

# Northern Ireland: Towards a RIS3 strategy

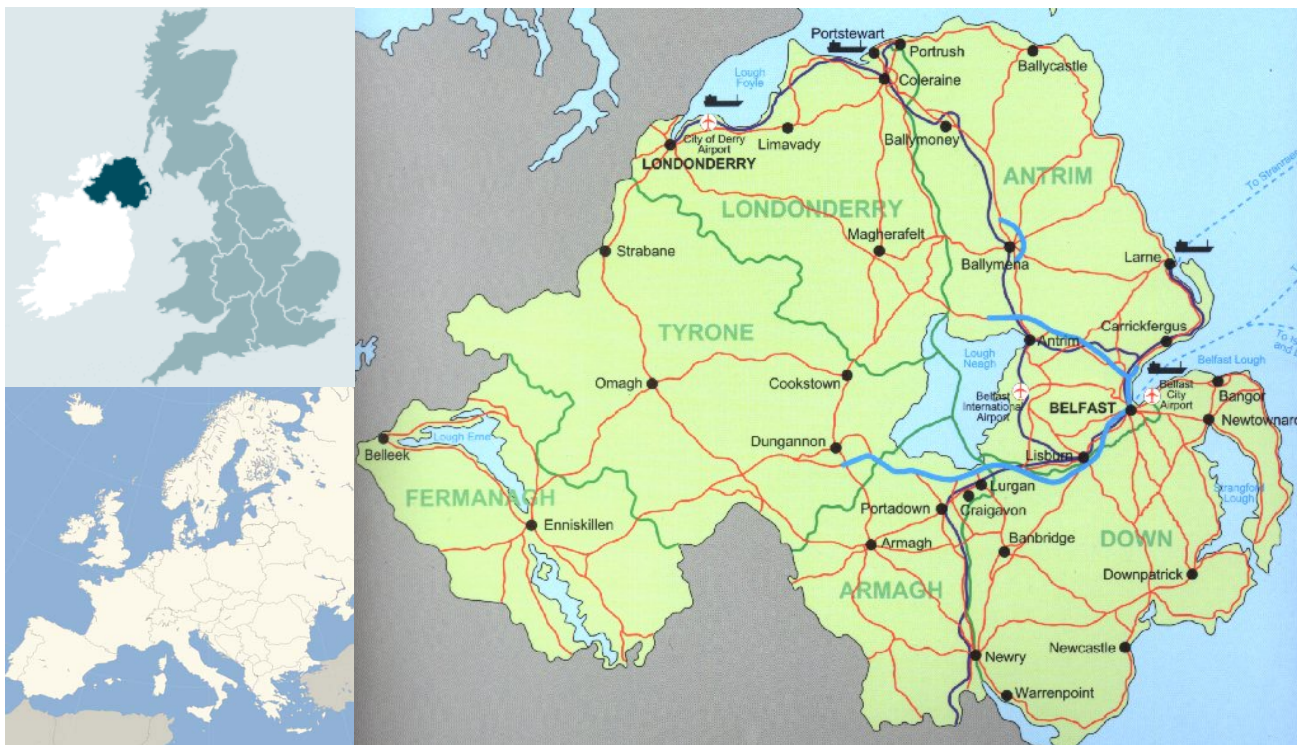


Seville, 3rd May 2012  
Ciaran McGarrity  
Michael Lilley

# Presentation Structure

- 1 Expectations
- 2 Regional Context
- 3 Place Based dimension of the RIS3
- 4 Looking beyond Regional boundaries
- 5 Entrepreneurial dynamics
- 6 Governance
- 7 Critical Mass and Priorities
- 8 Implementation and budgets
- 9 Measuring the Process
- 10 Summary and next steps

## 2. Regional Context

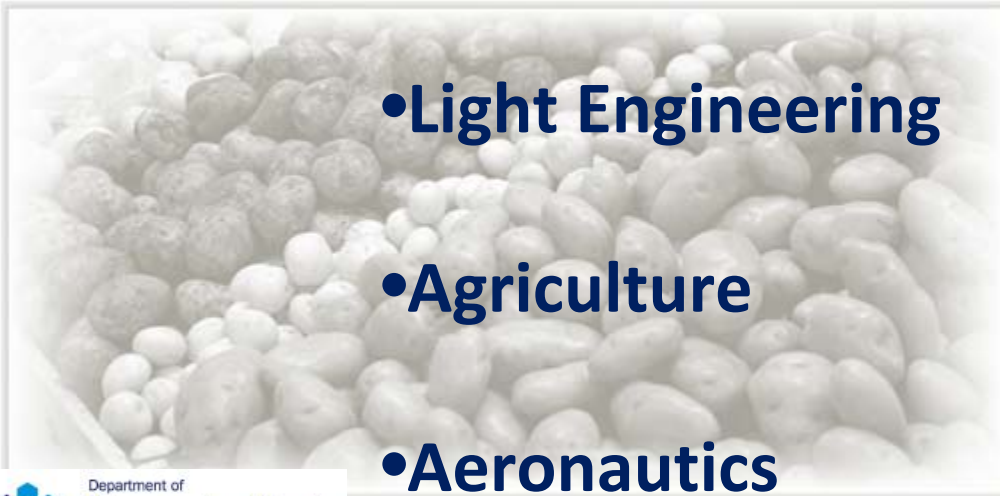


- 1.8 million inhabitants
- Smallest of UK regions
- Devolved Government
- Large public sector
- Large service sector
- SME dominated
- 480 companies out of 80,000 involved in R&D
- Low in EU Innovation Scoreboard

# Regional Strengths

## Historical Global Specialisations in;

- Shipbuilding
- Linen/ Textiles
- Light Engineering
- Agriculture
- Aeronautics



## 2. Regional Context

### “Non” Smart Specialisation- 1970’s & 1980’s



## 2. Regional Context



Parliament buildings, Stormont



Titanic Signature Building



Northern Ireland Science Park  
(NISP)

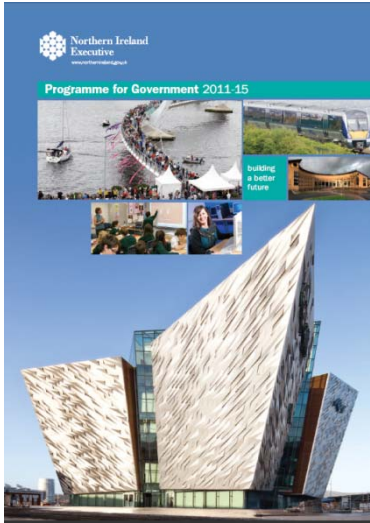
## 2. Regional Context

- Civil Conflict
- Good Friday Peace Agreement 1998
- Devolved Administration 2007
- 108 members in N.I. assembly
- All main parties represented in Government
- Mandatory Coalition
- Innovation, Research, Development and Creativity high on the political agenda

# 2. Regional Context



## Programme For Government



## Economic Strategy- Strategic Framework



## Innovation Strategy (In preparation)



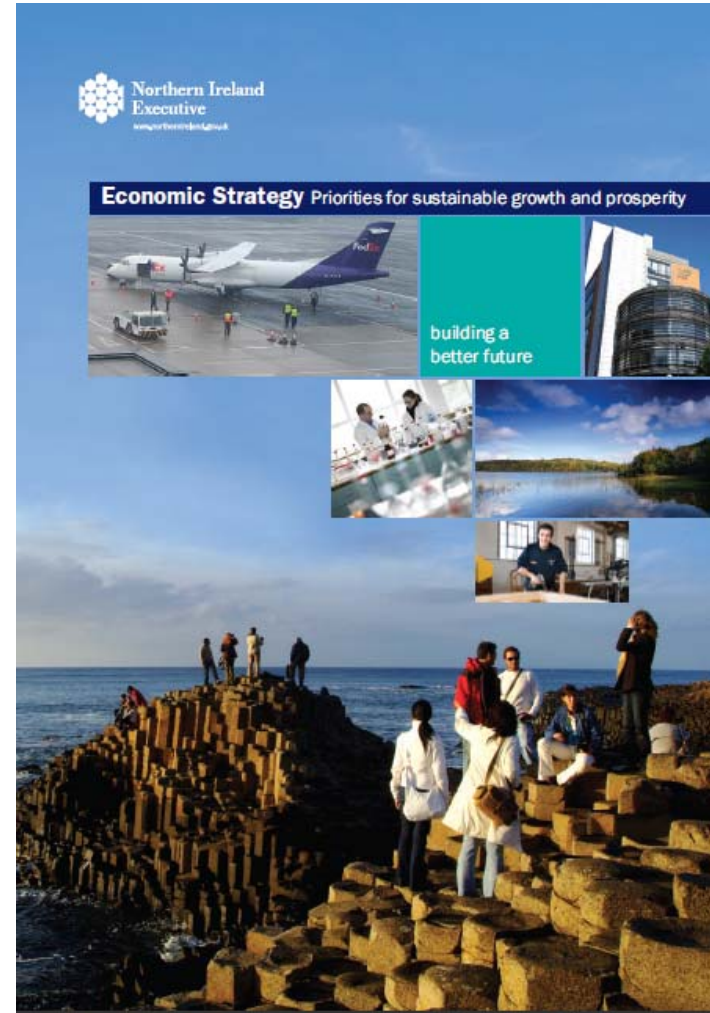
## 2. Regional Context

### Economic Strategy for Northern Ireland 2012

Focus on;

