Building Regional Productivity
Role of University Research in (Regional) Innovation

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Sustainable Economic Growth for Regional Australia 2011
Overview

• Productivity, Universities, Research & Innovation

• Examples that demonstrate:
  – Seeding opportunities for clever & green ideas
  – New initiatives with multiple & flow on effects for the region
  – Connecting & taking advantage of local strengths

• Importance of Partnerships
  • between Community, Government & University
  • Regional Productivity & Universities
What is Productivity?

• “a measure of the efficiency of a production process; or
• cost or value of output per unit of input “
• thus, an economy is productive when it is producing a profit (...or a benefit?)
• a measure of economic vitality that can lead to social, cultural and intellectual vitality too
Australia’s “Innovation System”


- *Productivity depends on Innovation* - and this will help build/revitalise a strong and responsive industry sector

- Looking to Universities for Innovation

- Promoting industry-university collaborations
- Recognises global nature of key industries & value of int’l engagement for Australia
University Core Business

• **Higher Education Training**
  Professions critical for society
  Intelligent, informed, critically thinking citizens
  Skilled workforce able to tackle challenges of society

• **Raising Aspirations of the Population**
  Forum for awareness & debate of national & int’l issues
  Providing Australia with global connections
  Contributing to a better world

• **Advancing & expanding world knowledge thru Research**
  Discovery, Fundamental through Applied, Reflective Analysis, Innovation?
What is innovation?

Using *novel* approaches to solve problems for human *benefit*
What's New?

Newness
Novelty

Ideas
Discoveries
Technologies
Techniques
Materials….etc..

Research Territory:
Scientists, University & Institute Researchers
Global Networks—but Cross-Disciplinary Challenges
Where is the Benefit?

Enhanced Performance
Efficiencies in Energy, Time, Scale
Manufacturing/Processing
Environmental Benefits
Regulatory Demands
Global Imperatives
Sustainability

Value, Benefits

Business Territory:
Identification of Industry & Business needs, problems, & issues;
Not always coordinated approach within an Industry Sector
Innovation finds the intersection

Intersection where new discoveries are translated to use & benefit
PRODUCTIVITY improves when Innovation DELIVERS

Real Innovation requires the understanding the potential for interaction between research discovery and industry priorities

Research Institutes & Universities
• Need to understand business constraints, targets & timelines

Industry/Business
• Need for leadership at the interface
VR Tek Global Ltd
Tyre Recycling

Australian Company
• Billions of waste tyres $\rightarrow$ env’mental & health hazard
• Huge source of rubber ; metal and other solid wastes

• Devulcanise Waste Tyres:
  • reusable rubber, plus
  • Novel compounds usable in composites

• Scalable pilot plant at Deakin
  • Process & Materials Engineering Univ. Research

• Huge Global Market
Carbon Fibre Wheels-- SME Manufacturing

1. Carbon Revolution (CFusion), GEELONG company in partnership with Deakin University,
   • world's first one piece carbon fibre wheel,
   • Clean Technology Showcase launched by the PM, Julia Gillard and Minister Kim Carr.
   • Plan for a Clean Energy Future, Commonwealth govt program assisting Australian businesses to develop clean energy technologies as part of its

2. GMC Business Development
   • 2011: Victoria State Govt Minister for Manufacturing and Innovation, de La Riva provided $ 800k grant to Geelong Manufacturing Council (GMC)
   • to support Business Development liaison between GMC SMEs and Deakin University Researchers
Big Picture Regional Benefits
Australian Future Fibre Research & Innovation Centre

- AFFRIC $102M Research Centre
- Builds on Deakin’s strengths in Engineering & Materials
- Builds on Geelong strengths in manufacturing & textiles
- Potential to contribute to new knowledge
- Build new industry, new products with sustainability through light weight composites, recycling, natural products and carbon fibre
- Build into Engineering education in Geelong region via Gordon and Deakin degrees
Why make carbon fibre?

- Light weight transport
- reduce mass → reduces fuel costs
- The global demand for carbon fibre
  - 2008 est. 35,400 tonnes,
  - 2014 AKSA predicts 75,000 t
  - 2020 AKSA pred. 150,000 t
- High Demand Material for 21st Century
Demand growth for carbon fiber will accelerate significantly

Note: Graph shows estimated net capacity based on mix weighting, approx. -25% less than nominal 12k capacity which is published higher
Source: SGL Carbon Market Research
Why make carbon fibre in Victoria?

- Australia stable economy, secure with strong IP laws
- Close to large emerging Asian markets in China and India
- Easy access Airport (Avalon)
- Surrounded by flat, available land at relatively low cost
- Skilled workforce with access to high level training
- Manufacturing history especially in auto
- Potential for developing new manufacturing businesses
2012 Education Investment Fund Bid:
Regional Education Round

Centre for Advanced Design in Engineering Training
CADET is a collaborative venture between Deakin University and Gordon Institute of TAFE to address Australia’s critical skills shortage in engineering. Additional core partners in CADET are Belmont High School and Matthew Flinders Girls Secondary College.
Geelong Centre For Emerging Infectious Disease

• “One Health” collaboration @ new infectious diseases; E.g. SARS, HIV, Avian Flu, Hendra

• Initially in wildlife, transmitted to domestic animals and then to humans

• **AAHL** key player with
  – **Barwon Health**: human health risk & public health issues
  – **Deakin**: wildlife disease & ecology
  – **CoGG & BioGeelong**

• Plays to Geelong’s strengths

• Potential Biotech spinoffs
What does “Regionality” mean in this mix?

Positives for Development
• Lifestyle & lower costs
• New residents; Big fish small pond effect
• Space to expand; SME culture
• Sense of community & purpose
• Can-do approach--valuable if focused
• Local govt support

Possible negatives?
• Limited skilled workforce (tempered by Uni presence?)
• Legacy industries (possible redirection?)
• Limited flexibility & appetite for change (community engagement and confidence)
Stimulating Productivity in Regional Areas
role of your university

• Technology transfer model can work to build business diversity, wealth and productivity but needs strong University-Business relationships

• BUT success is exaggerated; successful University spinouts are rare with long lead times to real economic benefit

• New businesses from university research are a small fraction of all new businesses.

• But in regional areas, Universities can provide less tangible attractors to stimulate new development, especially if the university is connected and committed to the community
University attractors for Building Productivity in Regional Areas

- Jobs and Skills Training,
- Regional specialisations related to research or professions
- Youthful thinking, Future Focused ideas,
- Intellectual and Social Vitality, the social “buzz”
- Confidence, Global perspective,
- A place to grow ideas and new ventures,

Regions build PRODUCTIVITY as profit margins rise, & when less tangible benefits are added to the community

Overall, Universities add to both economic productivity and community vitality
Thank you...

Questions or Comments?