

IDEAM Cluster Report

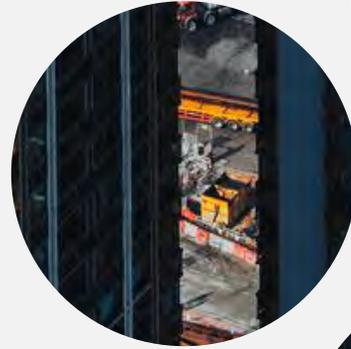
2021 Cluster Building

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Irish Digital Engineering and
Advanced Manufacturing
(IDEAM) Cluster



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Cluster Understanding

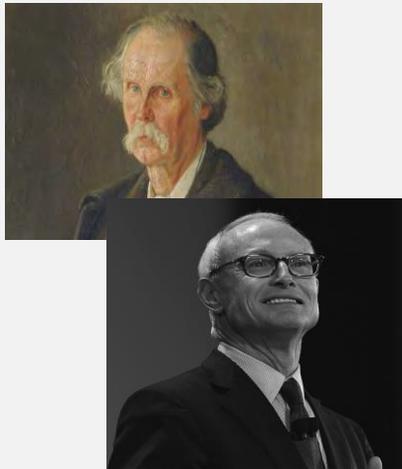
Let's dive in



Cluster Understanding

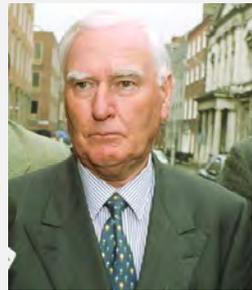
What is a Cluster?

- A cluster is a geographical proximate group of interconnected companies and associated institutions in a particular field, linked by commonalities and externalities. (Michael E. Porter, On Competition)



Cluster Policy?

- Supports groups of actors such as firms, suppliers, service providers, related industries, research. This help to address the common problems above the industry level (Culliton Report, 1992)



Cluster Initiative?

- Cluster initiatives are organized efforts to increase the growth and competitiveness of a cluster within a region, involving cluster firms, government and/or the research community. (Sölvell, Lindqvist and Ketels, The Cluster Initiative Greenbook, 2003)
- Triple-helix importance and Robust Clusters (Etzkowitz and Leydesdorff, 1990, 2002)



Cluster Organisation?

- A Cluster Initiative is led by a Cluster Organisation, which initiates and strengthens joint activities among its member. Act as innovation support providers (Krugman, 1991)



Cluster Association?

- A cluster association is a not for profit legally formed entity gathering businesses and other stakeholders involved in cluster initiatives (Ketels, 2013)



Five Traits of Successful Cluster Organisations & Initiatives

- 1) Industry-driven, university-fuelled, government-supported
- 2) Championed by passionate, dedicated leaders
- 3) Focused on establishing a robust ecosystem, not quick job gains
- 4) Placing a collective big bet on a unique opportunity – activate don't create and
- 5) Anchored by a physical centre



Cluster Development

- 1) Long-term involvement and commitment of participants/members (added value)
- 2) Financing (Private/Public) – International projects
- 3) Innovation dynamics and innovation management – Game Changers & Transformation
- 4) Focusing on expansion of sectors – Think Local, Act Global
- 5) Regional development – SMEs & Start-ups competitiveness
- 6) Communication Activities leading to strategic Outcomes and
- 7) No short term fixes – Long term goals needed



The Three Functions of Clusters



Intelligence



Gather Information
Map Regional Assets
Identify Challenges and Analyse Trends
Market Research Reports
Projects/Grants



Develop Diagnostic

Collaboration



Foster Regional Networks
Encourage Spill overs
Link New Value Chains
Cross Collaboration
Communication Activities
Events
Convergence



Regional Strategy and
Action Plan

Support



Build Human Capital Resources
Access to Infrastructure
(Physical/Virtual)
Talent & Skills
Business Support and R&D
Services
Build Trust & Relationships



Supportive Strategy Developed

Foster Loyalty of Members and Attract New Ones



Most cluster organisations have from 20 to 100 members. The size or membership of cluster organisations differ, contingent on the size of the cluster.