- Innovation
- Export Led Growth
- **Regional Strengths**

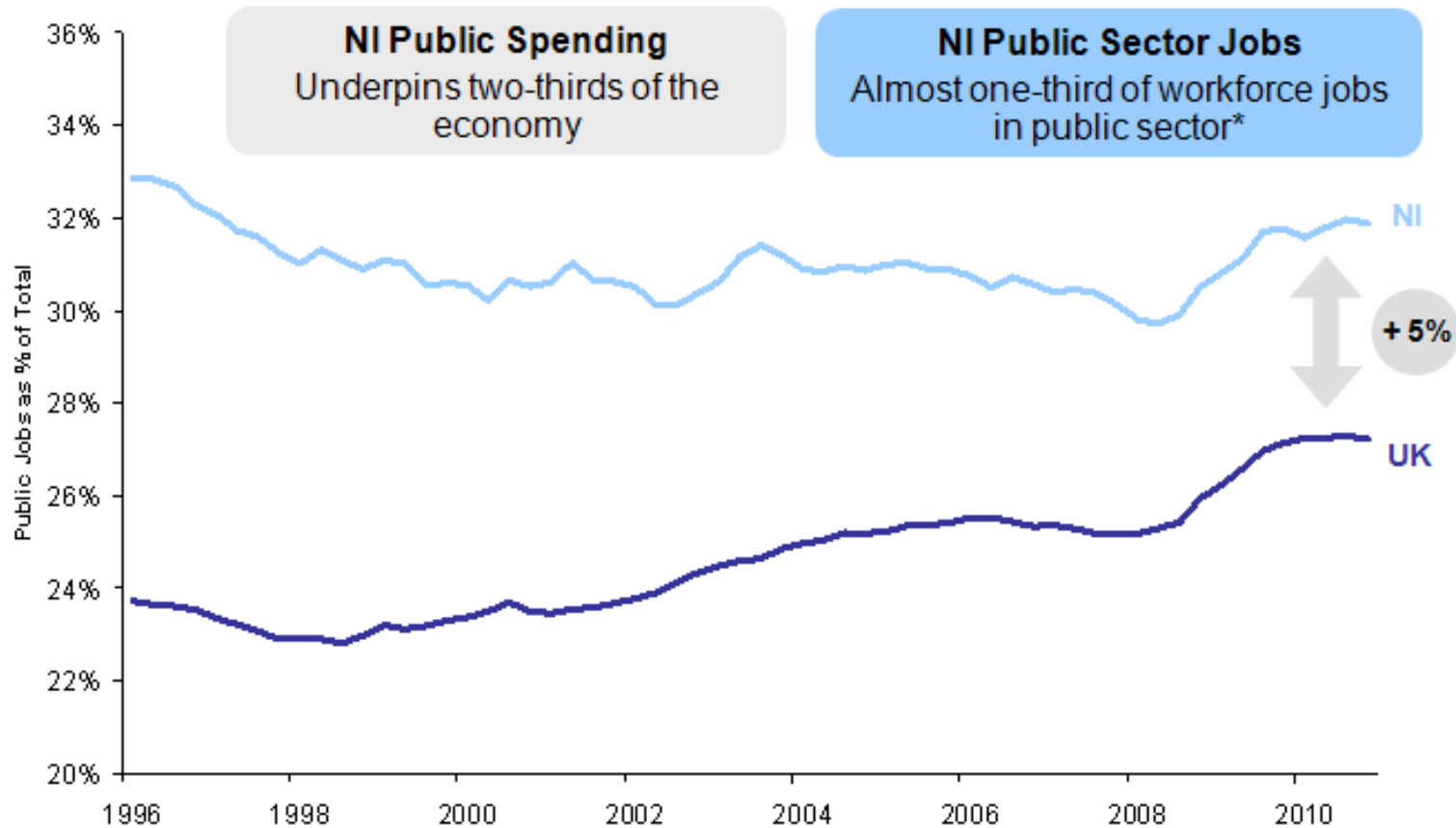
*“An economy characterised by a sustainable and growing private sector, where a greater number of firms compete in global markets and there is growing employment and prosperity”*



## 2. Regional Context

Public Sector dominated Economy

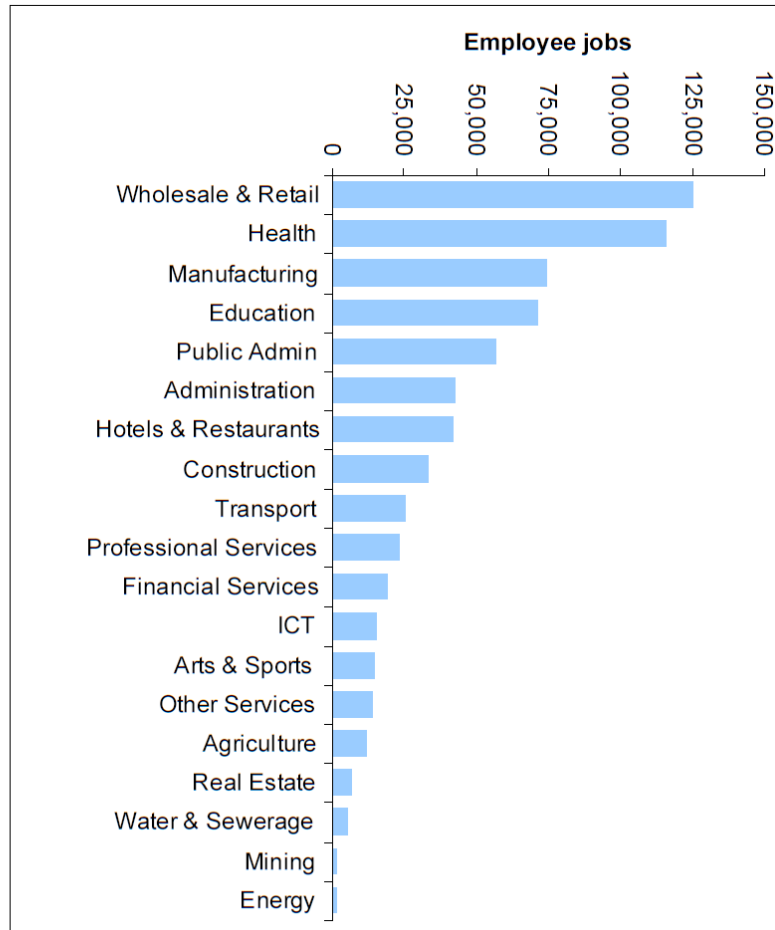
- Public sector expenditure 63% of GDP



# 2. Regional Context

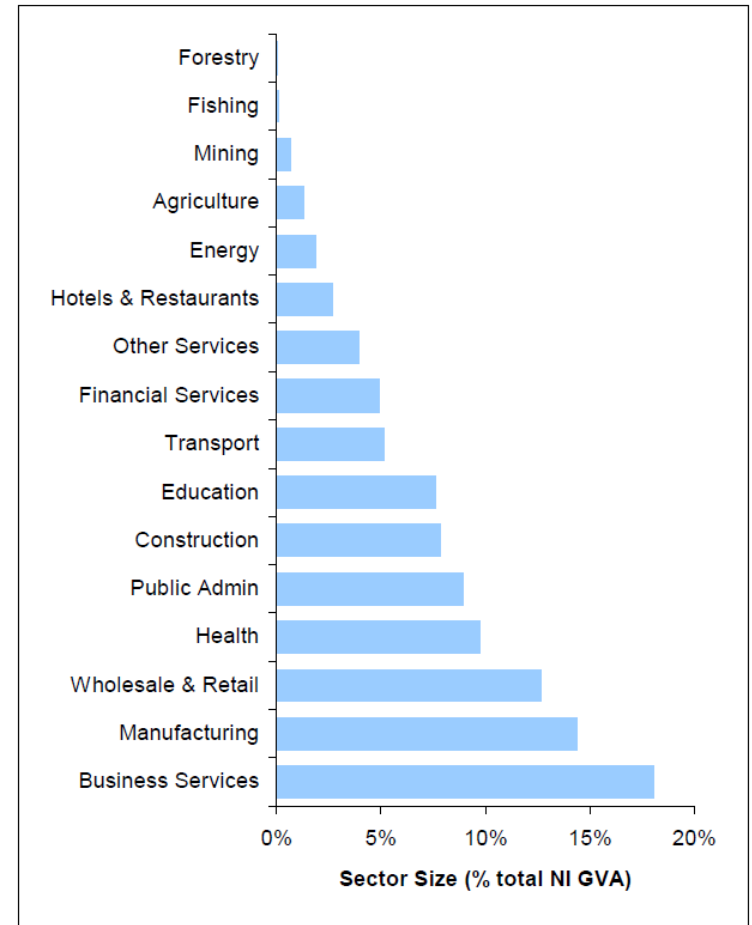


Jobs by Sector



Source: Quarterly Employment Survey, DFP

Northern Ireland Economy Structure (GVA)

