Developing long term industrial partnerships in research

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Universal objectives

Propagate inward investment to create jobs…

Show off the reward of innovation…

Overcome the skills shortage…

Bridge the gap between academia and industry…

Lower income tax through wealth and job creation…
To an extent we’ve been there done that…

In ten years created over 1000 direct jobs having persuaded a £60 billion p/a company to invest their global R&D on an ex-slag heap

On the back of university-led innovation developed with local industry

En route turned a sow’s ear

Coking works – before demolition 1999
Into a silk purse

The Advanced Manufacturing Park 2014

The Advanced Manufacturing Research Centre
From small acorns…

Partners

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We were frustrated trying to transfer technology

I grew up in Sheffield and witnessed the catastrophic consequences of thousands of jobs lost due to complacency and technology.

Decided to do something about it
Why metals and manufacturing matter to me

South Yorkshire
  – Thousands employed
  – World reputation
  – World class ‘products’
  – Unique skills

And then…

1969
  • 55% of Sheffield jobs were in manufacturing
  • Most manufacturing was in traditional skills of steel and metals industries.
  • Labour-force largely trained in traditional manufacturing methods

1970-2000
  • 92,000 manufacturing jobs lost (75% of total)
One tool - $billion savings

The reality…

“Faster, Better, Cheaper, Greener - the mantra for the Millennium”
How?

One Vision and 3 Cs
Capacity, Capability, Commitment

How? ‘Collaborative’ Approach:
Finding, and continuing to find the match = Secret to sustainability
The proposal...

South Yorkshire Centre of Excellence
SYCOE
Applied research & development into next generation machining technologies.

What has been created?

Seven centres employing:

Best people
>400 staff > 200 MSc or PhD

Best processes
From IGPS to IPQA

Best plant
>£100 million SOTA facilities

Best partners
> 100 committed industrial sponsors
Case study: HPDM

- Rolls-Royce led. Create/validate SOA process to be transferred onto 48 new machines.
- Achieved a 50% reduction in overall manufacturing time – vast savings on NRC and RCs.
- Added benefits to other partners including British Government.

Regional Impact

- Regional supply chain
  - e.g. Orders for Corus, Firth Rixon, Doncasters, Fletchers, Forgemasters, Thorntons, Technicut, Newburgh, Nikken, Mahers, Reliance Gears, Johnson and Allen, Pryors etc.
- Inward Investment to the AMP
  - e.g. Rolls-Royce, Nikken, Technicut, Mahers, Carpenters, Mori Seiki, TWI, CTI, Pro-Laser, Vibrant NDT, AML, Dormer, Liebherr, Bromley FI etc. etc.
When it’s all put together…

(Typically large and thin walled)

Was
Number of Pieces: 44
Number of Tools: 53
Design & Fabrication hr (Tools): 965
Fabrication hr: 13
Assembly Man-hours: 50
Weight (lb): 9.58

Now
Number of Pieces: 6
Number of Tools: 5
Design & Fabrication hr (Tools): 30
Fabrication hr: 8.6
Assembly Man-hours: 5.3
Weight (lb): 8.56

73% Cost Reduction

Collaborative Approach

Finding, and continuing to find the match = Secret to sustainability
How? ‘Collaborative’ Approach:

University  Government
Industry  Workers

Finding, and continuing to find the match = Secret to sustainability

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Success
Thank you

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