



MMIP

UK Medicines Manufacturing Industry Partnership

How to plan a future proofed Technology Roadmap

Greg Anderson - GSK



MMIP

UK Medicines Manufacturing Industry Partnership

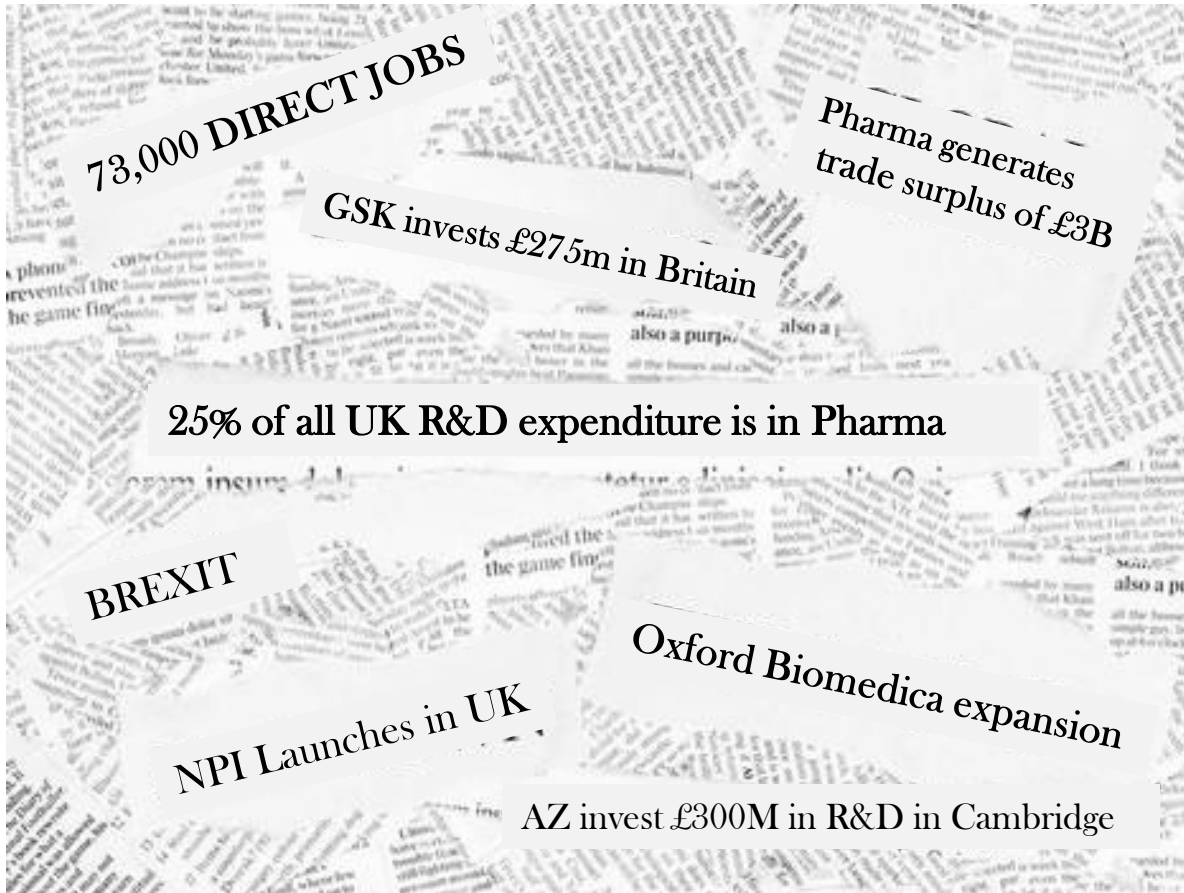
How to plan a future proofed Technology Roadmap
AND why the industry needs one in the first place?