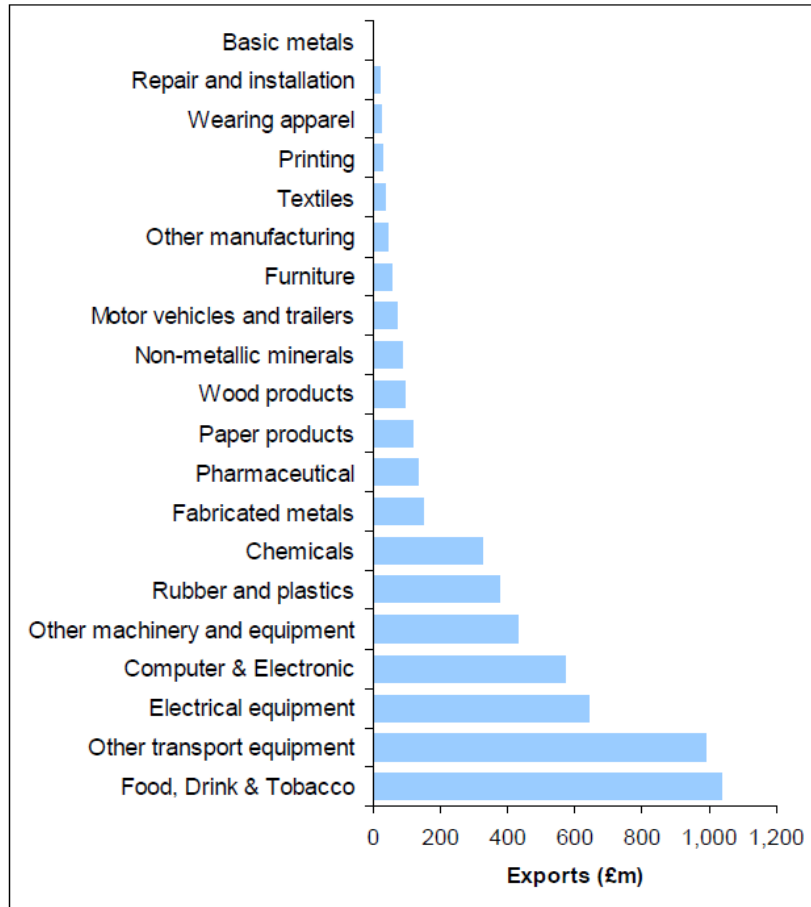


Source: Regional Gross Value Added, ONS

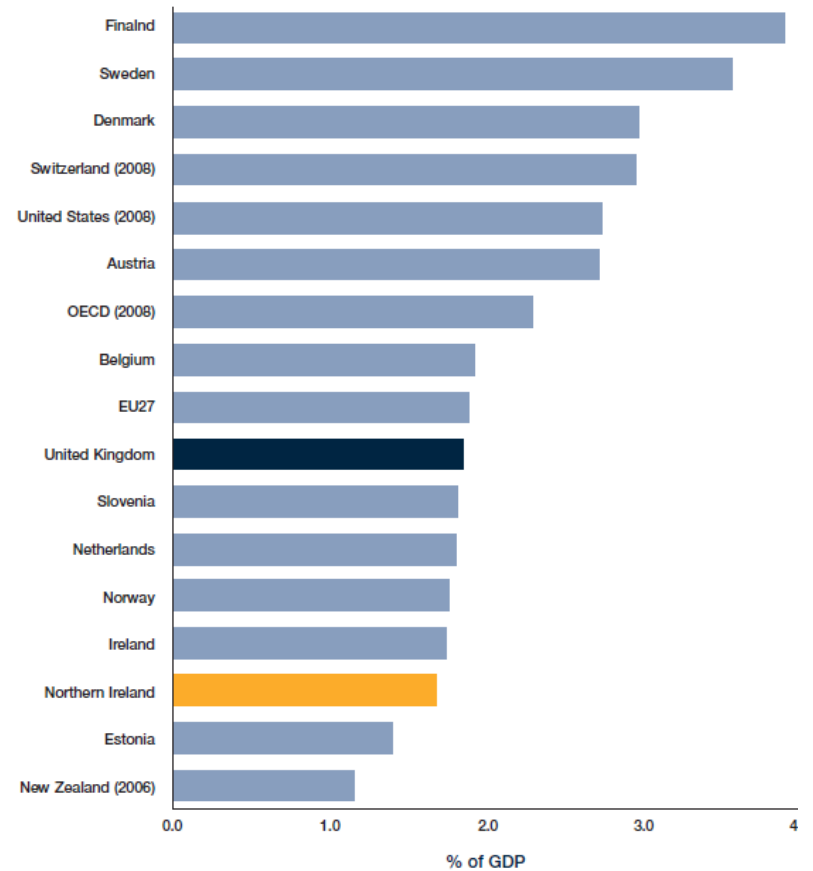
# 2. Regional Context



## Manufacturing exports by sector



## Gross Domestic Expenditure on R&D- 2009



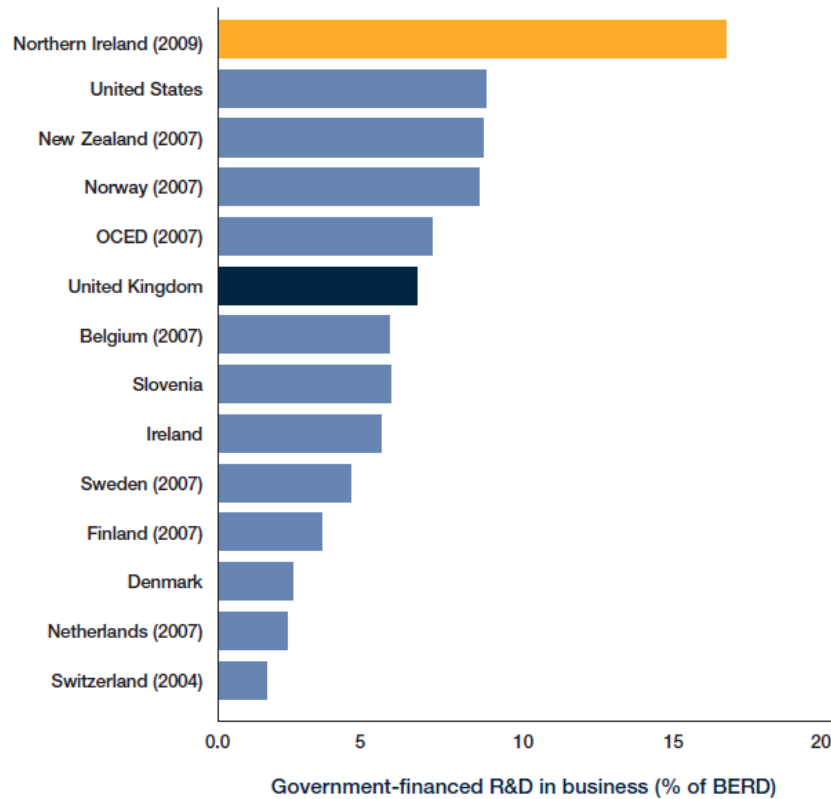
Source: OECD

Source: Manufacturing Sales and Exports Survey, DFP

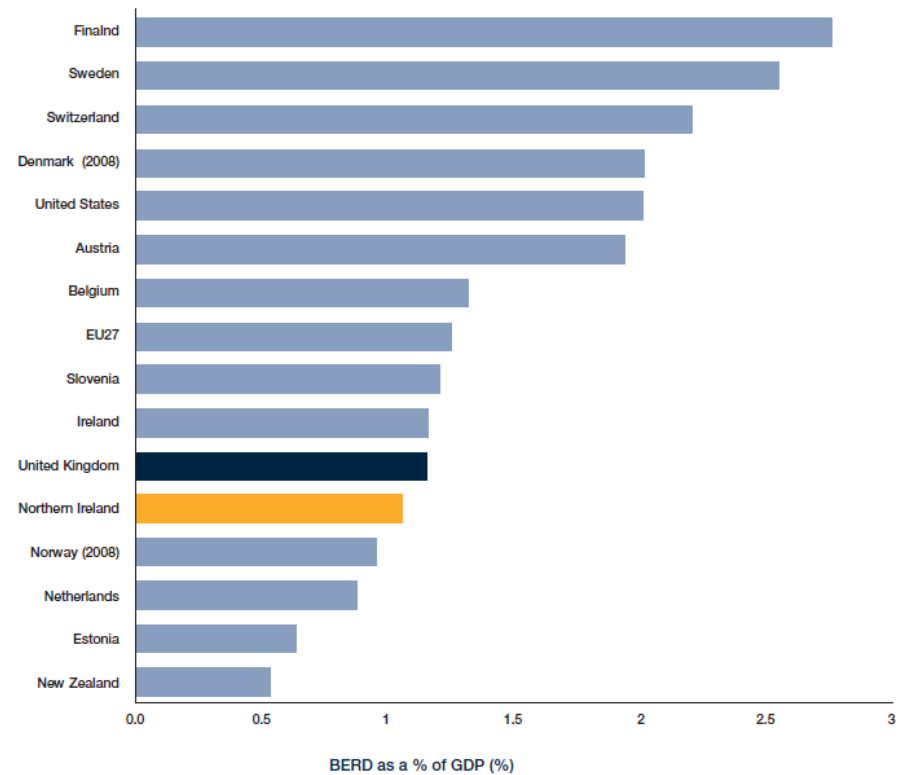
# 2. Regional Context



% of BERD financed by Government



BERD as % of GDP



Source: OECD

## 2. Regional Context- Challenges in NI



### Public Sector

- Public Sector dominated economy (63% GDP)
- High reliance on Government support for B.E.R.D.

### Labour Market

- Service Sector Dominated (Lower value)
- High number not in employment (High Economic inactivity)

### Brain Drain

- One-third of students leave to study elsewhere
- Less than half of these (44%) return when degree is complete

### SME Dominated

- 80% of NI private sector employment is in SMEs (under 60% for UK)
- Only 22% of turnover is in large firms compared with 51% in UK

### Innovation and R&D

- Lagging behind top EU performers in R&D spend
- 480 out of 80,000 involved in R&D
- Low in Innovation Scoreboard

# 3. Place- Based Dimension of the RIS3



# 3. Place- Based Dimension of the RIS3



## Analysis

Porter's Diamond

Cluster Analysis

Analysis of Technology specialisations

FDI analysis

Foresight



# 3. Place- Based Dimension of the RIS3

## Porter's Diamond

### Firm rivalry

- SME dominated
- Small number of large firms dominate
- Brain drain

### Demand Conditions

- Historically UK and Ireland reliant
- Limited local demand

- Science & Technology
- Aerospace
- Stone Quarrying
- Health Service
- Business Services

### Supporting Industries (Clusters)

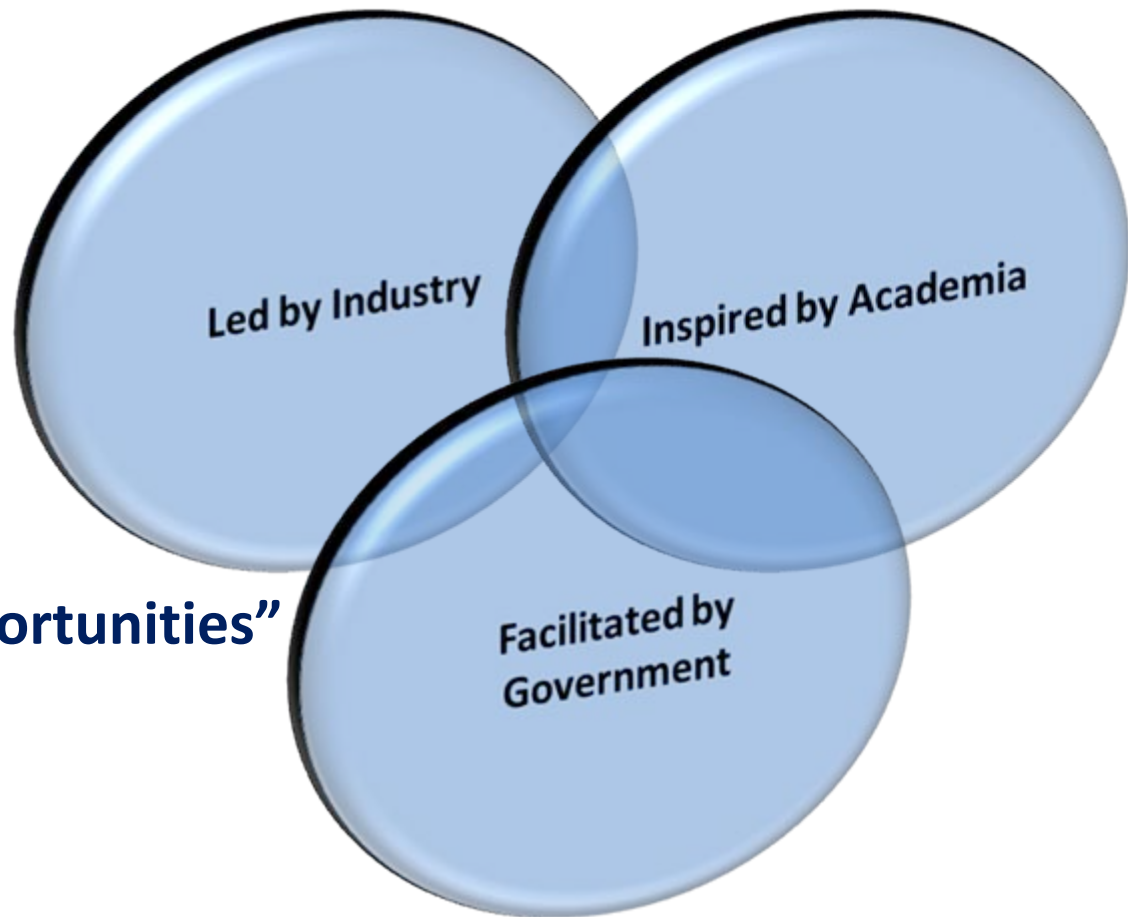
### Factor Conditions

- World class telecommunications
- Global central locality
- Good location for pilot projects

# 3. Place- Based Dimension of the RIS3



## Analysis of Technology Specialisations



“Cross sectoral market opportunities”

# 3. Place- Based Dimension of the RIS3



## Based on Key Enabling Technologies (KETs)



Northern Ireland Strategic Markets MATRIX Foresight

	Advanced Manufacturing	Advanced Materials	Sustainable Production & Consumption	Life & Health Sciences	ICT	Electronics & Photonics
ICT	✓	✓	✓	✓	✓	✓
Micro-nanoelectronics	✓	✓	✓	✓	✓	✓
Photonics	✓	✓	✓	✓	✓	✓
nanotechnology	✓	✓	✓	✓	✓	✓
Industrial biotechnology	✓	✓	✓	✓	✓	✓
Advanced Materials	✓	✓	✓	✓	✓	✓
Advanced Manufacturing	✓	✓	✓	✓	✓	✓

