

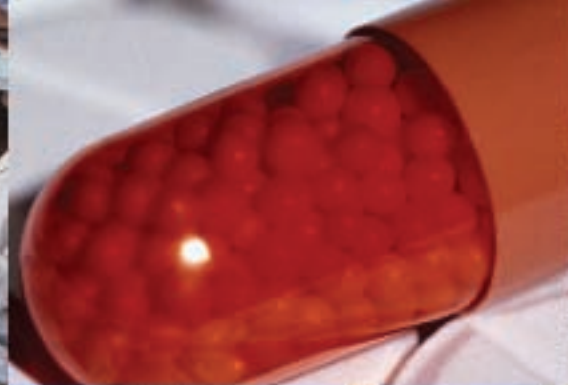
nepic

NorthEast Process
Industry Cluster

Passionate about pharmaceuticals

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PHARMACEUTICALS

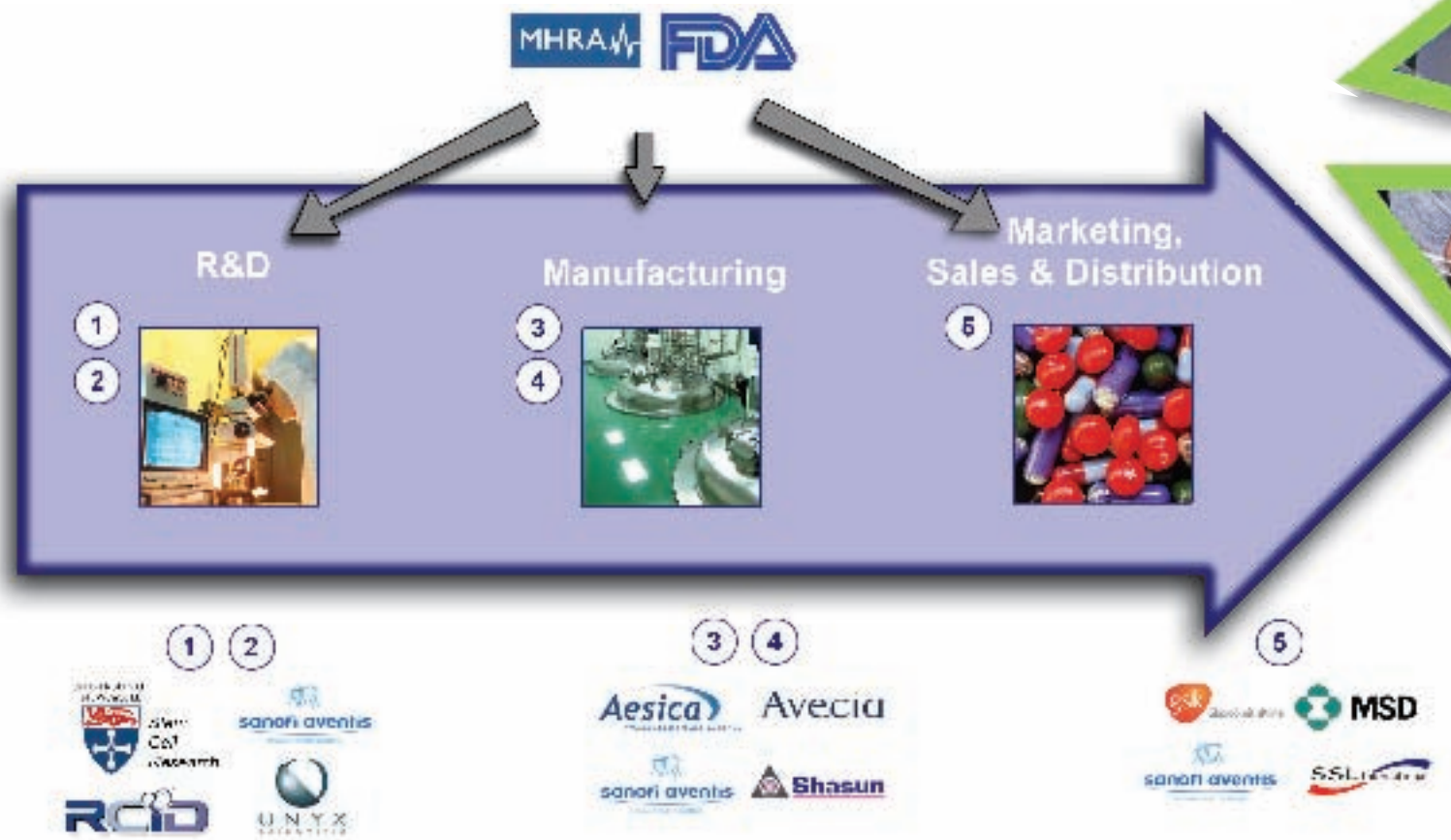


Introduction

- North East England is home to major transnational pharmaceutical companies including GlaxoSmithKline (GSK), Merck Sharp & Dohme (MSD), Lundbeck, Avecia, sanofi-aventis, Nicholas Piramal, SSL International and Aesica Pharmaceuticals
- Other major pharmaceutical intermediate suppliers are based in the North East, including BASF, Shasun, Evonik Degussa Seal Sands, Dow and Johnson Matthey Catalysts.
- North East England contributes one-third of the UK's GDP generated by pharmaceuticals at £1.5bn.
- More than 280 companies have their core businesses in North East England's life sciences, pharmaceuticals and biotechnology sectors, with another 200 companies in the supply chain.
- North East England has one of the largest and newest contract bio-pharmaceutical manufacturing facility in Europe, a major development by Avecia Biologics.
- North East England is home to leading edge biotechnology companies such as Avecia Biologics, Novocastra, Cambridge Research Biochemicals and Thermo Fisher Scientific.
- North East England has been issued with the only UK licence to carry out somatic cell nuclear transfer, at the Life Knowledge Park in Newcastle. This pioneering stem cell research will make significant contributions to medical knowledge, leading to the development of new medicines.
- North East England is a prime research area in regenerative medicine stem cells, oncology, genetics, neuroscience, Alzheimer's, disease prevention and health informatics.
- North East England's universities are internationally renowned for medicine, biotechnology, pharmacy, process engineering and regularly produce spinout companies.
- North East England's pharmaceutical companies have benefited from the product focus and incentive of the regions process sector.



Mapping the Pharmaceutical Life-Cycle to North East England Companies



Key Elements of the pharmaceutical life-cycle:

- 1: Pre-clinical research & development
- 2: Clinical research & development
- 3: Pilot-scale manufacturing
- 4: Full-scale active pharmaceutical ingredient/intermediate manufacturing
- 5: Formulation, packaging & distribution

Parallel support activities include:

- | | |
|-----------------------|---------------------|
| Analytical Sciences | Maintenance |
| Construction | Manufacturing sites |
| Contingency Planning | Operation |
| Financial Services | Procurement |
| Laboratory Facilities | Validation |



Example company profiles

Pre-Clinical Research & Development Companies

sanofi-aventis
Nonlinear Dynamics
Applied Imaging International
Cambridge Research Biochemicals

Pilot-scale, Intermediate & API manufacturing companies

