidence
Economic Importance	2012 – sector employed around 32,000 people in 650 companies and organisations (SMEs, MNCs, NHS, Research Institutions) and in 2010 turned over around £2.9 billion per annum, with GVA at around £1.5bn.
International Reputation	Global life sciences companies present e.g. Charles River Laboratories, Life Technologies (Invitrogen), Alere, GlaxoSmithKline, Toshiba Medical International reputation with world-leading research strengths in areas including neurosciences, cancer and non-human health related fields such as animal health. And in emerging areas such as stem cells and regenerative medicine. Scotland be named in the 2012 Mobius Life Sciences Start-Up report as the leading location for life sciences start-up companies.
Supportive Policy Environment	Scotland's life sciences strategy, Industry Leadership Groups, initiatives such as the Statement of Intent on Innovation for Health and Scottish Investment Bank support the sector.
Emerging Sector Opportunities	2011 Life Sciences Strategy identified regenerative medicine, stem cells and translational medicine and medical technology, especially in assisted living and telehealth, pharma services and stratified medicine as potential growth areas for our business base.

Scotland – Industry Leadership

- Responsible for developing and delivering forward looking industry strategies
- The groups provide strategic leadership and advice to industry and the public sector in Scotland, drawing on their members' national and international expertise on global trends and issues and the niche areas where Scotland has global competitiveness.
- Industry Leadership Groups comprise leading business figures drawn from across the private sector as well as senior representatives from the public sector including Scottish Enterprise, Scottish Government and key stakeholders

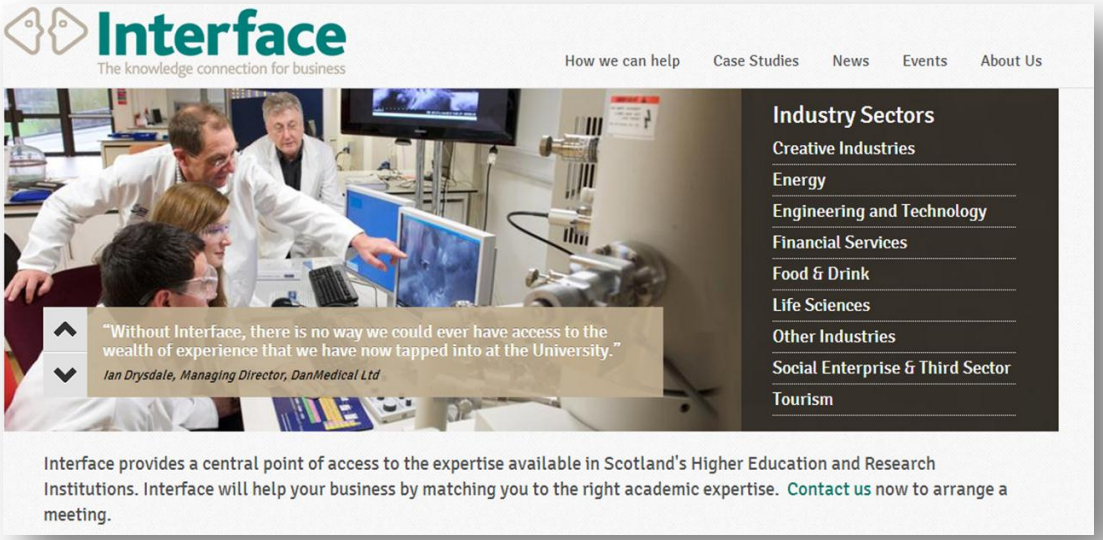
Scotland – Life Sciences Industry Leadership Group

Scotland – Life Sciences Research Pools

- Created by the Scottish Funding Council in 2003
- Encourage leading researchers to pool resources and maximise their contribution to academic and economic development
- Can help to innovate and grow through providing a single front door to academic expertise.
- Concept of access, rather than ownership
- 10 research Pools in sectors including energy, life science and computing.
- Innovative Medicines Initiative: investment in the European Lead Factory of €80 million from the EC and a further €91 million of in-kind support from participating companies.

SULSA
Scottish Universities Life Sciences Alliance

Scotland – Interface – Knowledge Connection for Business



- Established 2005
- 776 business & academic collaborative projects initiated
- 74% of businesses have not previously worked with that academic partner
- Innovation Vouchers programme subsidises the costs of academic research collaborations (5k) for micro, small and medium companies.

Scotland – Life Sciences Innovation Centres

- Scottish Funding Council investing a total of £110 m over 6 years, expect 2000 jobs created over the next five years
- Industry led in collaboration with academia

- Stratified Medicine;
- Sensors and Imaging Systems;
- Digital Health;
- Data Science Lab.