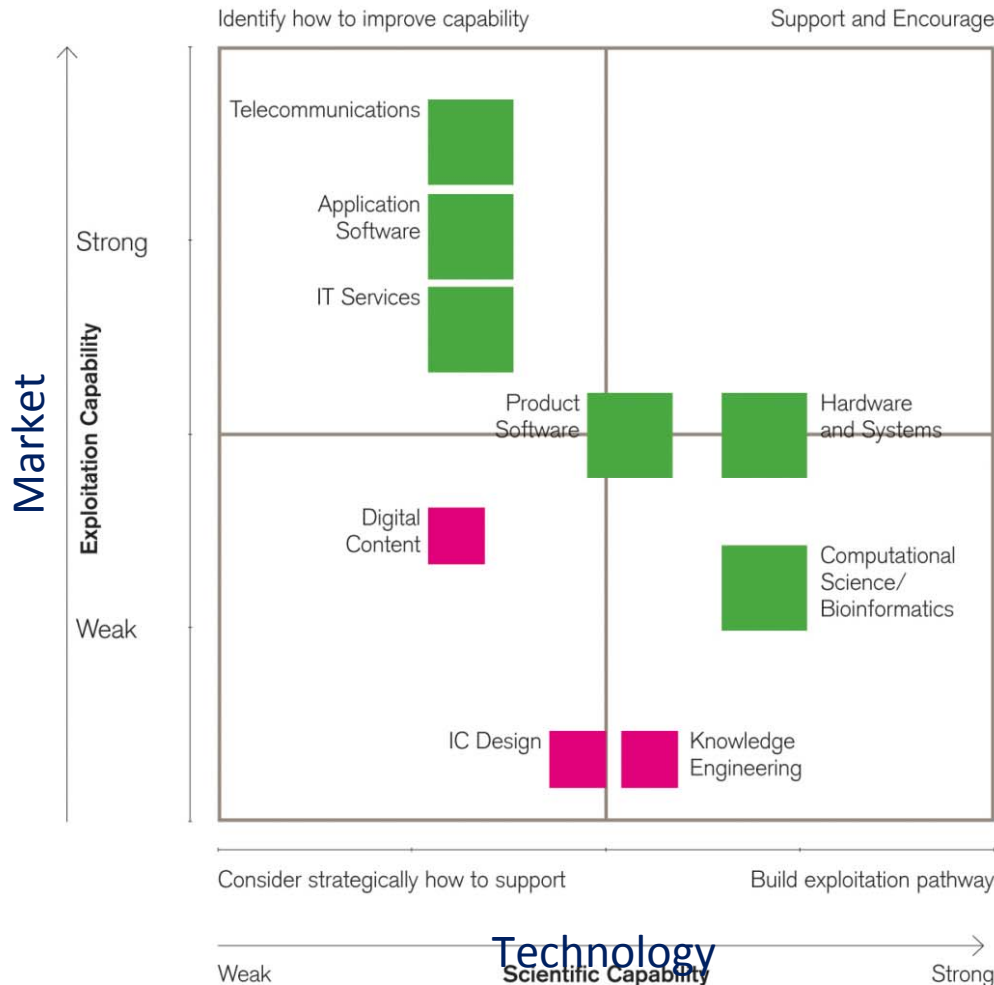
Key Enabling Technologies

# 3. Place- Based Dimension of the RIS3

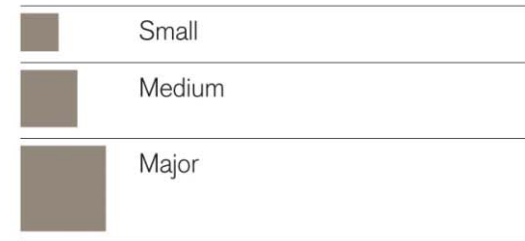


## Analysis of Technology Specialisations

### ICT CAPABILITY IN NORTHERN IRELAND



### Potential impact on NI economy



### Timescale to realise impact

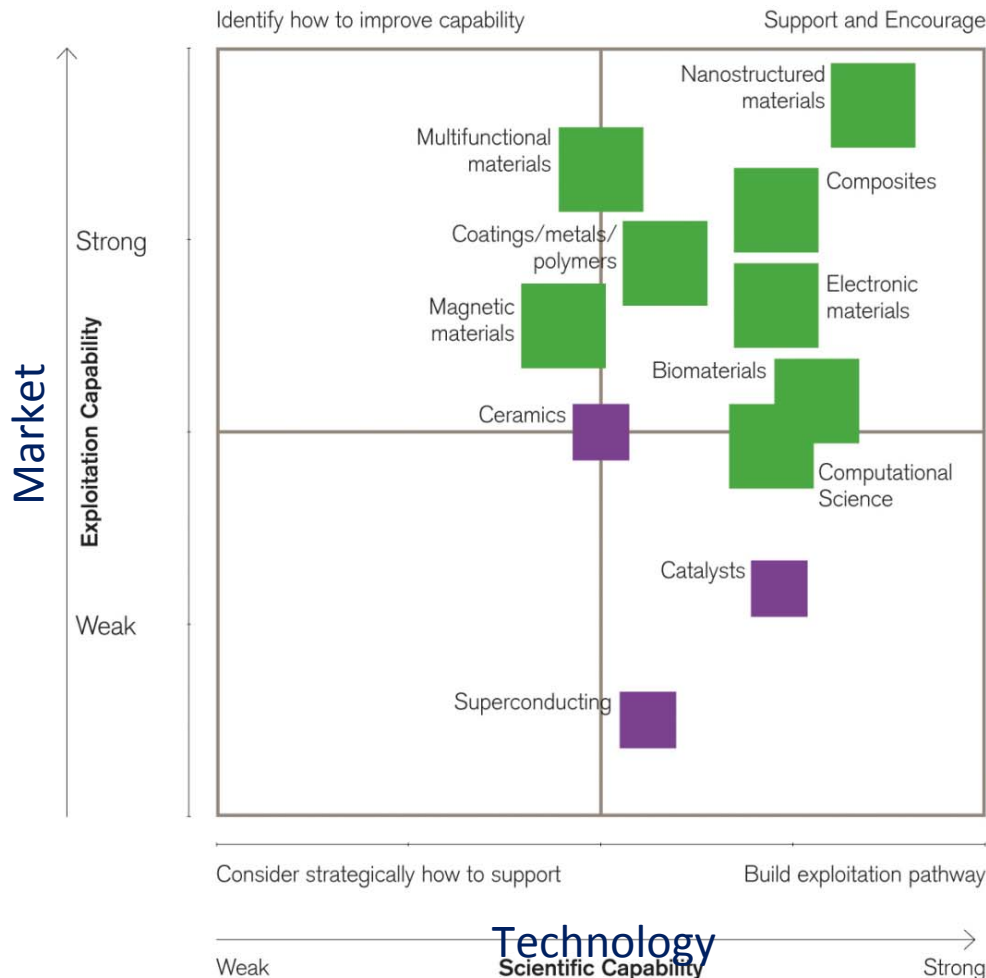


# 3. Place- Based Dimension of the RIS3

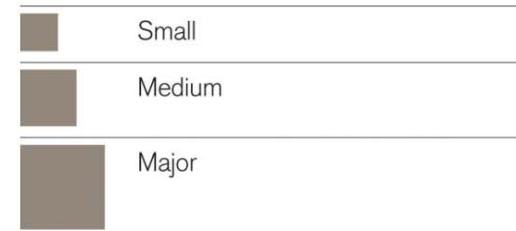


## Analysis of Technology Specialisations

### ADVANCED MATERIALS CAPABILITY IN NORTHERN IRELAND



#### Potential impact on NI economy



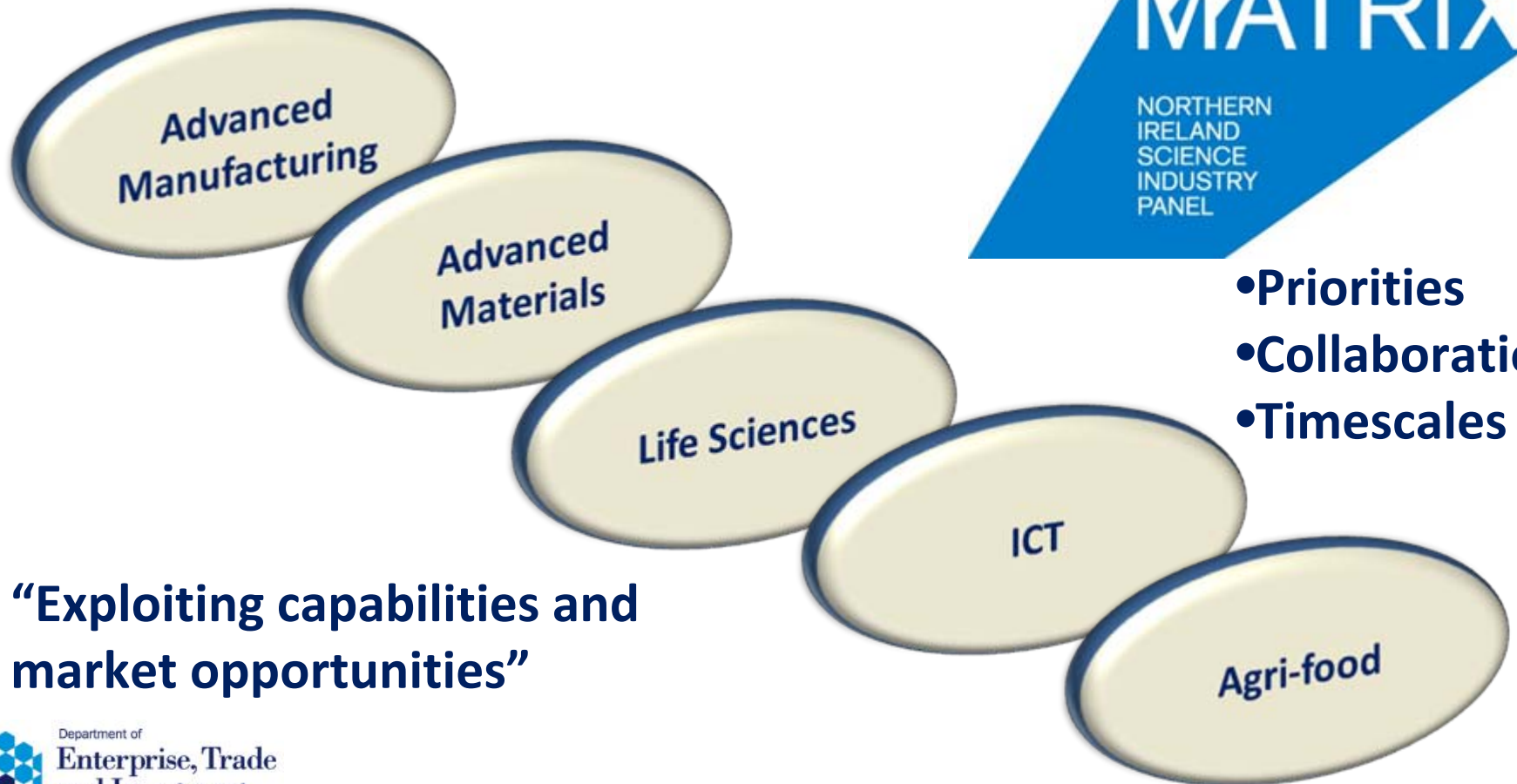
#### Timescale to realise impact



# 3. Place- Based Dimension of the RIS3



## Analysis of Technology Specialisations



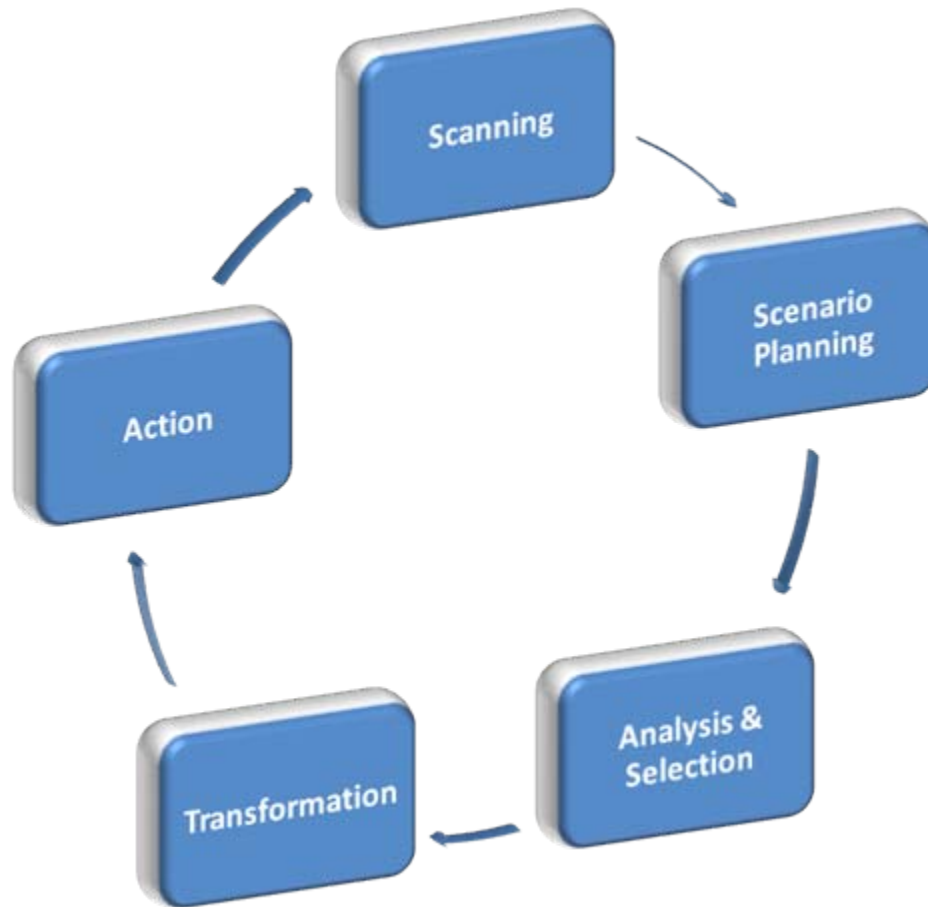
“Exploiting capabilities and market opportunities”

- Priorities
- Collaboration
- Timescales

# 3. Place- Based Dimension of the RIS3



## Foresight



### System Scanning

Creates shared understanding of issues

### Scenario Planning

Conceptual modelling of market opportunity scenarios