Innovation & Technology for UK Pharma Success



- Look (quickly) at Pharma Industry in the UK
- Introduce MMIP Technology and Innovation Workstream
- Why have a road map
- Opportunities – supportive and collaborative
- How to engage with the road map and build around it
- How to make a difference

Pharma is a major contributor to technology innovation and growth in the UK



Strategic Government and Industry Partnership through MMIP

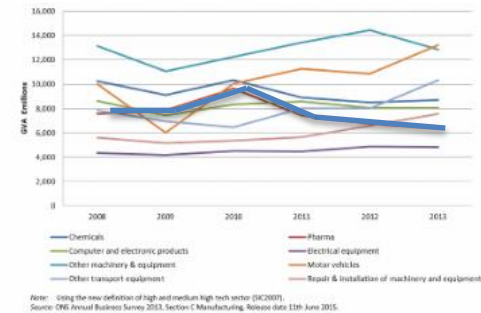


Drivers

- GVA for Pharma dropped over last few years
- MMIP and Government focus on **manufacturing**
- Previously more of a focus on Discovery and Development – historically lost out on scale up from clinical success to commercial

Created catalyst for change

- Enhanced relationship between Industry and Government – with core topics under discussion (including technology, fiscal & skills)
- Support existing industry strengths and look for longer term sustainable growth in new areas
- Pharma is most recently a key growth area under Government funding spotlight (Spring 2017 budget also identified Robotics & Auto)





What are the challenges Technology can support

- Technologies drive investment
- Technologies enable companies (and countries) to lead-not follow
- Technologies should meet real (appropriate) identified needs
 - Enablers for new medicines
 - Enable access and drive value- for customers and payors
- Technologies are accelerated with:
 - Fiscal incentives/right skills/innovator collaborations
- Technologies typically need direction.....

What are the challenges Technology can support



- Technology developed in isolation doesn't often succeed –Sinclair C5
- One man's vision -IQ149
 - Cost same as 2nd hand car
 - Designed for urban use (weighed 30KG)
 - Top speed 15mph (halved in cold weather)
 - Tested in the dark

•Technologies need right direction.....

.....UK doesn't have a Pharma Technology roadmap



Roadmaps: Living pathways to focus activity

What is a Technology Roadmap:

- Advisory not directive
- Relative priorities
- Relative UK strengths
- Consensus
- Consider as a preferred pathway, but not the only pathway
- A living document

How do I use it?

- Priorities recognised as technology and business challenges
so
- There will be technology and business reward to those who overcome these challenges

MMIP undertook research to identify technology gaps & opportunities

Background research for UK Roadmap



- USA produced Cell and Gene Technology Roadmap
- Input also sought from specific sources (including latest emerging Government strategies)
 - Literature research- Data driven / recent / relevant
 - Interviews with stakeholders:
 - Academia/Pharma/SMEs/CMOs/NHS/MHRA/KTN/Catapult/CPI
 - Recent interviews with AZ and GSK
- Gap analysis highlighted some areas to build a roadmap ‘ask’
- Considered opportunities for wider Pharma

Technology Direction - Vision



Roadmap ask needs to be :

Integrated

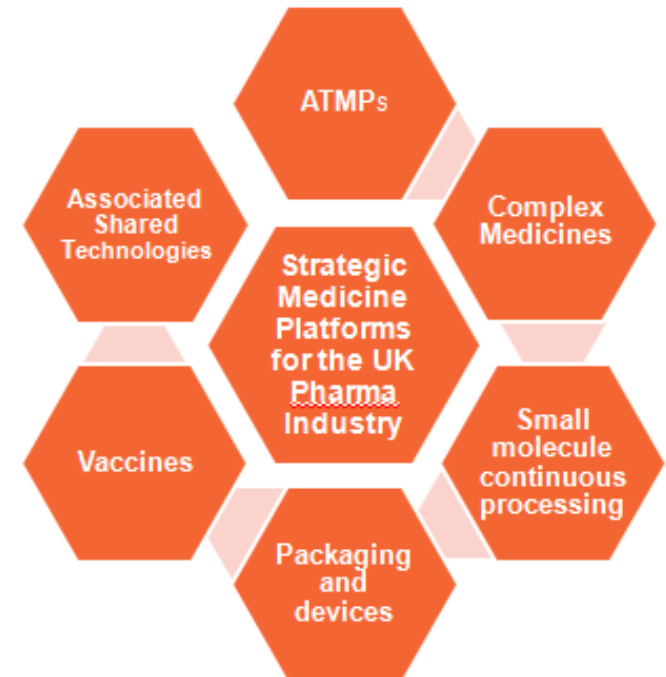
- End to end and across all medicines platforms
- Tie in with other industry 'asks'

Deliverable

- To sustain growth of the UK Pharma sector
- Faster introduction of associated technologies
- Scaleable from bench to production