- 1) Clusters attract needed specialised services to a region
- 2) Clusters have open “membership”
- 3) Clusters are based on social values that foster trust and encourage reciprocity
- 4) Clusters generate demand for more firms with similar and related capabilities
- 5) Clusters require both cooperation and competition and
- 6) Clusters have collective visions





IDEAM Cluster Story

Let's dive in



Journey

The **IDEAM Cluster** acts as a one-stop-shop for Manufacturing SMEs in all aspects of digital transformation with a regional lens, but a national/international focus. Up to this point, existing clusters have been run on a voluntary basis, inclusive of:

- **Limerick for Engineering:** 40 companies, 50% of which are SMEs
- **Limerick for IT:** 23 companies, 75% of which are SMEs and
- **Precision Turned Parts Manufacturing Association (PTMA):** 35 SME member companies



Through the SME Members of these existing networks and the attraction of additional SMEs from across Ireland, the IDEAM Cluster will engage with **75** Manufacturing SMEs over the three-year period, with over **420** employees engaged in up-skilling and innovation activities, to prepare those companies for opportunities in Digitalisation of Manufacturing. The importance of these networks in supporting regional economic growth cannot be underestimated. The Mid-West Region is particularly reliant on 'industry/ manufacturing' employment vis-a-vis national averages. Accounting for **21.6%** of regional employment and creating an economic output of **€6.4bn** per annum (gross value added at basic prices, 2015) Industry on a per capita basis is the largest contributor to the Mid-West economy - of Ireland's total industrial GVA, **6.3%** is created in the region.

Journey continued.

Limerick Institute of Technology was awarded the maximum allocation of €406,520 from the €4.6 million **Regional Technology Cluster Fund (RTCF)** to build the IDEAM Cluster. The RTCF is a fund which provides a platform for engagement between enterprise and regionally-based academic institutions to drive productivity and competitiveness in and across the regions. Under Project Ireland 2040, this fund is administered by Enterprise Ireland on behalf of the Department of Business, Enterprise and Innovation.

The cluster business model is based on an **industry-driven, academia-fuelled, government-supported** approach to solve industry pain points and connect the wider community. Business clusters have proven to drive regional economic development performance, due to the significantly greater increases in innovation and technology applications, and commercialisation of these applications.

“The global industry is growing unprecedentedly and now is the right time to make the Mid-West, Midlands and Ireland a world-class one-stop-shop that will assist Manufacturing SMEs in all aspects of digital transformation and Industry 4.0. An advanced manufacturing and IN4.0 digital transformation cluster can pioneer Ireland on an international scale to attract start-ups, investments and develop indigenous SMEs in this sector. Everyone must work more collectively and build trust”.



IDEAM Cluster Strategic Initiatives



Talent & Skills

Sustainable Supply of Digital
& Manufacturing Talent

Educational Engagement



Research and Development

Collaborative R&D between
Industry & Academia

Industry Cluster Training



Internationalisation
and Funding

Supporting Irish Advanced
Manufacturing SMEs &
Start-Ups to Grow & Export

Strategic Projects



Business & Community
Development

Promotion & Supporting
Cross-Industry
Collaboration

Industry Events

IDEAM Cluster Strategic Plan



IDEAM Cluster Team so far...