### Analysis & Selection

Prioritisation through negotiations among stakeholders

### Transformation

Establish relationship between future and present for a change programme

### Action Plan

Create structural and behavioural transformations to exploit markets

# 3. Place- Based Dimension of the RIS3



## Analysis

Porter's Diamond

Cluster Analysis

Analysis of Technology specialisations

FDI analysis

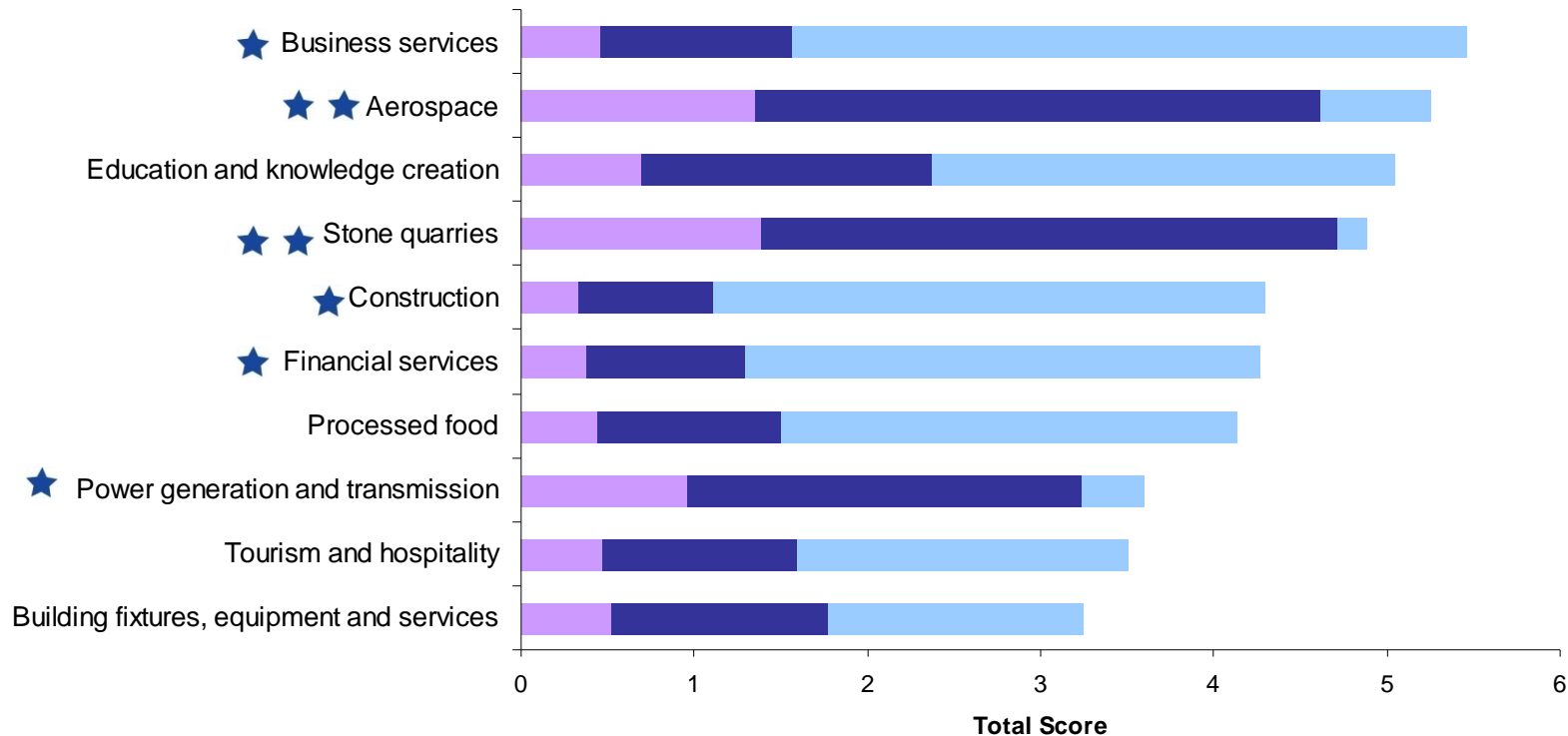
Foresight



# 3. Place- Based Dimension of the RIS3



## Cluster Analysis- top 10 sectors in N.I. within EU context



Data extracted from cluster observatory

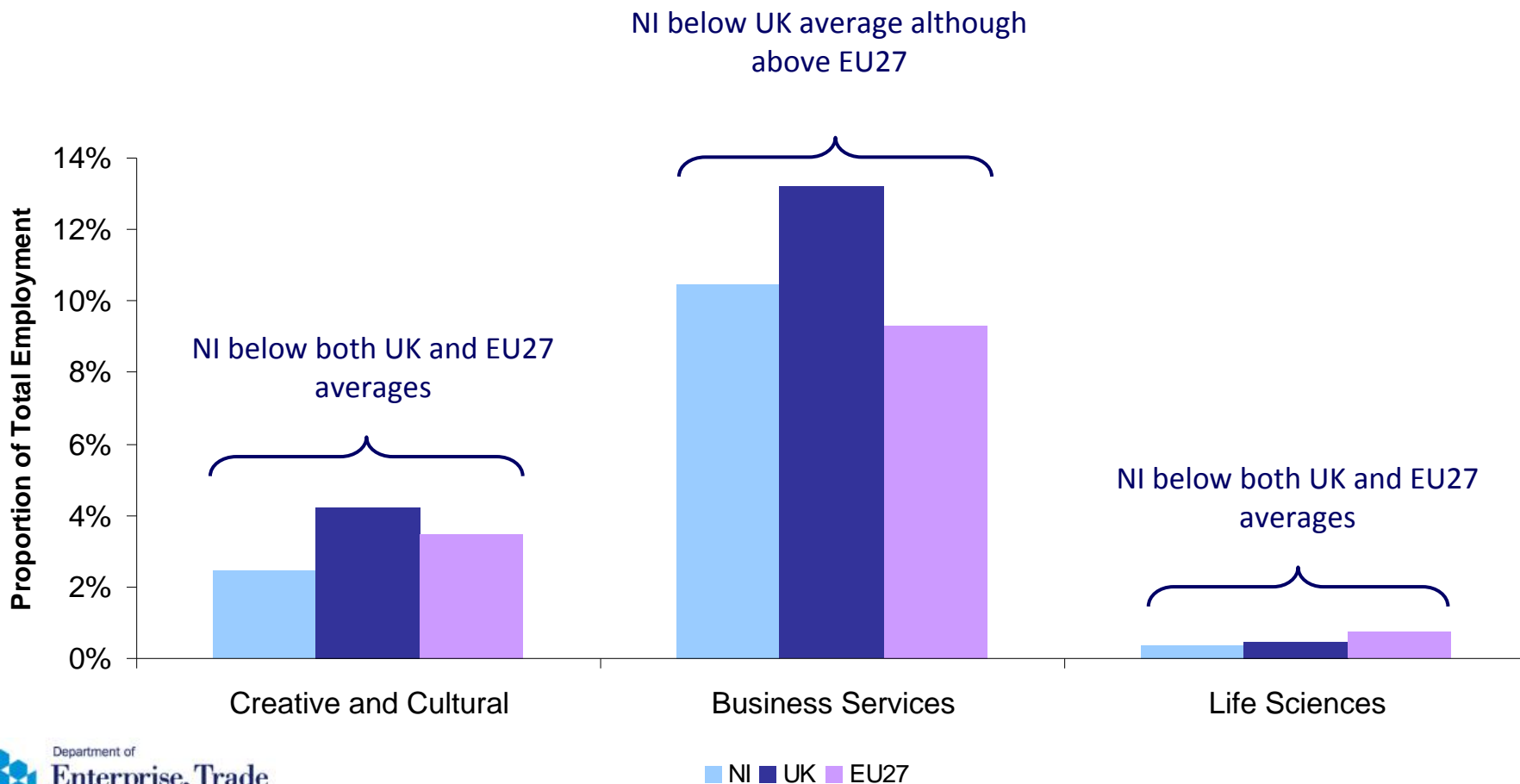
Size Specialisation Focus

**Star clusters represent 11% of total NI employment**

# 3. Place- Based Dimension of the RIS3



## Cluster Analysis- Key groupings



# 3. Place- Based Dimension of the RIS3



## FDI Analysis

### Research Capabilities Analysis

- Research Assessment Exercise (RAE)
- Alignment of the research capability with FDI sectors
- Identify R&D intensive sectors
- Top rated research groups aligned with sectors

