The Sweet Smell of Success

Creating Partnerships to fuel the Knowledge Economy
How life must feel sometimes...

But Jesus, said unto them, A prophet is not without honour, but in his own country, and among his own kin, and in his own house.
- Mark 6:4
“Great ideas emerge out of all kinds of feedback loops, development activities and sheer chance. This is another reason why it is so critical to build dynamic networks between academic researchers and their business counterparts.” Richard Lambert

‘.. Engagement is not a ‘third mission’ but a central element of the existing roles of the university, i.e. teaching and research.’
The Sweet Smell...

- Measuring Success.
- Celebrating Success.
- Brokering Success.
Measuring success...

I like the generosity of numbers. The way, for example, they are willing to count anything or anyone: two pickles, one door to the room, eight dancers dressed as swans.

Mary Cornish
The Generosity (or Meanness) of Numbers

• Gross Expenditure in R&D at 1.67% of GDP (EU at 2.03%)
• External income for universities grew by 6% in the last year to reach £4.2bn 2015/16.
• FDI for R&D highest in OECD at 18% of GERD.
• And yet...
  – Only 2.4% of world patents.
  – Only 3% of innovating business use universities to source solutions.
• However...
  – 12% share of UK science citations in world patents.
  – 20% of business who collaborate externally do so with universities.
Celebrating Success…

Celebrate good times, come on!
(Let's celebrate come on now)
Celebrate good times, come on!
(Let's celebrate)

Kool and the Gang
USW provides vital initial step for company’s improvement trajectory

South Wales manufacturer benefits from key knowledge transfer advice in midst of recession to embark upon evolutionary journey.

Brick Fabrication manufactures pre-fabricated building products for the UK House Building industry, supplying national house builders and the construction industry. In 2008, the company undertook its first Knowledge Transfer Partnership (KTP) project with the University of South Wales (then the University of Glamorgan). At that point, the company had sales of approximately £800,000 per annum and employed 16 staff. During the two-year period of the project, sales doubled to £1.6 million per annum and its employees increased to 48. In the five years since the project ended, sales have further increased to £4 million with 72 colleagues now employed.

In 2008, when KTP was first considered as a route by Brick Fabrication, it now seems inconceivable that there wasn’t a formal facility for engineering drawing in place. All products were manufactured to rough sketches, often with little or no dimensional detail. During the project, the associate successfully introduced Autodesk Inventor 3D CAD software to Brick Fabrication. For the first time, staff and customers were able to visualise the increasingly complex products the company was manufacturing.

Having the ability to visually demonstrate its products was one of the key enablers that allowed the steady growth of the business. At that time, the building industry was in the midst of one of the longest and worst recessions in living memory. The introduction of Autodesk was so successful that the global Californian-based software company who provided the software featured Brick Fabrication on their website as a case study.

Building on the success of the first KTP project two further KTPs were undertaken, in partnership with Cardiff University. The first was to build upon the successful implication of 3D CAD to the business by redesigning the factory layout in a format conducive to Lean Manufacturing techniques. Computer Aided Design was then linked to Computer Aided Manufacturing (CAD/CAM). Further investment in automated production machinery followed which, as a consequence, increased the quality and capacity of the manufacturer.

The most recent KTP looked at customers’ future needs and then expanded the product range. As part of this project, a fully developed business plan has been established which projects sales of Brick Fabrication to reach £10 million per annum by the end of 2020.

The experience enjoyed by Brick Fabrication demonstrates the advantages of the Welsh HE sector partnering to place the strategic development of the company partner at its core. KTP is a UK-wide programme that has enabled businesses for the past 40 years to improve their competitiveness and productivity through the better use of knowledge, technology and skills that reside within the UK Knowledge Base.

“Without gaining the advice and support of USW and obtaining the initial KTP funding, it’s unlikely the business would have grown at the rate it did.”

John White, Director, Brick Fabrication

Knowledge Transfer Partnerships

For more information visit www.southwales.ac.uk/business/utilise-your-expertise

Thames Valley Country House Partnership

Not so long ago a visit to a historic house might not have come with high expectations. Granted, the building and its setting would be impressive, so too its contents. But too often the story of the place – of the people who made it tick, of the events it witnessed, of the sheer pulsing life within its walls – was untold. Chances are that the hum of chatter in the tea shop would have been focused on last night’s TV, rather than what visitors had just seen and done.

This isn’t a dusty parade of relics from the past – heritage is a narrative that’s as relevant today as anything else.

By working with local communities, country house owners and managers, as well as volunteers and academics, the TVCHP uncovers the social, economic, political and cultural lives of the people who lived in the houses. “We bring them to light and give contemporary meaning to the National Trust’s properties, and members of the Historic Houses Association, including Blenheim Palace, Broughton Castle, Compton Verney, Highclere Castle and Kelmscott Manor,” says Dr Cox.

Better yet, the TVCHP comes with a hefty dose of talent development. “We encourage our academics to think about the commercial applicability of their research,” says Dr Cox. “It’s a light touch approach – one that fosters their sense of story-telling. This has a knock-on effect on the many volunteers who give up their time to work for the Trust: ‘They’re so much more involved now – they relish the direct access to Oxford’s research.’

The net result is that country houses mean business. They are more sustainable, visitor numbers are up, and so is Trust membership. Oh, and that hum of noise in the tea shop? These days it’ll be visitors who’ve stayed so long that they need a refill – and they’re probably talking to volunteers about what they’ve just seen.

“We’re very excited about this partnership with the humanities academics at Oxford University – their research will help us enrich and add depth to the stories we can tell about the special places in our care.”