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Why Clusters Matter

Let's dive in



Why Clusters Matter



Higher Average Wage

13.5%

Higher Annual Employment Growth Rate

+0.5%

Higher Annual Wage Growth Rate

+0.7%

More Global Frontier Firms

143%

Growing Start-ups

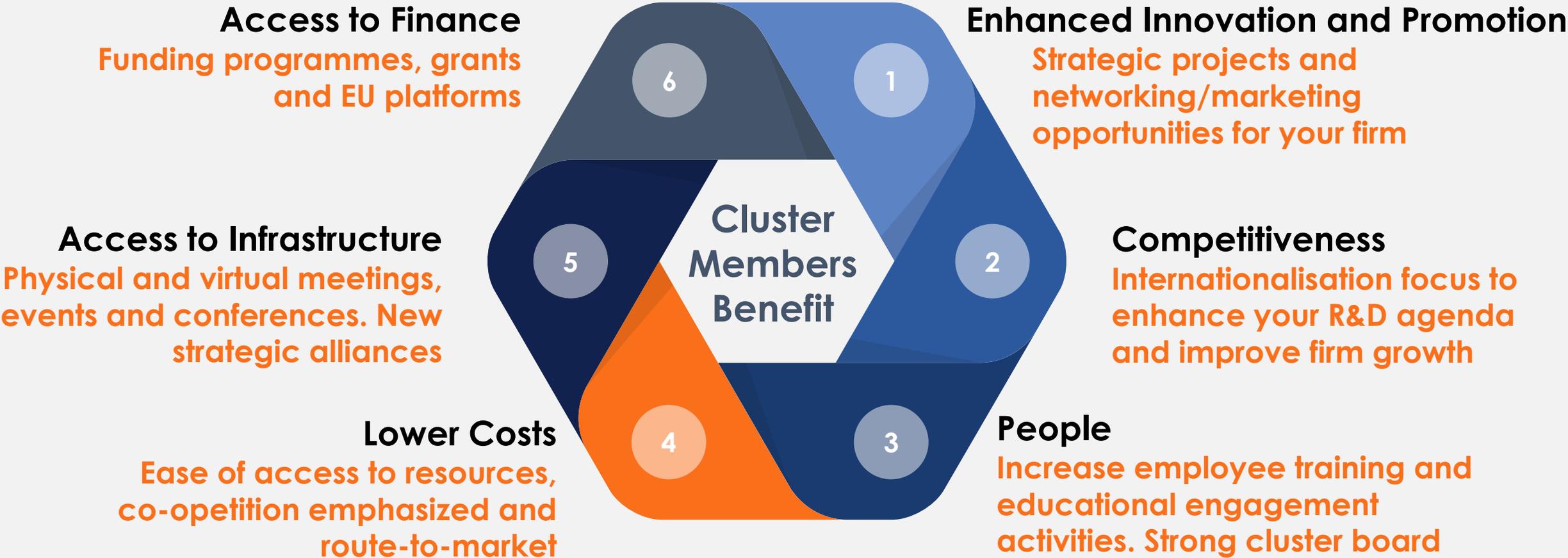
141%

More High Growth Firms

77%



How do Individual Cluster Members Benefit?



Digitalisation of Cluster Services for Members



DIGITALISATION OF CLUSTER SERVICES

EXPERIMENTING WITH NEW FORMATS

Digitalisation is an obvious opportunity to rethink your services and event formats and launch new ones

- ONLINE KNOWLEDGE SHARING DURING THE LUNCH BREAK
- DIGITAL MATCHMAKING
- ONLINE INNOVATION WORKSHOPS
- DIGITAL MASTERCLASSES
- VIRTUAL GROUP WORK
- MINI FESTIVAL OF DIGITAL EVENTS
- WEBINARS AS ADD-ON TO DELEGATION TRIPS
- DIGITAL STARTUP SUPPORT
- VIRTUAL NETWORK GROUP MEETINGS
- LIVESTREAMED PANEL DEBATES
- ONLINE GENERAL ASSEMBLES
- PITCH VIA LIVE STREAM
- DIGITAL KNOWLEDGE BRIDGES
- WEBINAR SERIES ON COMPLEX TOPICS



Digital and Advanced Manufacturing Landscape in Ireland

Let's dive in



Manufacturing in Ireland



IRELAND'S MANUFACTURING FACT SHEET



15,242 manufacturing companies = 6% of all enterprises in Ireland



400k direct & indirect employees



35.5% contribution to Ireland's GDP



40% of all Irish exports are manufacturing goods



KEY SECTORS



PHARMA & CHEMICALS



FOOD & DRINK



MEDICAL DEVICES



COMPUTER & ELECTRONICS



ENGINEERING

Impact

- The manufacturing sector has a substantial impact in the Irish economy, estimated at more than **35.5%** of the total valued added and **400,000** direct and indirect jobs

Export

- Between 2000 and 2015, the average degree of export orientation of all Agencies' client firms (i.e. both Irish and Foreign owned firms) operating in the manufacturing sector, was **83.7%**

SMEs

- Manufacturing base is mostly composed of SMEs that employ **53%** of the workforce at sectoral level

Goals of Ireland's Industry 4.0 Strategy

- To stimulate firms to adopt and build capability in Industry 4.0 technologies
- To stimulate firms to harness the new opportunities enabled by Industry 4.0 technologies
- To become a global leader in RD&I which underpins Industry 4.0
- To facilitate the current and future workforce to develop the skills to deliver the Industry 4.0 transformation and exploit the new opportunities arising in manufacturing and supply chain firms through Industry 4.0 technologies
- To establish a world class business environment for Industry 4.0 which is underpinned by an appropriate regulatory, legal, standards, and internationally connected ecosystem