- Looking to build capacity and capability to participate in EU programmes e.g. Horizon 2020

Scotland – Life Sciences Innovation Centres

SMS-IC: making medicine personal

The Scottish Funding Council has announced backing for the creation of two new innovation centres based in Glasgow that will connect research to industry. The Stratified Medicine Scotland Innovation Centre (SMS-IC) and the Innovation Centre for Sensor & Imaging Systems (CENSIS) will offer Glasgow academics new pathways that support the journey from blue sky thinking to business impact.

Scotland – Life Sciences Innovation Support

- Edinburgh BioQuarter
  - NHS Hospital
  - University of Edinburgh Research capability
  - Industry Incubator Facility

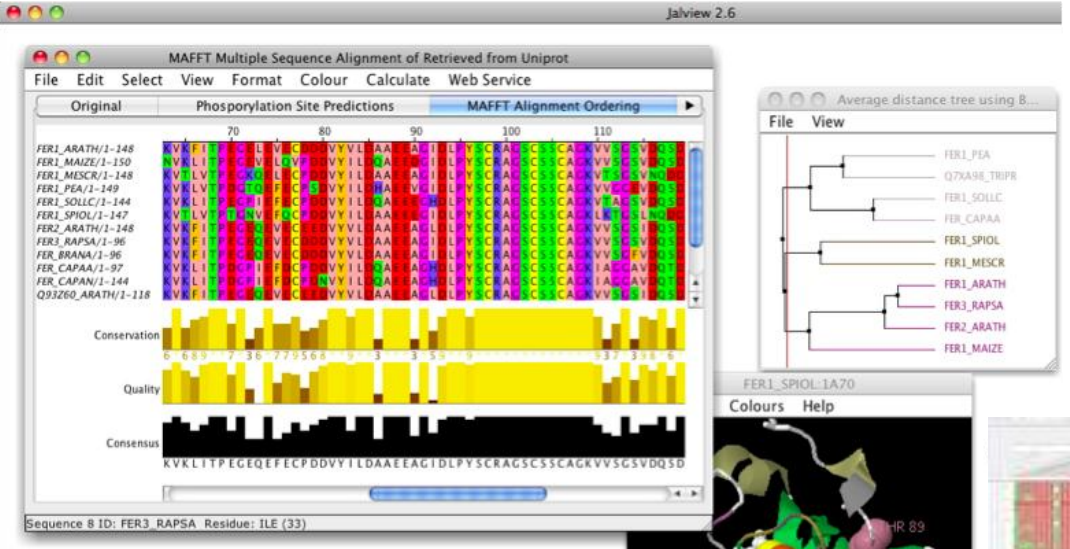
Home | Locations | BioCity Scotland

BioCity Scotland has quickly established itself as a centre point in Scotland's life sciences.

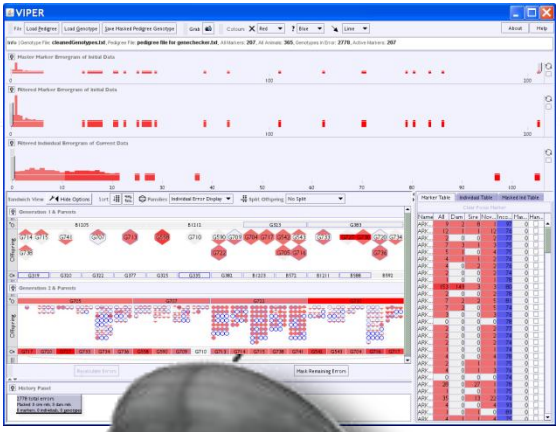
10 new businesses started at BioCity Scotland in the last year

Scotland – Life Sciences Biological Visualisation Network

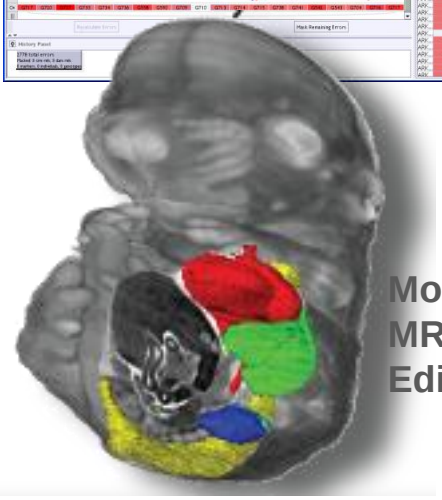
- BBSRC funded - 3Yrs: 1st March 2014 – 28th Feb 2017
- Central point of contact for Biological data visualisation
- Forum for discussing/collaborating on cutting edge biological data visualisation techniques
- All areas of biological visualisation:
  - Molecular, Genomic, Pathways, Cells and Organisms, Anatomy and Spatial Data, Phylogenetics, Populations
- Scotland has very strong presence
  - Existing academic groups developing new visualisation techniques…