# 3. Place- Based Dimension of the RIS3



FDI Analysis- Exploiting N.I. research base



High Correlation with Matrix Market Opportunities

# 4. Looking beyond regions boundaries



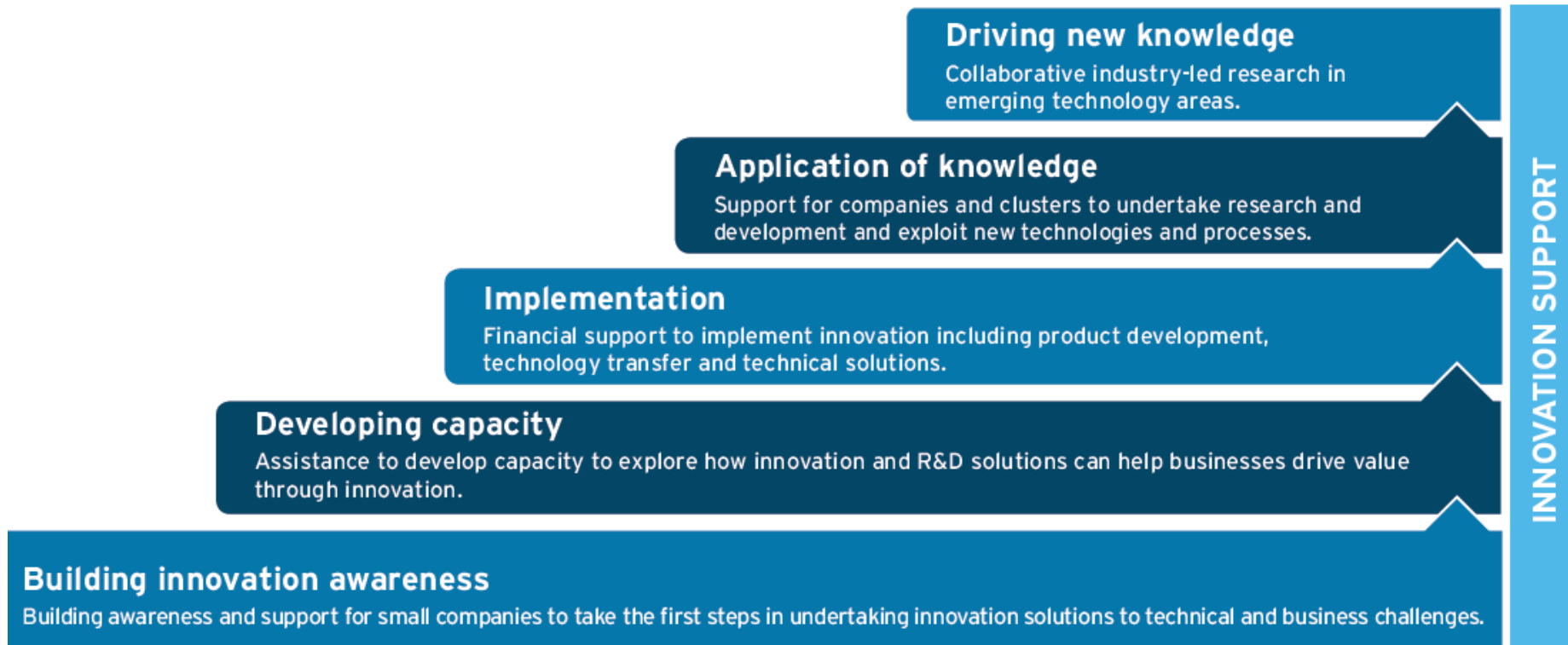
## 4. Looking beyond regions boundaries



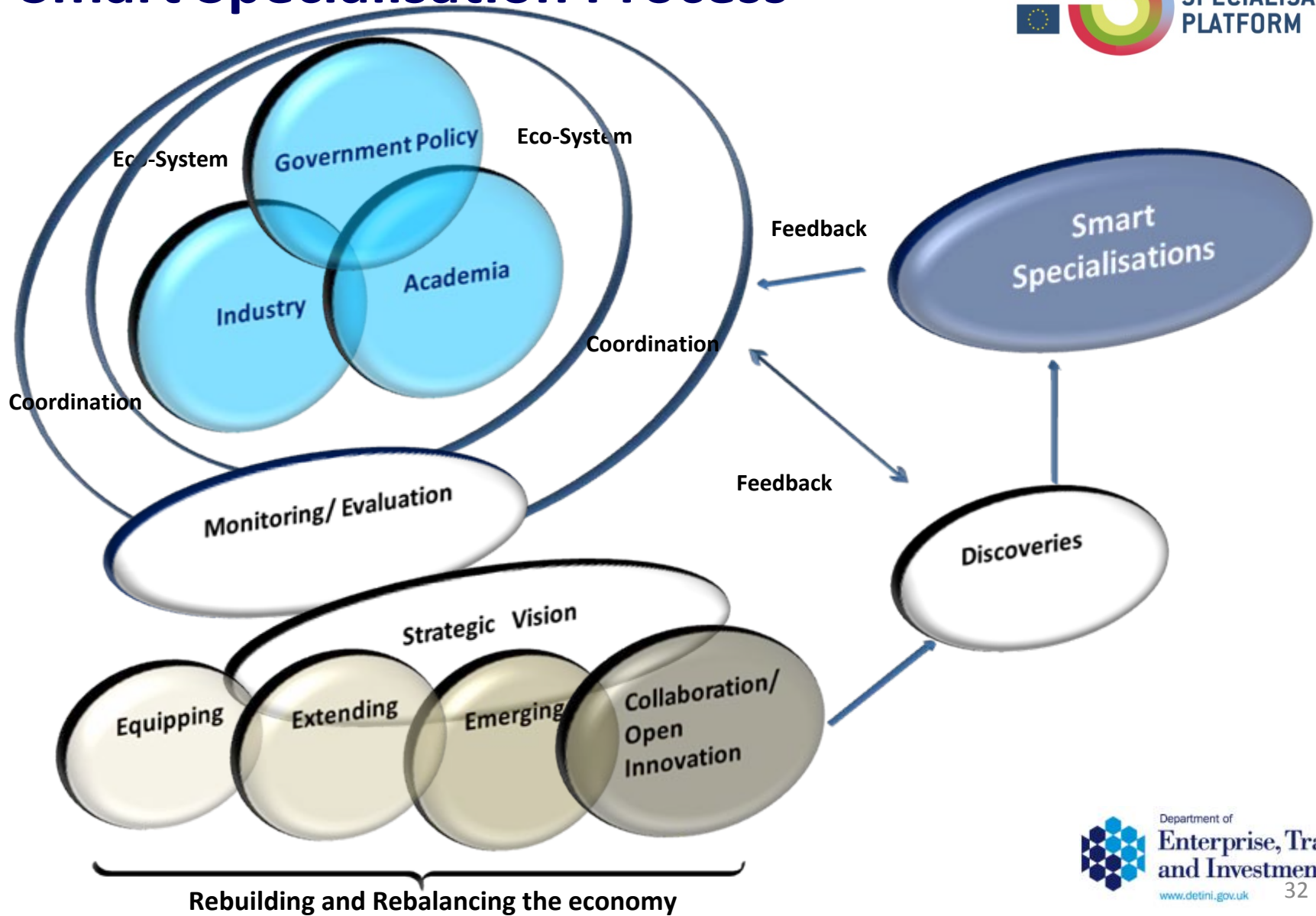
**Major research studies on Economic and innovation policy in EU and worldwide using expert advice**

- **Small peripheral EU States- Finland, Ireland, Sweden, Estonia**
- **Productivity, Innovation & Competiveness in Small open economies- New Zealand, Singapore, Rep. of Ireland**
- **Policy approaches analysis in comparing regions of similar economic, industrial and institutional structure as Northern Ireland**

# 5. Entrepreneurial Dynamics



# Smart Specialisation Process





# Example of S3 Process



Collaborative Networks “working together to achieve a common goal”



- Minimum of 4 N.I. companies
- Project Focused
- Private Sector/ Company led



“ Government provides Industry Experts as Honest Brokers”

# S3 process in action



Recommendations



Feedback

Innovation ecosystem

Consultation

Short listing

Collaborative Networks

Invest Northern Ireland

Competitive Call

Expression of interest

Scoping

Facilitation (by Industry experts)

Industry

- Route to Market
- Industrial Innovation Communities
- Limited Liability Partnership
- Competence Centres
- Innovation Ecosystem
- Open Innovation

# 5. Entrepreneurial dynamics

## Innovative Procurement – endorsed as policy across N.I. Government

### Phase 1- Proof of Concept

1. Open competition supported by Technology Strategy Board

2. Competition opens

### Phase 2- Prototyping

4. Most promising proposals selected

3. Applicants submit proposals

N.I. - 3% of UK Applications

N.I. - 11% of UK contracts

N.I. - 12% of total UK funding

5. Phase 1 demonstration of feasibility – typically lasting up to six months and worth £50k-£100k

6. Assessment of projects for phase 2 funding

8. Applicants commercialise successful outcomes

7. Phase 2 prototype development – typically lasting up to two years and worth £250k-£1m

9. Applicants free to further develop and exploit intellectual property

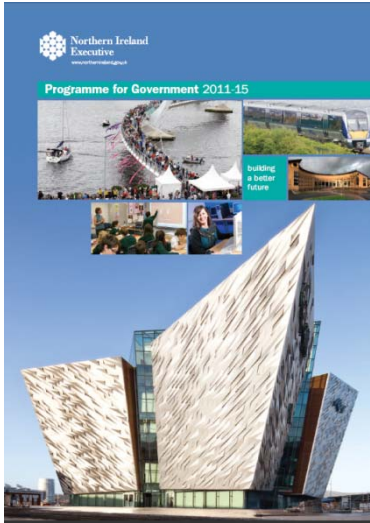
# 6. Governance



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## Programme For Government- Executive Committee