Opportunities and Challenges arising from Digital Manufacturing in Ireland



Different sectors, different opportunities





Business Models and Case Studies

Let's dive in



Cluster Business Model Approach

Cluster Organisation: _____ Industry Sector(s): _____ Future Outlook: _____

Slogan: _____ 

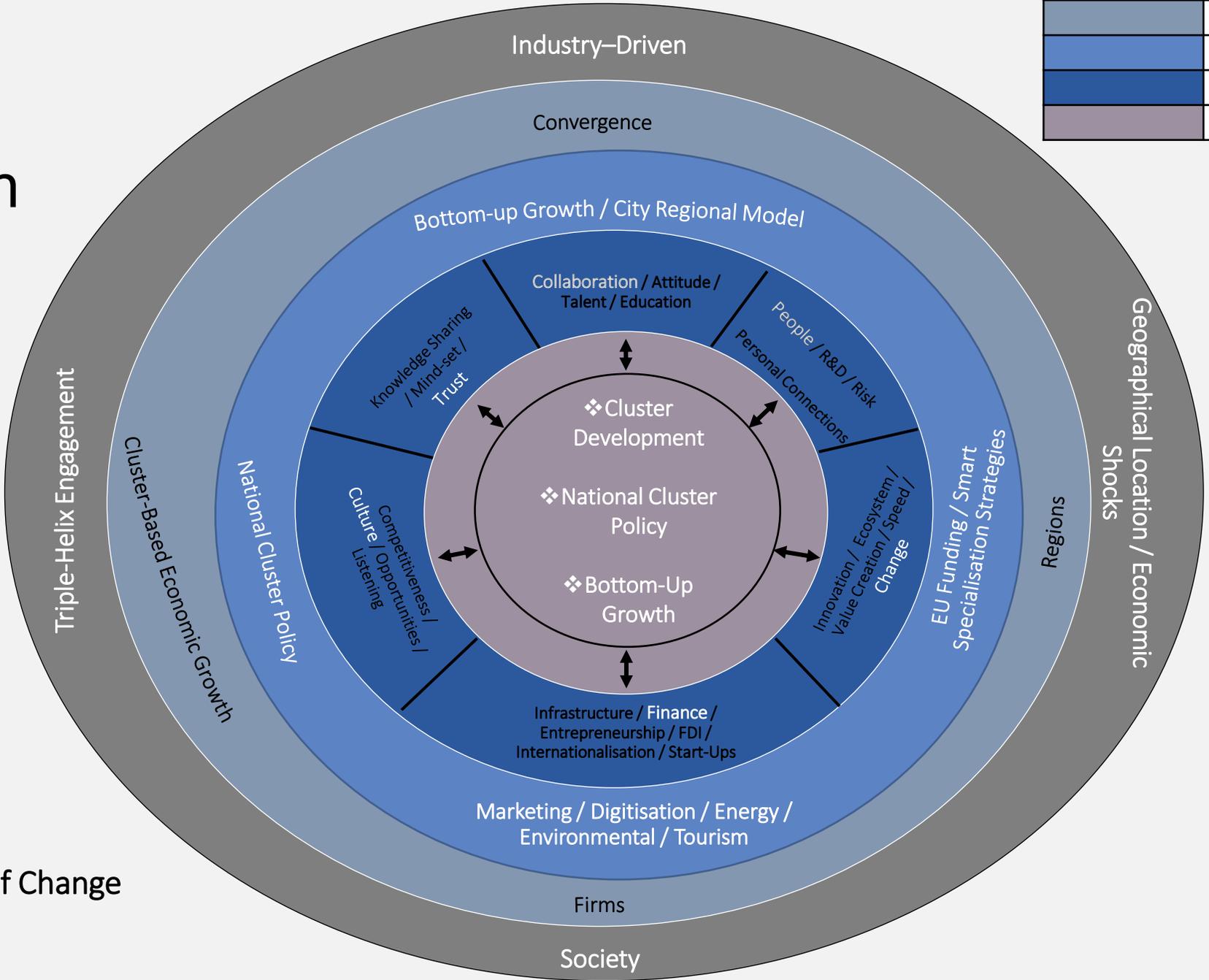
Pain Points - - - -	Strengths - - - -	Communication - - - -	Industry Changes - - - -	Vision - - - -
Funding Streams (Private/Public) - - - -	Business Model - - - -	Business Model - - - -	Business Model - - - -	
Status Quo - - - -	Strategy/Initiatives - - - -	Strategy/Initiatives - - - -	Strategy/Initiatives - - - -	
Members - - - -	Internationalisation - - - -	Members - - - -	Unexpected Challenges - - - -	Game Plan - - - -

