

# Keeping Ireland & Europe Competitive for Biopharma Manufacturing

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# IDA Ireland

- To **attract** best in class **foreign direct investment**
- To assist in the **development** of existing overseas clients
- To create valuable and sustainable **employment**

- Government

- Department of Enterprise,  
Jobs & Innovation

- IDA Ireland Board

- Overseas Offices  
Sectoral Divisions  
Regional Presence

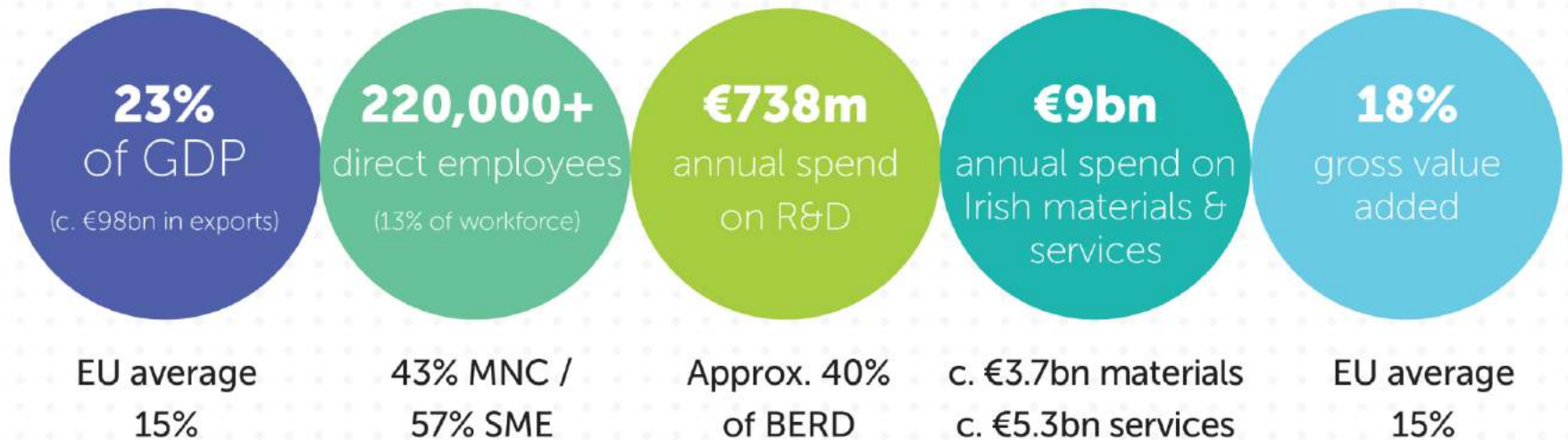
- 300 Staff

# 5<sup>th</sup> Year of Economic Expansion in 2016

- Ireland's economy is in its 5<sup>th</sup> year of economic expansion.
- Exports grew 14% in 2015
  - 17% increase in pharmaceutical exports
- GDP up 4% in first half of 2016.
  - Business investment +9%
  - Building and Construction +7.6%.
- Unemployment at 7.5% from peak of 15.1%
- GDP forecast to grow 3.5% in 2017.



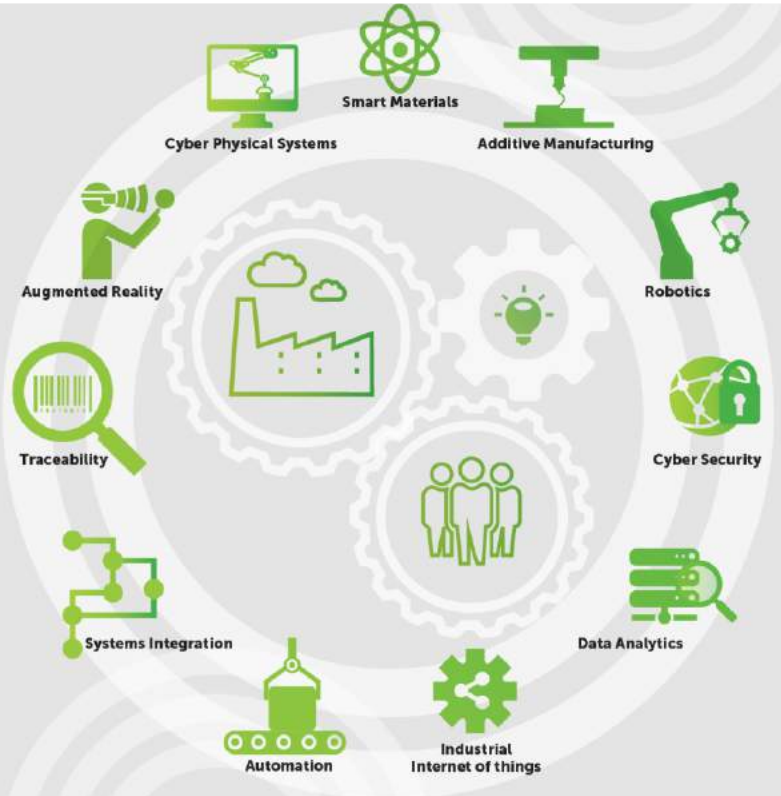
# Manufacturing in Ireland accounts for:



# Life Sciences Industry in Ireland

- 9 of the world's top 10 Pharmaceutical companies
- 13 of the world's top 15 Medical technology companies
- 90 plants - 33 FDA approved - 20 Biotech sites
- >€50 billion exports representing 27% of total exports
- 55,000 people directly employed
- Strong regulatory track record - focus on zero defect manufacturing
- Government support for company investment in manufacturing R&D
- Engineering/suppliers capacity and capability
- Research, training, education (SSPC, NIBRT, PMTC)
- **Building an Innovative Manufacturing Cluster**

# Advanced Manufacturing in Ireland- Linking People, Ideas & Technology



## Smart Materials



## Additive Manufacturing



## Robotics



## Automation



## Cyber Security



## Data Analytics



## Industrial Internet of things



## Systems Integration



## Traceability



## Augmented Reality



## Cyber Physical Systems



# Synthesis and Solid State Pharmaceutical Centre

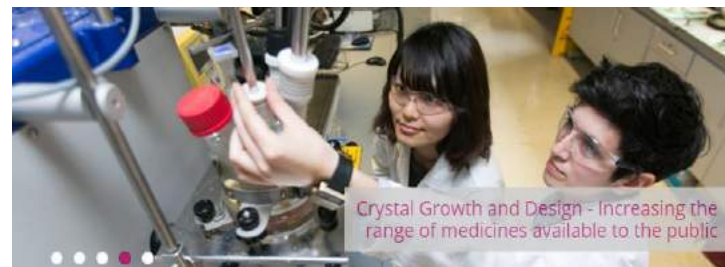
A global hub of **pharmaceutical process innovation** and **advanced manufacturing**

€10M (round 1) and €40 (round 2) investment by Science Foundation Ireland during “great recession”

- 22 industry partners,
- 9 Irish research organisations
- 12 international academic collaborators.

## Research areas

- New frontiers in pharmaceutical synthesis
- Crystal growth and design
- Drug product formulation and manufacture
- Advanced biopharmaceutical technologies



- Institute created by IDA in 2011 to support growth in biotech
  - €65M investment during “great recession”
- 6500m<sup>2</sup> GMP-like facility
  - Pilot scale Training and Research Facility
  - Suitable for low, mid and high TRL research
- 4,000 people received practical training in NIBRT in 2016
- €5bn biotech investment since 2011
- NIBRT as a key differentiator for Ireland versus other locations
  - More important than tax
- Strategic collaborations with companies:



Waters



3M



Bristol-Myers Squibb

IDA Ireland



# European Biopharma Mfng Cluster



# Global Competition



*Disconnection between patents share and manufacturing share  
Case Study: Li-ion battery production*