Alison Evans, National Trust’s Assistant Director of Operations in London and the South-East.
A shady friend—for Torrid days—
Is easier to find—
Than one of higher temperature
For Frigid—hour of Mind—

Emily Dickenson
Why do they do the things they do?

Working with the private sector

Exhibit 27  Activities with private sector companies in the last three years (% of respondents)

<table>
<thead>
<tr>
<th>Category</th>
<th>% of Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>All</td>
<td>30</td>
</tr>
<tr>
<td>Health Sciences</td>
<td>25</td>
</tr>
<tr>
<td>Biology, Chemistry, Veterinary Science</td>
<td>35</td>
</tr>
<tr>
<td>Physics, Mathematics</td>
<td>30</td>
</tr>
<tr>
<td>Engineering, Materials Science</td>
<td>50</td>
</tr>
<tr>
<td>Social Sciences</td>
<td>30</td>
</tr>
<tr>
<td>Arts and Humanities</td>
<td>25</td>
</tr>
</tbody>
</table>
Commercialisation of academic knowledge.

Exhibit 55  Commercialisation in the last three years - 2008/9 and 2015 comparison (mean number used % respondents)

- Taken out of patent
- Licensed research outputs to a company
- Formed a spin-out company
- Formed or run a consultancy via your research

2008/9  2015
Initiating activity

Exhibit 32  External activities initiated by university knowledge/technology transfer office (% of respondents)
Frequency of contact.

Exhibit 30  Frequency of contact with institution's Knowledge/Technology Transfer Office/consultancy services in the last 3 years (% of respondents)
Challenges to creating partnerships

- Lack of time
- Bureaucracy/inflexibility of university admin
- Insufficient resources
- Insufficient rewards
- Unwillingness in external organisation to meet full cost
- Identifying partners
- Differences in timescale
- Reaching agreement on terms (inc. IP)
- Cultural differences

[Bar chart showing percentages of challenges for external partners and no external partners]
So I'm sorry for the people who sell fine saucepans,
I'm sorry for the people who sell fresh mackerel,
I'm sorry for the people who sell sweet lavender,
'Cos they haven't got a rabbit, not anywhere there!

A.A Milne
Konfer – more than just a database.
Konfer – informing users.

Advanced Photonics

Concepts in photonics, understand main physics principles behind modern photonic technologies, such as optical communications, nanophotonics, plasmonics.

Nanomaterials Photonics

Nanomaterials photonics group is working toward development of stable dispersion.

Hybrid Photonics

Hybrid Photonics Tel: 0044 23 8059 2093 lagoon[a]soton.ac.uk www.hybrid.soton.ac.uk Research At the Laboratories for Hybrid Optoelectronics we

Latest news

News story: North Wales photonics cluster: apply for business funding

Firms working in a hotspot for photonics, electro-optics and opto-electronics in North Wales can apply for funding for Innovative projects.

@KTNUK_ESP

20 years of the Institute of Photonics, great turn out at celebration. Many familiar faces from photonics https://t.co/tYJIExx3N8

@KTNUK_ESP

* @foggin_espi Photonics #H2020 support actions on regional clusters and photonics into mokerspaces. @fablab all part of our event, 27 Oct

National Centre for Universities and Business
Hybrid Photonics

Article

Hybrid Photonics Tel: 0044 23 8059 2093 logistics@seton.co.uk www.hybrid.seton.co.uk Research At the Laboratories for Hybrid Optoelectronics we conduct research on the nanoscale—typically a few billionths of a meter or ~50,000 times thinner than a human hair. At this scale the dominance of the quantum nature of matter is clearly evidenced in the physical properties of the systems we investigate. In our group we are particularly interested in the ways that light interacts with matter at this small scale and in the transient dynamics of these interactions which usually evolve in a few trillionths of a second. Hybrid Nanostructures Innovative hybrid systems are inspired by naturally-occurring biological nanostructures that use energy transfer and recycling to transform light into chemical energy. Here we explore alternative ways of removing carriers from efficient light absorbing materials such as organic semiconductors and nanocrystal quantum dots (QDs) and transferring them into single crystal inorganic semiconductors with high carrier mobility. Such phenomena are yet to be observed and will pave the way for a completely new generation of hybrid optoelectronic devices. Using ultrafast spectroscopic techniques we investigate alternative ways of removing carriers from efficient light absorbing materials of low carrier mobility, such as organic semiconductors and nanocrystal quantum dots, and transferring them into single crystal inorganic semiconductors with high carrier mobility. We recently demonstrated record exciton transfer efficiency of 65% and by implementing novel technologies developed in our group in excitonic solar cells we have achieved a threefold enhancement of the photocurrent conversion efficiency of a single junction photovoltaic device. Quantum Optoelectronics We investigate the interactions of light and matter in an environment of strong optical and electronic confinement. By spatially localising photons and electrons in a very small volume we modify their mutual interactions in a manner that gives rise to new optoelectronic properties. Semiconductor microcavities, the nanostructures used to confine photons and electronic excitations, are a new breed of optoelectronic device in which light and matter combine to create exciton-polaritons, unusual quasi-particles with fascinating properties. The bosonic nature of polaritons and the unique characteristics of the
Konfer – increasing connectivity.

How it works

1. Complete and submit the form
2. Receive a reply through your own Inbox
3. Start konferring!

Photonics research enquiry

Collaboration Type
- Informal Advice
- Paid Consultancy
- Unpaid Consultancy
- Equipment
- Community Activity
- Contract Research
- Invited Talk
- Prototyping
- Other

http://www.southampton.ac.uk/
Leaning on and learning from each other...

For there is no friend like a sister
In calm or stormy weather;
To cheer one on the tedious way,
To fetch one if one goes astray,
To lift one if one totters down,
To strengthen whilst one stands.

Christina Rossetti
THANK YOU