Short (0-2yrs) Medium (2-5yrs) Long (5yrs +)

Cluster Business Model

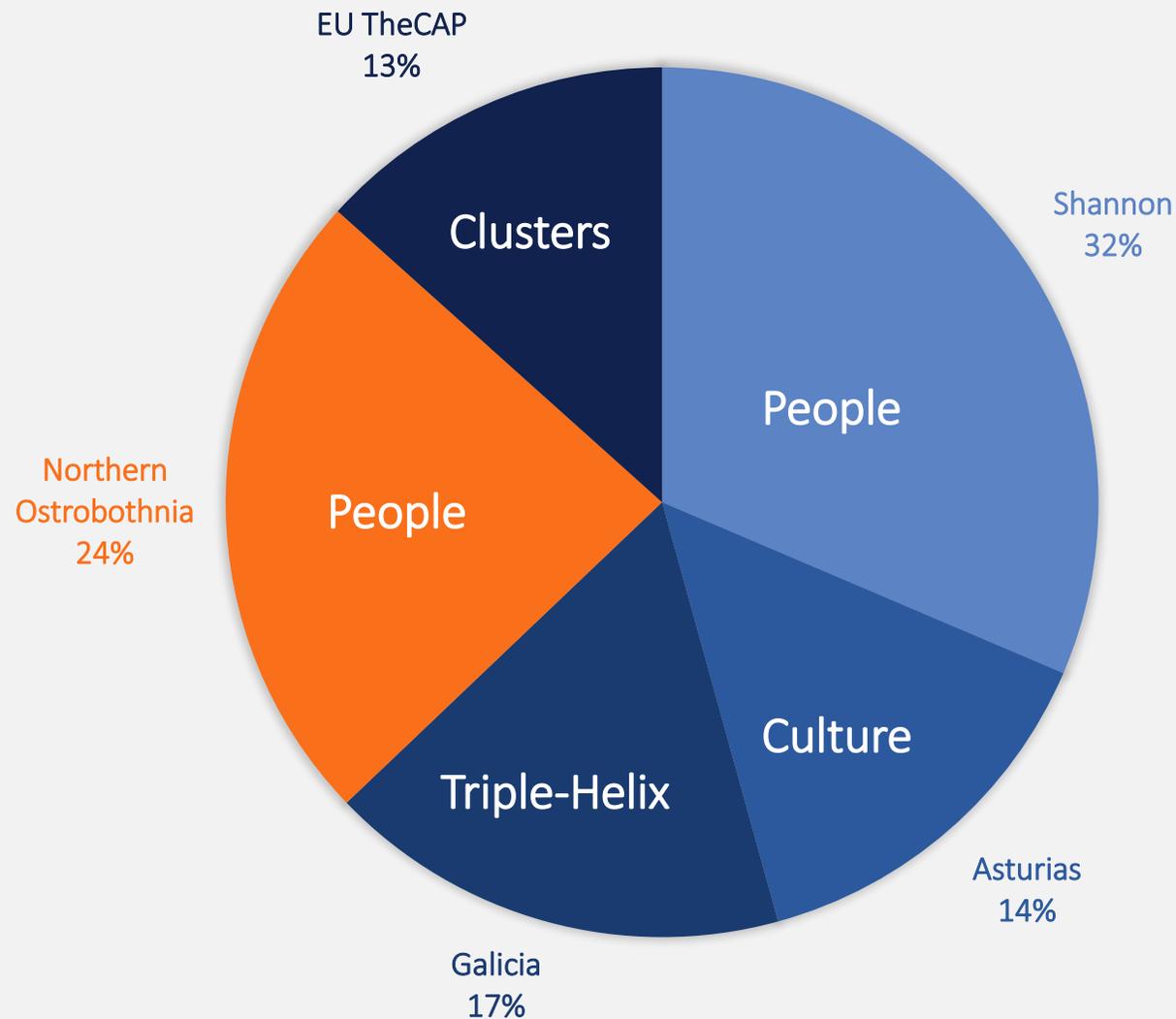
Clusters: A new Approach

	Context/Actors
	Components
	Policies
	Enablers
	Outcomes



Creating Clusters of Change
Manual: click [here](#)