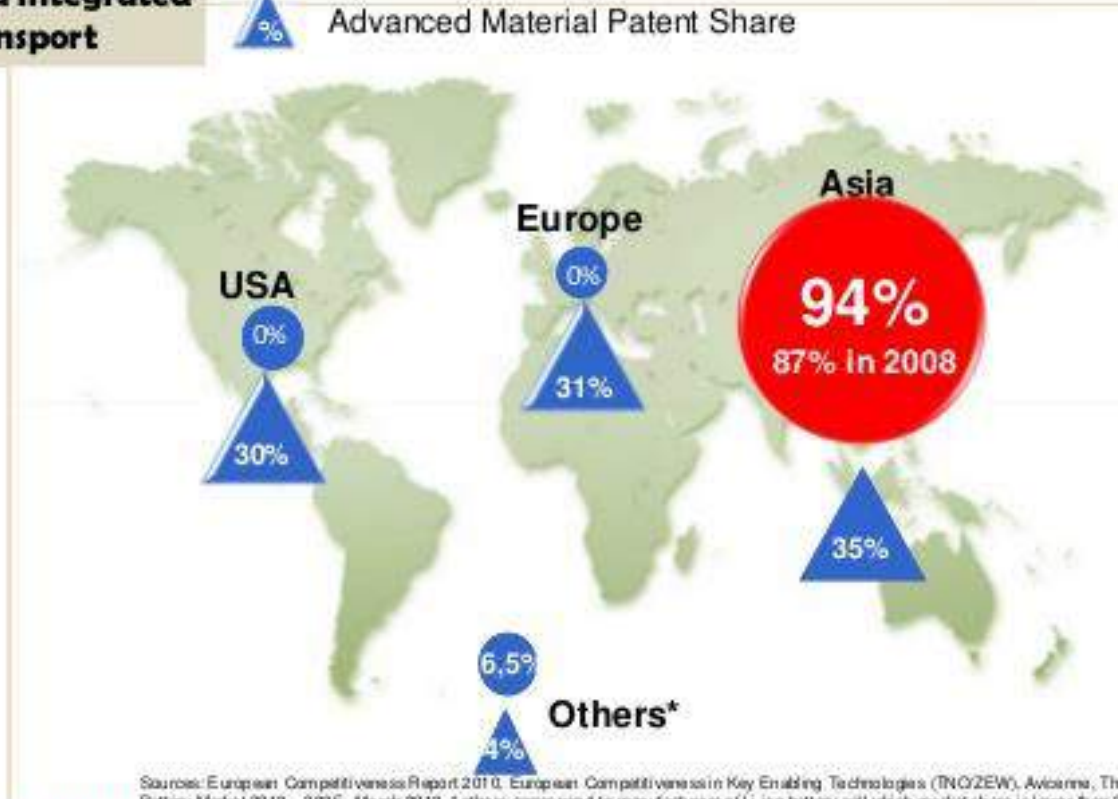
**Smart, green  
and integrated  
transport**



Li-ion battery cell production share in **2008**



Advanced Material Patent Share



Sources: European Competitiveness Report 2010, European Competitiveness in Key Enabling Technologies (TNO/ZEW), Avicenna, The Worldwide rechargeable Battery Market 2012 – 2025, March 2012. \* others correspond to manufacturers of Li-ion battery cell which market share is lower than 2%

Sources: European Competitiveness Report 2010, European Competitiveness in Key Enabling Technologies (TNO/ZEW), OQOC, Lithium-ion Batteries for Electric Vehicles: THE U.S. VALUE CHAIN, October 2010

Disconnection between patents share and manufacturing share  
Case Study: PV cells production in 2010

Secure, clean and efficient energy

% Share of PV cells production in 2008 and 2011

▲ Photonics patent share

% Share of yearly installed capacities

Europe = 74 %  
of global market



Source: Photon International Maps 2010, European Competitiveness Report 2010, European Competitiveness in Key Enabling Technologies (TWO/EFW) © J.P. Morgan, PVNews, Oliver Wyman Analysis, Solarbuzz 2012, SolarPower 2012, EPA

# Summary

- Europe's biopharma manufacturing sector is strong
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  - Significant growth opportunities in specific areas in particular
  - Cluster impact - high tech suppliers into process industry

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  - Intensive competition globally
  - Danger of complacency

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- Europe's Biopharma industry faces risk
  - Intensive competition globally
  - Danger of complacency
- **Need for National and EU support for biopharma mfg**
  - **Now rather than later - avoid scenario seen in other sectors**
  - **Need Investment in mfg R&D & training**
  - **Need Informed & forward thinking regulation**

# Thank You

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