A Three Way Win

Collaborative Design as a mechanism for successful Knowledge Transfer and Exchange, enhancing student employability and adding value to the student experience

Presented by:

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Today’s Presentation

- Project Background
  - The Partnership Challenge

- Introducing the company
  - Halo Thermal Imaging (K2 Thermal Imaging)

- A new type of placement?

- Student Placement Case Study

- Three way win and shared Benefits

- Where next
Q. How do you convince companies that working with a university is a good idea?

Q. How do you show that it will ... pay dividends? ... be worth the time invested? ... be cost effective?

It can be something of a perennial problem!

Companies don’t always see the benefit of working with and partnering a university, or

They see the benefit but expect it to be free and not a partnership of mutual benefits
Teesside university has operated the Working with Business Programme for several years to encourage academics to develop relationships with the business community.

The programme has 2 levels:

- **Mentored Challenge** for staff with limited/no experience of working with business who are at an early stage of their career in teaching and/or research.

- **Partnership Challenge** is aimed at experienced staff and should have the potential to provide significant business, offer the prospect of a long-term commercial relationship for the University or provide a route to a new sector.

**Funding Support** of up to £7000 is available
In real terms the funding support
  • **frees up time** to spend with a company
  • Offers freedom **to do something “interesting”** that would be difficult to fund from other sources

**My previous experience of the Mentored Challenge in 2013**
  • Worked with a furniture manufacturing company
  • Opened a conversation over an extended period
  • and now we are developing a 2 year KTP proposal around that initial work
The Partnership Challenge

I applied for funding for the 2014 Mentored Challenge

**The Company** - Halo Thermal Imaging, Darlington (K2)

**Funding** - £4000 awarded

**Duration** - March – Sept 2014
  our first discussions had been 12 months earlier

**Supported** - 60 hours academic time
  - Student factory visit
  - Materials for prototyping
  - Company time
• Halo are a Darlington based manufacturer.
• They develop and manufacture highly specialist Thermal Imaging Solutions, selling their products internationally for,
• fire fighting, search and rescue and surveillance operations.
• K2 helmets are also used by F1 teams, NASA and on cruise ships.

http://www.halothermalimaging.co.uk/
Thermal Imaging has a multitude of uses...

- **Rescue**
- **Medical**
- **Equine/veterinary**
- **Fire Fighting**
- **Security/Military**
- **Electrical**
- **Automotive**
...and is an essential tool for fire fighters
• Halo TI were previously trading K2/Solo
• Their products were selling well but...
• The SoloTI and Solo helmets had not been refreshed cosmetically for a considerable length of time...

**Solotic**

• We started to focus our conversation on how they saw the business going forward
• Including product /market diversification
• They were concerned that competitor products, whilst having less functionality did look more “cool”
The Partnership Challenge

Student Centred Input (live projects)
Visualisations and outlines for new/improved products
Research and outline strategies for product implementation including basic business models

Academic Input
Feasibility assessment with K2 of student concepts and Road mapping strategy for NPD and/or product updating

The company wanted to extend the work into Summer Student Placement - 2014
Traditional Design Placement

- Student at the heart of the business
- Supported within an “equipped” design department
- Mentored by practising designers
- Able to learn about a specific business and manufacturing sector
- Exposed to issues in the wider business and its marketing environment
The Problem:
The company (Halo) is an SME and highly specialised manufacturer.

As such they could not provide a “traditional” design placement...

- No existing “in house” designers
- No specialist facilities or equipment to support design activity
- No expertise to drive the process

So if we were going to offer a placement, we needed to find a new way
A New Type of Placement?

Business
(has a specific "contained" problem)

The Project

Student
(needs experience)

University
(multiple agendas)

The Business Environment

"Focus"
"Enabler"

Creativity
Market

Expertise
Strategy

"Insight"
Case Study: Student Placement

Brief: Cosmetic update of the Solo Fire Helmet
Case Study: Student Placement

- 4 students invited to apply
- Mārtiņš Ėlerts secured the 5 wk placement (extended to 12 wks)

The project involved,
- Concept Sketch Development
- CAD Visualisation
- Concept “Soft” Models
Case Study: Student Placement

Mārtiņš worked at the university
Supported at Teesside by
• **Peter Reid**, design mentoring, NPD strategy & project management
• **Mark Beckwith**, CAD and Rapid Prototyping
• **Alistair Scott**, model making

Regular (weekly) meetings at the company with the Directors
Initial Sketches
Presentation Sketches
Presentation Sketches
Presentation Sketches
Presentation Sketches
Clay Sculpting
CAD Development
CAD Visualisations

Design Strategy:
- **Reduce** unit production cost
- **Increase** unit value and price
- **Improve** manufacturing ease

GRP “flash line” expensive to remove

Silicon over-moulding
CAD Visualisations

Design Strategy:
- Cost effective “tailored” product variants
- Recognises variations in International Markets
- Functional improvements
- Potential for price premiums and added value
CAD – Refining the Form
Rapid Prototyping - Styrene
Product Review Meetings:
- Acted as “touch points” for future design direction
- Refined thinking and identified detailing issues and possible solutions
CAD Visualisations
Rapid Prototyping - Urethane
Rapid Prototyping - Urethane
CAD – Final Visualisations
CAD – Final Visualisations
Prototyping – GRP Shell
From this...                       ...to this

...in 12 weeks
Shared Benefits

Students

- Live project benefitted 21 students
- Factory visit enhanced knowledge of business and manufacturing in the SME sector
- Direct contact and Feedback from industry directors at key project stages
- Two special student prizes awarded
- One paid summer placement for Yr 2 student Martins Elerts
  - Initially 5 weeks (extended to 12 weeks)
- Agreement from K2 Thermal Imaging to sponsor students to attend New Designers Exhibition, London (July 2015)
Shared Benefits

University

- Example of us supporting the regional economy and business community
- Demonstrates what we can do
- Offers press/PR opportunities

- Case Study
  - New teaching materials and anecdotes
  - Maintaining currency in the business world
  - Business networking

- Piloted an alternative model for Student Placements
  - How could we resource this?
  - Sources of funding to support and expand?

- Enhances our recruitment
  - Gives us a good story
Shared Benefits

Company

**Expected**
- Live project stimulated discussion on business development and how their technology might be applied to alternative uses and markets
- A new “face lifted” product concept

**Unexpected**
- We exceeded their expectations
- Product variants to expand markets
  - (Euro, Peak, Mohawk)
- We identified things that they had not considered
  - Business/market opportunities
  - Cost saving and value added
- New product near market readiness
A Three way win: Collaborative Design as a mechanism for successful Knowledge Transfer & Exchange, enhancing student employability and adding value to the student experience.
Shared Benefits

Where Next

– Currently running another live project with yr 2 students investigating new opportunities for Thermal Imaging

– Investigating options for future collaborative working
  • Considering funding and shared I.P. models for this

– Future sponsorship discussions

– Future placement discussions
Any Questions?

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