Onyx Scientific
Shasun Pharma Solutions
Evonik Degussa Seal Sands
High Force Research
Aesica Pharmaceuticals
Nicholas Piramal

Clinical Research & Development Companies

The Specials Laboratory
SCHIN
Centre for Health Services Research
Datatrial

Formulation, Packaging & Distribution Companies

Merck Sharp & Dohme
sanofi-aventis
GlaxoSmithKline
Nicholas Piramal
SSL International



Example company profiles

Pre-Clinical Research & Development Companies - sanofi aventis

sanofi aventis is the world's third largest pharmaceutical company, ranking number 1 in Europe. It is developing leading positions in seven major therapeutic areas: cardiovascular, thrombosis, oncology, metabolic diseases, central nervous system, internal medicine and vaccines. The site at Alnwick is the focus of pre-clinical drug discovery and development.

Pilot-scale, Intermediate & API manufacturing companies - Evonik Degussa Seal Sands

A multinational organisation, with a key site near Middlesbrough, and supplying intermediates to the pharmaceutical and chemical industries. As the world's leading specialty chemicals manufacturer they offer the broadest portfolio of products and services available in the market covering the whole value chain of pharmaceutical development and manufacturing.

Clinical Research & Development Companies - The Specials Laboratory

The Specials Laboratory is one of the UK's leading manufacturers of unlicensed medicines for the retail pharmaceutical and healthcare markets. They manufacture a comprehensive range of non-sterile products and have access to a wide range of unique dosage delivery systems. They can develop formulas and carry out stability studies ensuring each customer receives the appropriate product for their patients' individual needs.

Formulation, Packaging & Distribution Companies - Merck Sharp & Dohme

MSD's site in Cramlington, Northumberland, was established in 1975. It was the first pharmaceutical site in the world to introduce fully-automated tablet production and its status sourcing a number of tablet products for worldwide markets makes Cramlington a strategic site for pharmaceutical production at Merck.





Selected support companies to the pharmaceutical sector in North East England - some of the 200+ organisations that provide services

Life Sciences Support

AES Laboratories - analytical & environmental services.

Cambridge Research Biochemicals - peptide & antibody synthesis.

ChemiSPEC - chemical analysis.

Edwards' Analytical - packaging analysis.

Thermo Fisher Scientific - cell culture & bioprocessing systems.

Intertek ASG - laboratory analysis.

Intertek MSG - analytical science & support.

Keane Analytical - stability testing

Atos Origin UK - computer system

The Specials Laboratory - clinical trial services.

Nonlinear Dynamics - software specialists.

WSP - environmental consultants.