Case Studies and Best Practices: A European Economic Growth Perspective



ACCIÓ – Director of Competitive Strategy at DGI

- Market-led cluster model
 - Cluster needs to be big on proactive policies – be a civic entrepreneur
 - Bottom-up industry-driven cluster in the long term
 - Strategic agenda – industry needs assessed
- Provide valuable content and quality services
 - Early success stories through collaborative projects to build trust
 - SME daily activities and support them
 - Create a network of cluster managers nationally and internationally

- Organise events specifically for industry
- What does the triple-helix community want from the cluster
- Connect start-ups with SMEs

ACCIÓ



Generalitat de Catalunya
Government of Catalonia

Beauty Cluster Barcelona

- Must take advantage of regional strengths
 - Support from Cluster Associations are needed
- Culture of the companies and a clear understanding of their needs is important
- Cluster must be a private entity
 - Must get the right people involved to build the cluster
- Be active, flexible, dynamic and adapt to change
 - Communication activities - Virtual exhibitions, webinars and LinkedIn for B2B are effective
 - Cluster Team engagement to understand deliverables

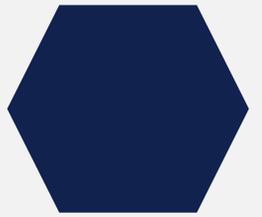
- Market based research reports
 - Community of practice/followers around your cluster strategic initiatives
- Strong cluster board is crucial as they have industry buy in
 - Be an influencer
- Step by step strategy and contact 2-3 firms per day - Clear strategic plan – 3 year focus
- Create a unique small school of manufacturing and training initiatives
- Year 1 of the cluster should be open to all and Year 2 should be starting to close for membership building

- Operational costs to be covered by members
- Controlled risks need to be taken and be bold
 - Must be profitable as activities are key for the value chain
- Membership agenda needed
 - A cluster is a family and must work together
 - Membership fee based on company size and turnover
 - Cluster managers must be flexible and adaptable, but must be supported by all regional stakeholders



Vision
Cluster to go
National
Hub/ Accelerator
Development
Collaborative
Actors become
the Voice

Clusters and their contribution to resilience across the EU in the post-COVID era



- Cluster and post-COVID-19 resilience
- The influence of the triple-helix environment
- EU policy importance and funding mechanisms
- The importance of the right people and cluster policy need
 - Talent and skills for industry
- Research & Development – need for more people to form the team of the cluster
- Green, digital, resilience and skills

- Cluster enabling digital transformation in SMEs
- Assessing digital readiness for industry
- Membership type cluster model
- Jobs, Start-ups and enterprise development – how do clusters support this?
- Integration of society into the cluster activities
- Metrics that need to be met for the cluster
 - Need for a national cluster policy approach

- Cross-cluster collaboration
 - Streamline and structure funding proposals better to meet industry needs and involve them
 - Put industry at heart of the cluster strategy with the support of academia and backing of government stakeholders
- Cluster2Cluster exchange on a more regular basis
- Future of clusters based on the collective industry response

Cluster Excellence

- Be Open and Collaborative
- Be Interconnected Europe-wide and Globally
 - Connect Clusters Cross-Sectorally
- Place Entrepreneurship and Innovators at the heart of Clusters
 - Drive Change and Lead Innovation
- Become Centres of Excellence in Skilling and Reskilling People
- Become an Accelerator of the Sustainable Development Goals



Closing

Let's dive in



Summary



Cluster Understanding



Digital and Advanced Manufacturing Landscape in Ireland



Clusters Matter



Cluster Business Models



IDEAM Cluster Story



Cluster Case Studies

Conclusion

Thanks for your commitment of the IDEAM Cluster.

Join [IDEAM Cluster](#) and we look forward to working together.

Dr. Jamie Meehan

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Rialtas na hÉireann
Government of Ireland