↓

## Economic Strategy-Sub Committee

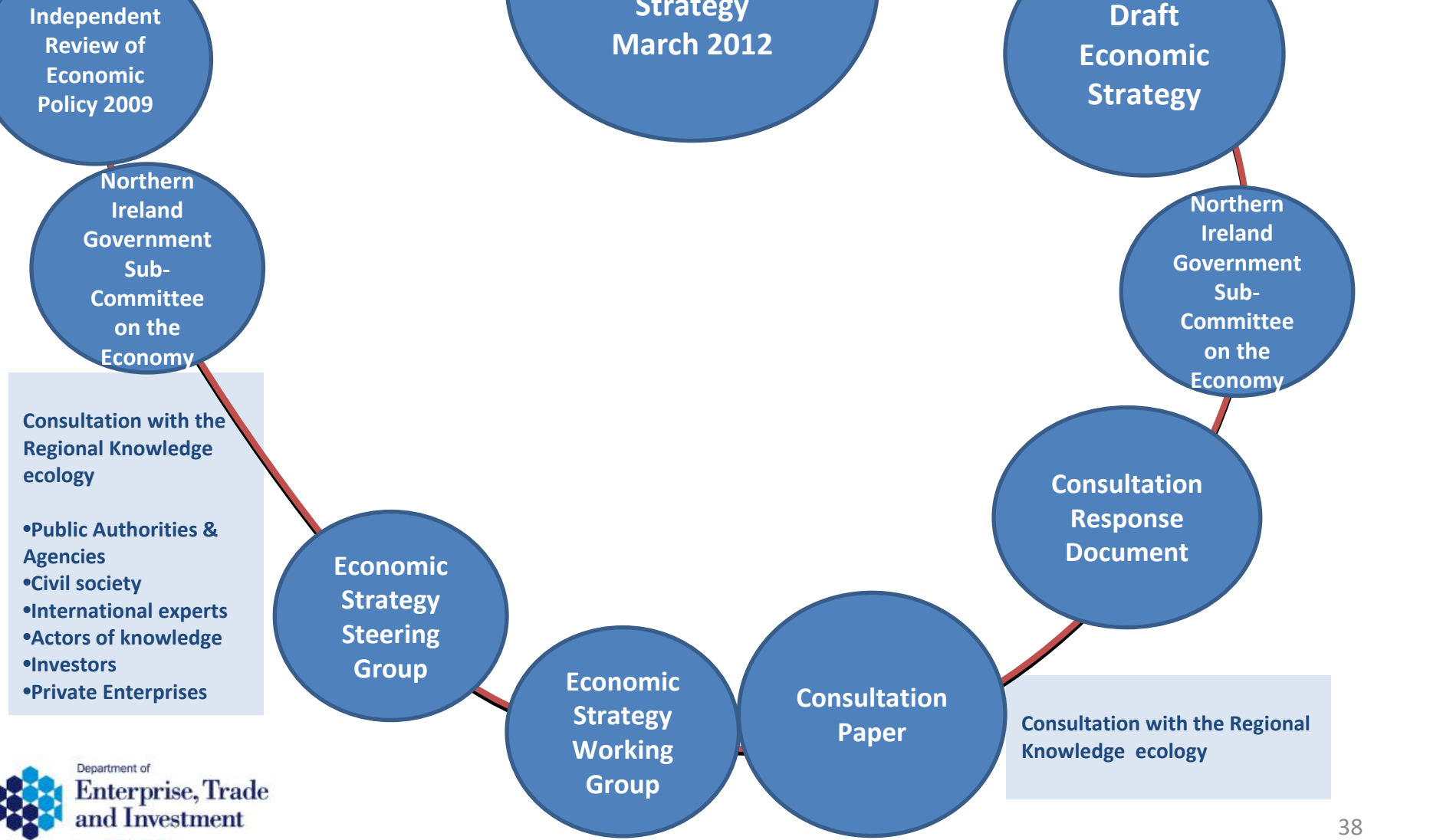


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## Innovation Strategy- Innovation Council

# Process

## Start



# Process

## Start



# 7. Priorities





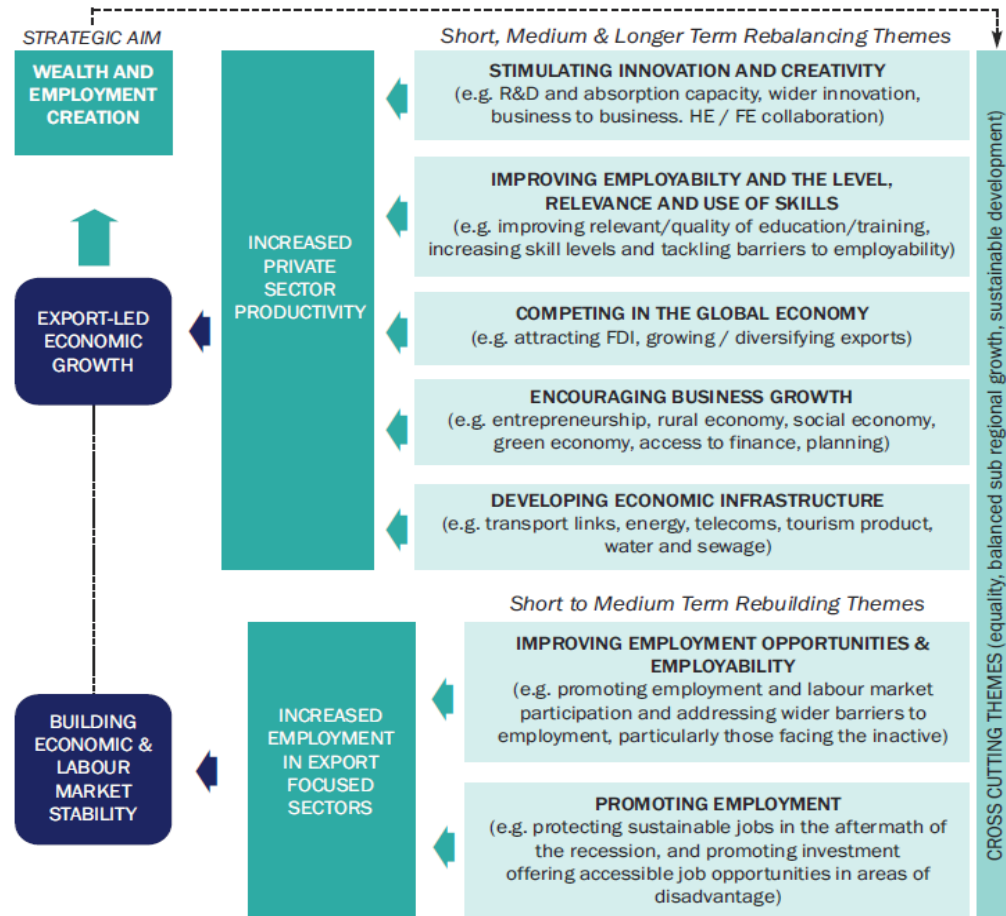
# 7. Priorities



## Economic Strategy

### Rebalancing & rebuilding themes;

- Innovation, R&D & Creativity
- Skills & Employability
- Competing Globally
- Business Growth
- Economic Infrastructure