Connected

- Adaptive portfolio approach
- Seeding and pull through of technology
- Aligned across industry, government, academia

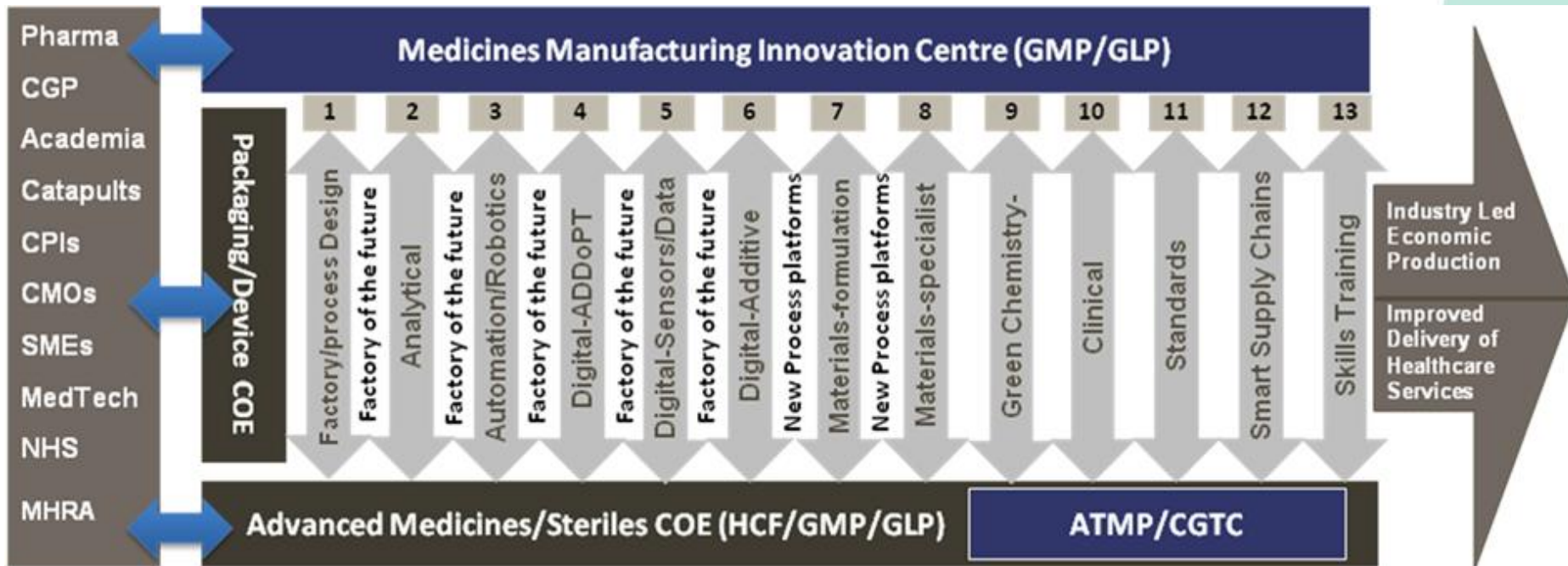




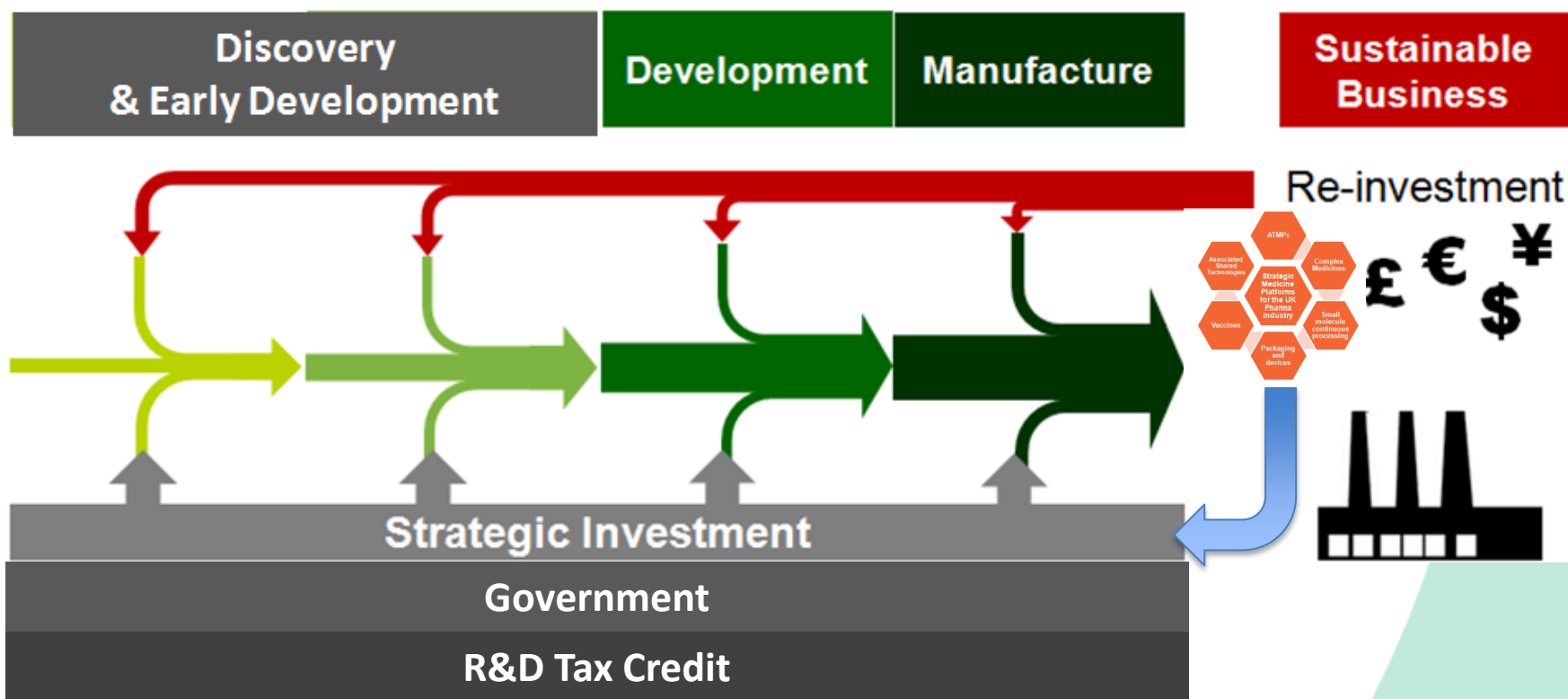
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Technology Roadmap-Research output

- Focus on filling immediate technology gaps
- Centres can be virtual as can technology strands
- Focus on connecting/sharing and focus on acceleration to clinic



Goal is to build long term world class research to manufacture capability leveraging technology



Our roadmap will extend into a structure linking industrial strategy to our technical challenges

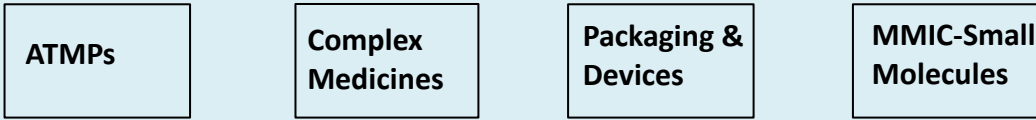


HOW will future growth and applications be supported

WHY are challenges and future technologies important



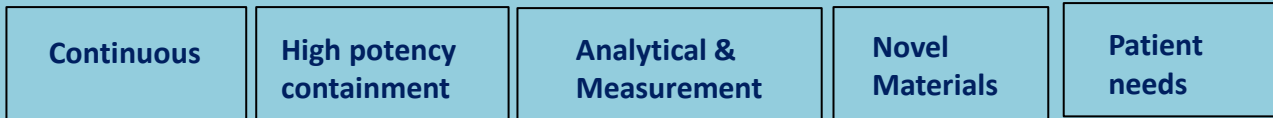
Application Roadmaps



Technology Roadmaps



Technology Challenge areas



Opportunity for supported and collaborative innovation for UK Pharma success



- If you innovate in a roadmap area you'll be delivering to an identified industry need
- Increasing the chance of getting support, getting to market and getting rewarded
- Collaborative innovation based on real needs (industry & patient)

Have a shared goal

Help realise others vision

Motivate your business

Share new ideas

Build on others' ideas

Buy-in

Engagement and alignment translates to success

- Roadmap identifies shared opportunities and shared technologies – where we'll all benefit. Differentiation (as always) will be in the medicines
- Positive direct & indirect impact on UK business