Process & Quality Engineering

ABB Global Consulting - world-leading cGMP consultants.

AMEC - project & services management.

Bassaire Containments - engineering of controlled environments

Clean Design - Laboratory & clean room engineering

CPACT - process engineering consultancy.

Davy Process Technology - process design & management.

Excelsyn - pharmaceutical engineering.

Foster Wheeler - engineering & construction.

K Home International - construction & project management.

Mottram Commissioning - process plant commissioning & validation.

Management Services

Abacus Media - media consultants.

Career & Coaching - leadership coaching.

Dickinson Dees - legal consultancy.

Baker Mallett LLP - business consulting.

Griffon Management - recruitment.

Kelly Scientific Services - recruitment

LINK Associates - business continuity.

Mills Advertising - advertising consultancy.

PICME - productive specialists

Polo PR - public relations consultancy.

Solutions Recruitment - recruitment.

Ward Hadaway - legal consultancy.

Wynyard Consultants - management consultants.

Northumberland - Tyne & Wear office:

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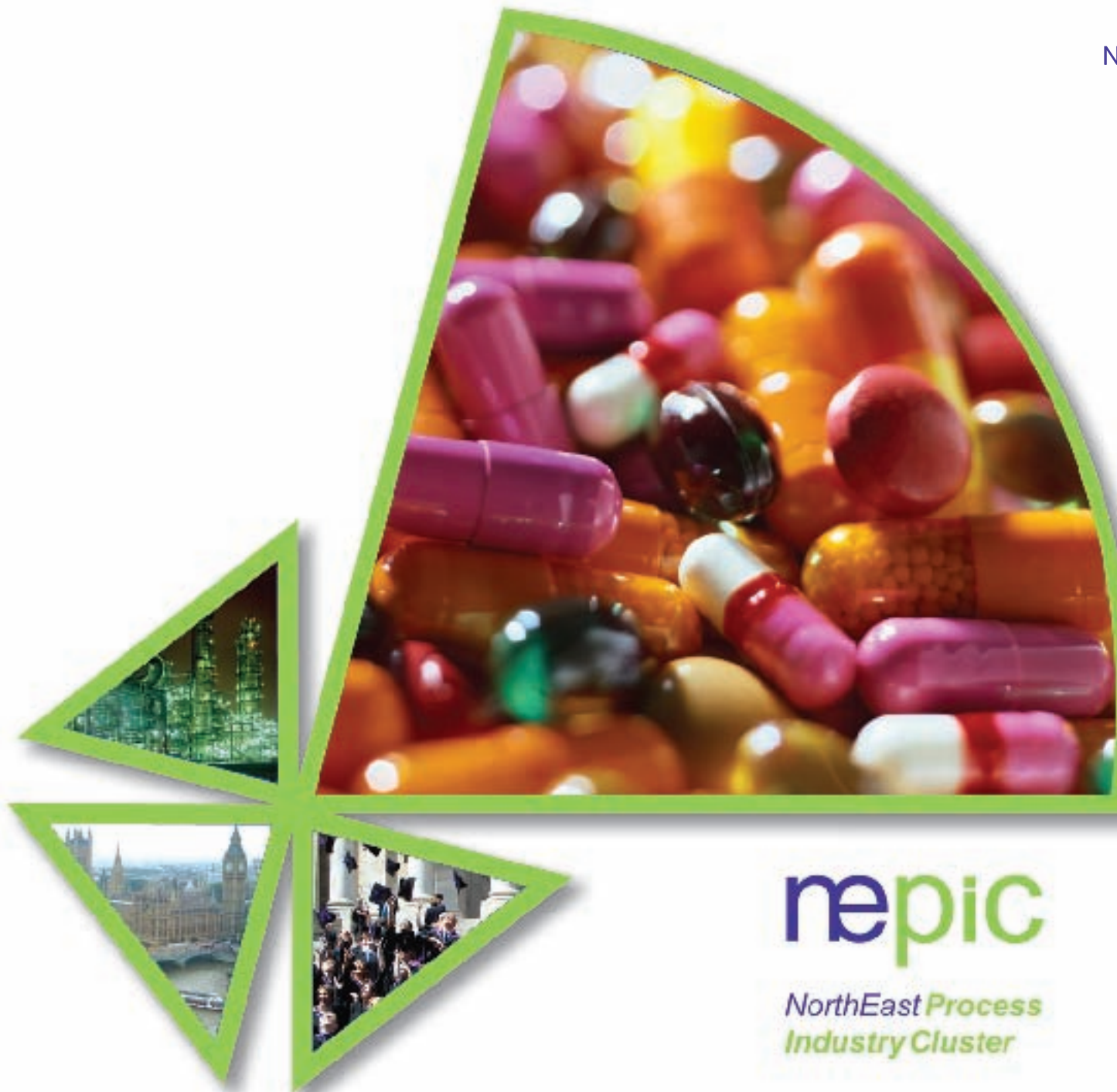
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