# 7. Priorities

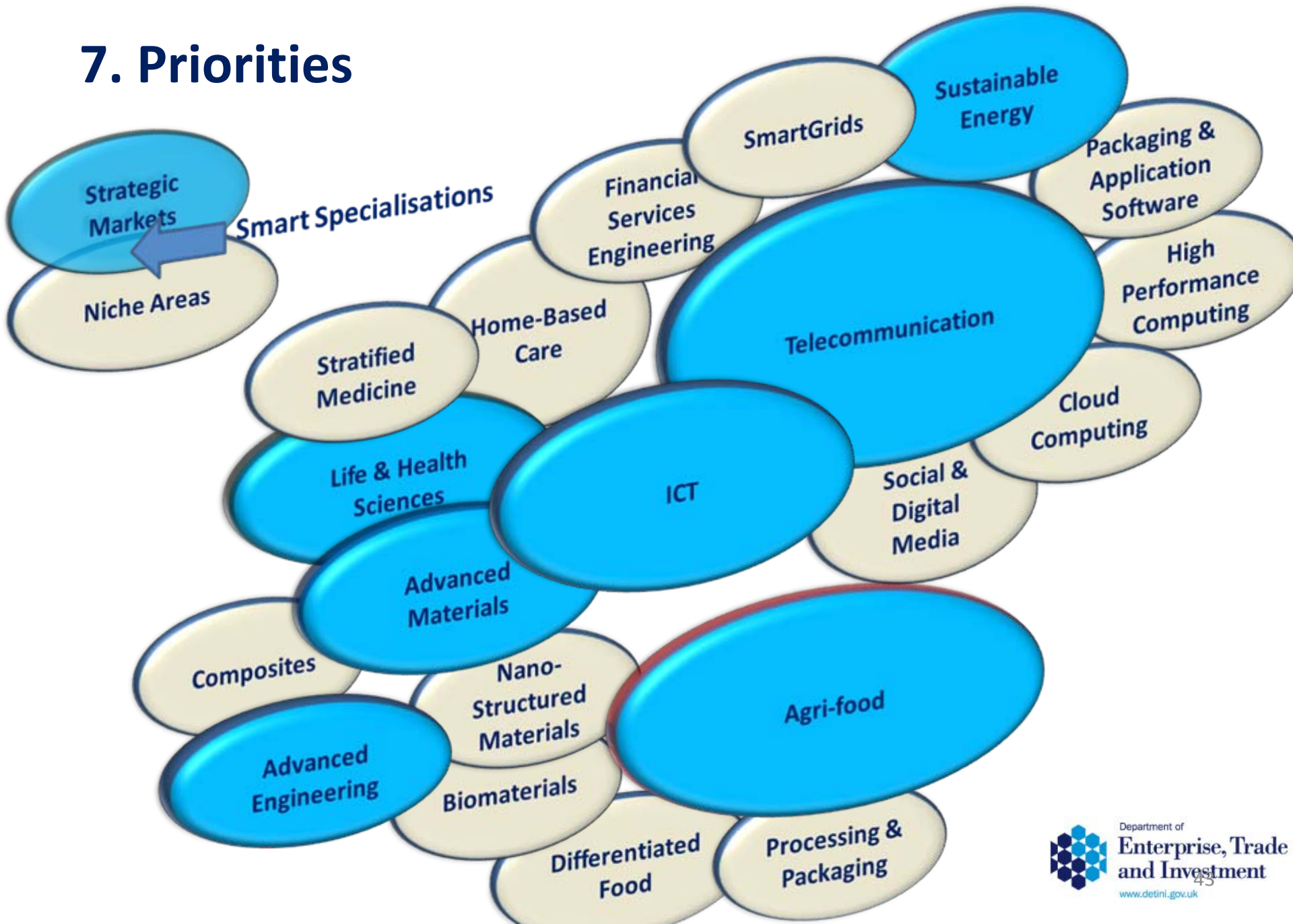
## Clusters



## Rebalancing themes

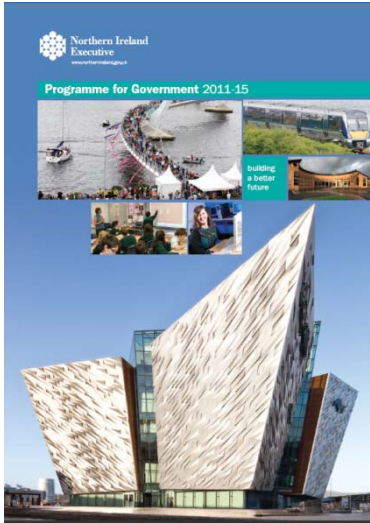


# 7. Priorities



# 8. Implementation and Budget

## Programme For Government-

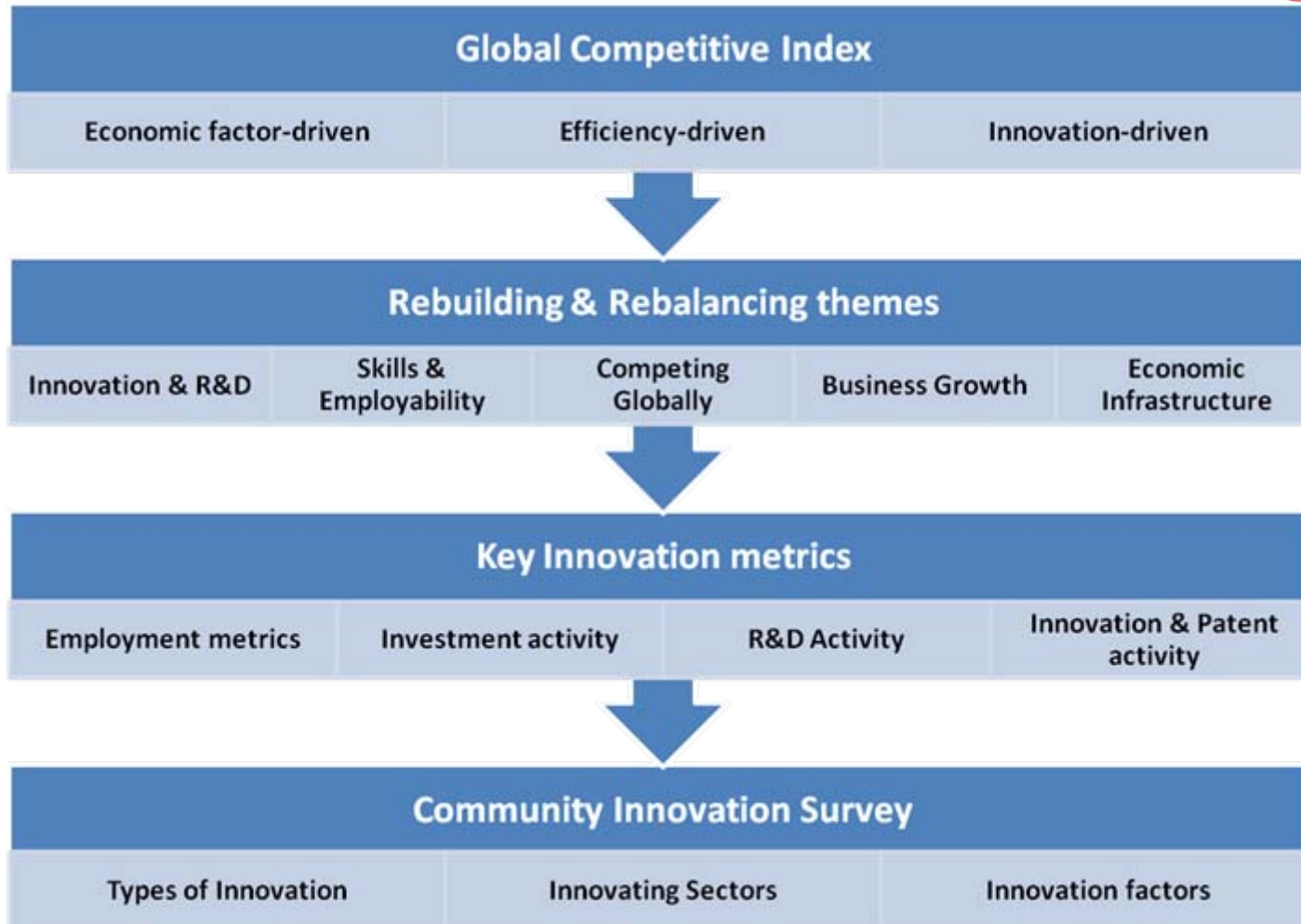


## Economic Strategy- Strategic Framework & SMART Targets



## Innovation Strategy- Action Plan & metrics (in preparation)

# 9. Measuring the Process



# 9. Measuring the Process

## The Global Competitive Index

### Basic Requirements\*

- Institutions (15)
- Infrastructure (8)
- Macroeconomy (5)
- Health and Primary Education (11)



Key for  
factor-driven  
Economies

### Efficiency Enhancers

- Higher education and training (8)
- Goods market efficiency (15)
- Labour market efficiency (9)
- Financial market sophistication (9)
- Technological readiness (8)
- Market Size (2)



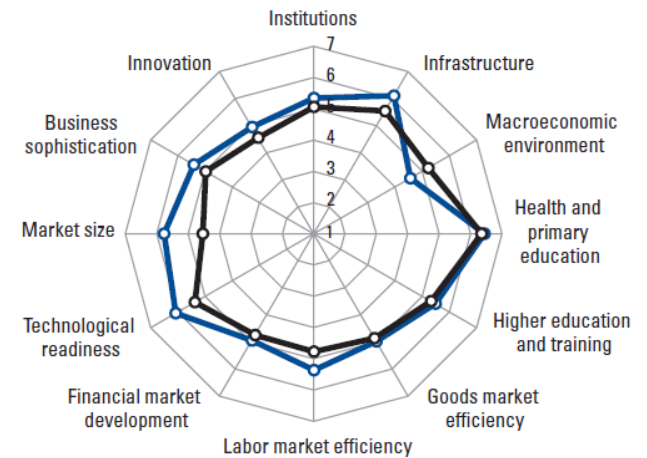
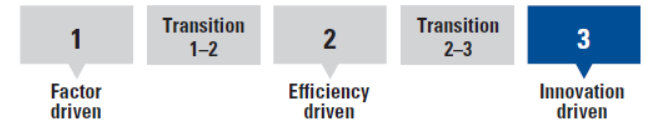
Key for  
efficiency-driven  
Economies

### Innovation & Sophistication Factors

- Business Sophistication (9)
- Innovation (7)



Key for  
innovation-driven  
Economies



# 9. Measuring the Process



## Examples of Key Innovation metrics

Knowledge Economy Employment	Current Position 2009	Preferred target 2015	Preferred target 2020	Preferred target 2025	Preferred target 2030
Employment	30,580	41,030	57,500	63,890	71,250
Businesses	2,080	2,940	3,920	5,240	7000

Investment Activity	Current Position 2009	Preferred target 2015	Preferred target 2020	Preferred target 2025	Preferred target 2030
No of VC deals	23	24	26	28	30
VC investment (millions)	12	21	34	56	90

# 9. Measuring the Process

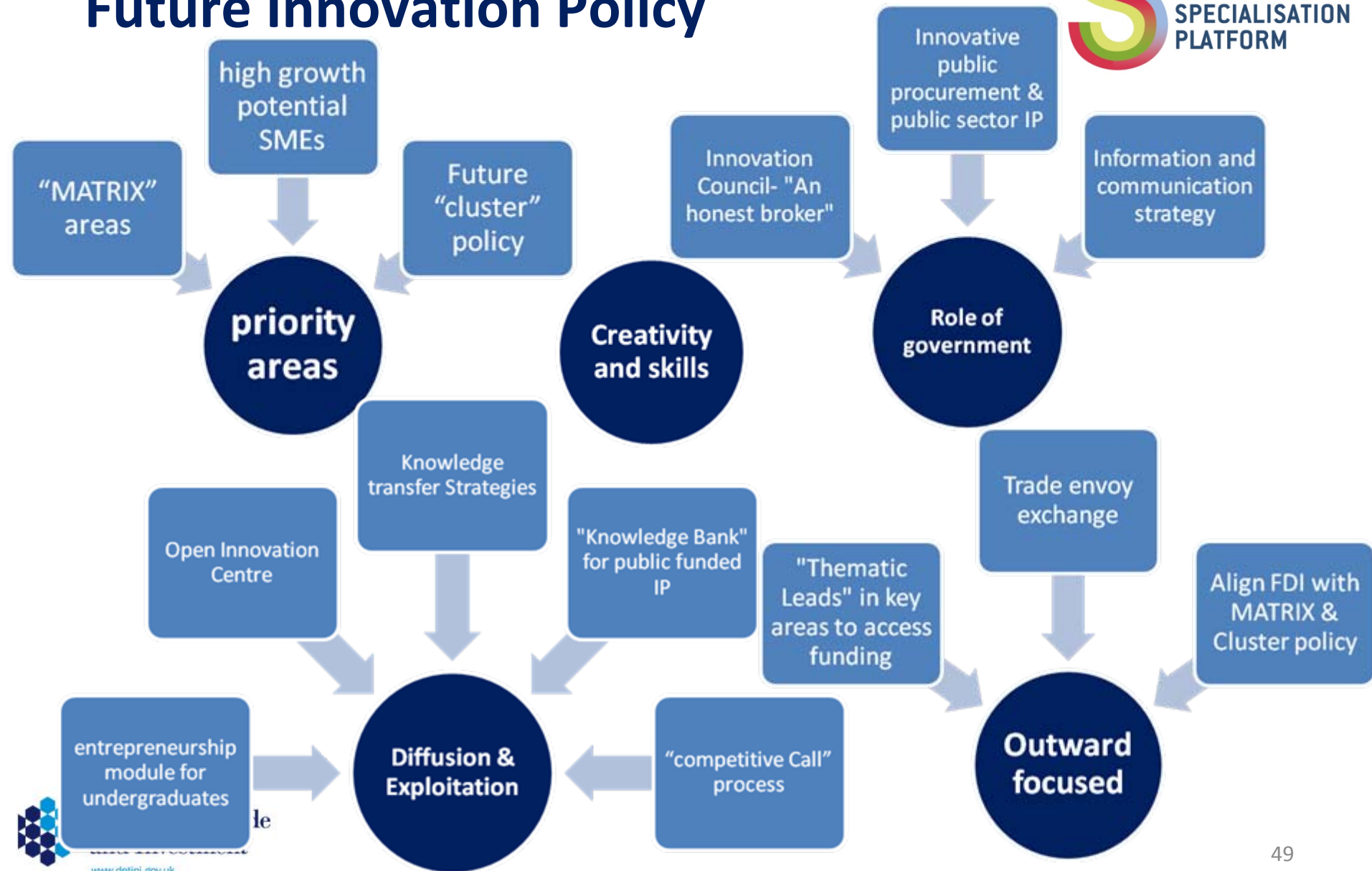
## Examples of Key Innovation metrics

R&D and Research Activity	Current Position 2009	Preferred target 2015	Preferred target 2020	Preferred target 2025	Preferred target 2030
Total R&D expenditure	£480	£600	£730	£870	£1,050
Business R&D expenditure (£Mil)	£320	£410	£500	£600	£740
R&D personnel number of employees	6,500	8,280	10,120	12,380	15,130

Innovation & Patent Activity	Current Position 2009	Preferred target (2030)
% firms stating they are innovation active	34.6%	60%



# Future Innovation Policy



# Expectations

## “Are we on the right track?”



# THANK YOU

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## Northern Ireland