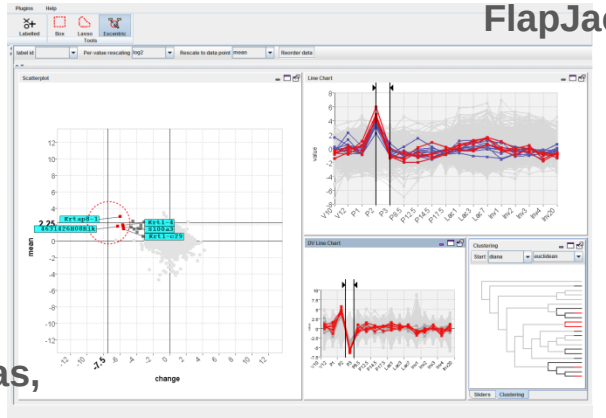
Jalview, University of Dundee



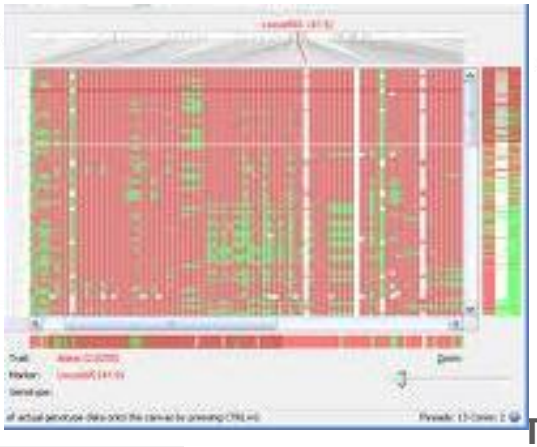
VIPER,
Edinburgh Napier



Mouse Atlas,
MRC HGU,
Edinburgh

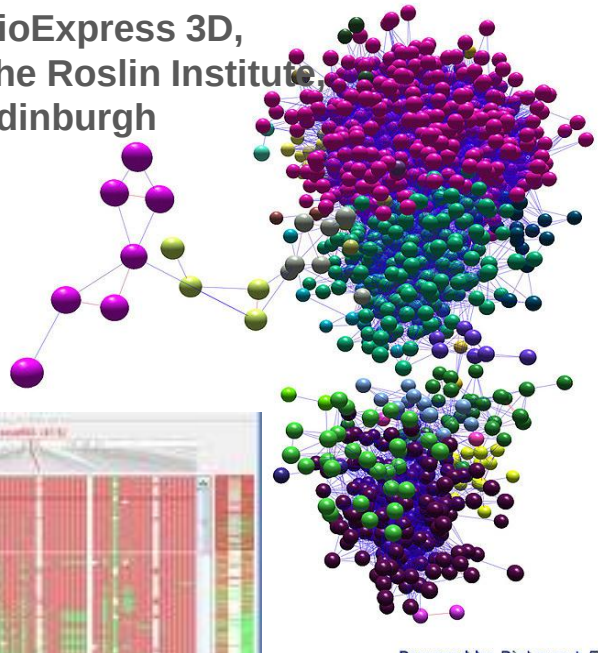


MATSE,
Edinburgh Napier

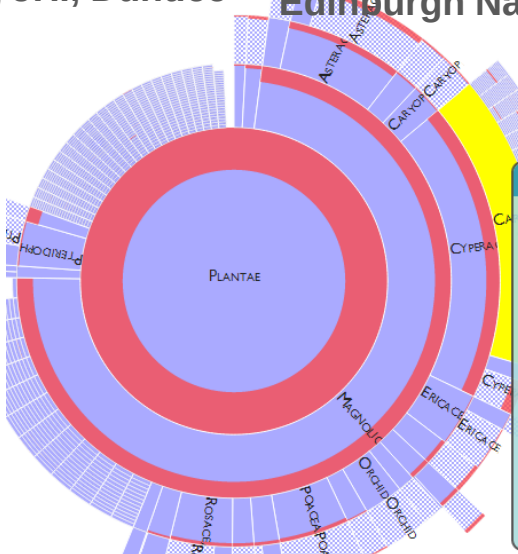


FlapJack, JHI, Dundee

BioExpress 3D,
The Roslin Institute,
Edinburgh



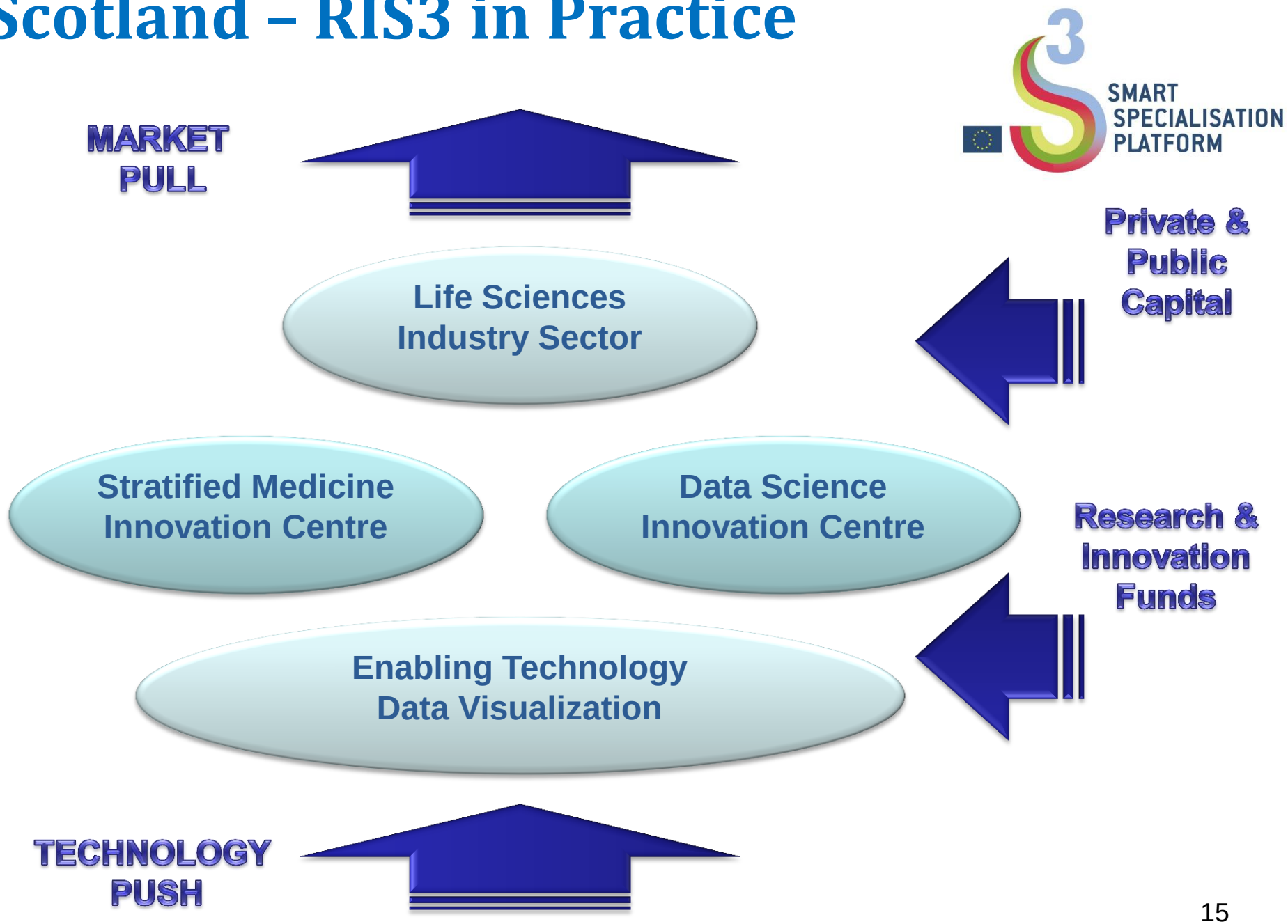
Taxonomy Visualisation
Edinburgh Napier



Scotland – Life Sciences – Visualisation Opportunities through Smart Specialisation

1. Toshiba Medical in Edinburgh needs expert support in Data Visualization and User Interaction Design.
2. Napier University expertise available locally and collaborative project initiated.
3. Napier University also develops visualization tools for gene expression data.
4. Toshiba Medical team develop interest in Stratified Medicine and approached Innovation Centre (SMS-IC) in Glasgow.
5. Core challenge identified as Visualization of genetic information **and** imaging data in single user tool.
6. Watch this space….

Scotland – RIS3 in Practice



Scotland – RIS3 Next Steps

- Take forward actions outlined in Scotland CAN DO.

- Seek opportunities to share and engage with other Regions of EU who have RIS3 experience.

Scotland – Summary

- Scotland's Government Economic Strategy is very well aligned with the goals of RIS3
  - well focused and has clearly defined priorities, initiatives and target sectors.

- We believe we have demonstrated today some of the practical ways in which RIS3 are being implemented today in Scotland and the potential opportunities that effective implementation can bring.

- With 'Scotland CAN DO' we have an action plan to leverage RIS3 and become a World-leading Entrepreneurial and Innovative Nation.

Scotland – Questions/Issues

- We can see how as we drill down into our target market sectors we will recognise the need to develop a broad set of core technology. This core technologies could be applicable in non target areas.
  - Should we forego these opportunities to stay focused on designated target sectors?

- Should we, or how do we, foster effective co-opetition between smart specialisms in different regions?