KTP and Knowledge Exchange

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My areas of expertise…

- **Databases/Big Data/Data Science/Pedagogy**
  - e.g. NoSQL, Relational Databases, Data Warehousing, Big Data applications, Cloud Database systems, data streams, temporal databases, OLAP/SQL/NoSQL Data Analytics, etc.

- **Experience in managing KTPs in areas both in and outside my area of expertise**
  - Successful track record of previous KTPs with outstanding rating
  - KBS/lead academic for 7 KTPs/TCS and 2 CIPs worth approx. £1.5m income to the university
  - Currently lead academic for KTP with TDR Training Ltd

- **Contact details:**
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  - [https://www.linkedin.com/in/david-nelson-b520b711/](https://www.linkedin.com/in/david-nelson-b520b711/)
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KTP contacts

  john.clayton@iuk.ktn-uk.org

- **Amanda Li**, KTP Officer at the University of Sunderland, amanda.li@sunderland.ac.uk
KTP in a Nutshell...

**Academic**
- Has knowledge and expertise to develop commercial solutions
- Cross disciplinary expertise – a team could span different departments

**Associate**
- Graduate recruited to deliver the project
- Transfer of new knowledge
- Implements solutions

**Company**
- Faces a challenge
- No off the shelf solution
- Requires external university expertise between 18 and 24-month duration
- Not achievable through employing additional staff

Access specialist resources and expertise

Solve an innovative strategic problem
Create transformational impact
What a KTP entails...

- Development and delivery of the project proposal and work plan
  - This will take longer than you expect
  - Make the project achievable within the time and important to manage expectations of the company
- Get a good academic team – expertise and fit with project requirements
- Associate recruitment is important
- Attend weekly supervision meetings with the company
- Continuous interaction with the company is important as it will reap so many benefits for you as well as lead to a successful KTP outcome
- Your role is to guide, not to do the project
- Work with the KTP team and your KTP champions and especially John 😊
• KTP adviser meets the team and discuss suitability
• Develop the full application on the KTP portal and submit it
• Create a work plan and business case

• Team meets on regular basis
• LMC review meeting to track progress every four months
• Associate meets KTP adviser for support and advise

• Final project report produced
• Any Intellectual Property identified will normally reside with the Company partner

• Identify company strategy & knowledge transfer need
• Identify the appropriate academics and introduce
• Complete Fact Find From
• Create first stage application

• Company and university work together to recruit KTP associate
• Shortlisting and selection agreed together
• Start at a mutually beneficial date

• Identify company strategy & knowledge transfer need
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• KTP Journey

Expression of Interest  Full Proposal  Associate Recruitment  Project Management  Final Project Completion

- Publicity
- Keep in touch
What Makes A Successful KTP?

<table>
<thead>
<tr>
<th>IMPACT</th>
<th>INNOVATION</th>
<th>CHALLENGE</th>
<th>COHESIVENESS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Credible Business case?</td>
<td>Creation of a new product, process or services?</td>
<td>Challenging to all parties, business, academic and associate?</td>
<td>Does it tell an inspiring and credible story?</td>
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<tr>
<td>ROI?</td>
<td>Significant improvement of existing ones?</td>
<td>Does it stretch the above team?</td>
<td>What specific knowledge is being transferred?</td>
</tr>
<tr>
<td>Competitive advantages?</td>
<td>Innovative to company, sector, industry?</td>
<td>Is it achievable via on average the 24-month KTP?</td>
<td>Embedding a new capability? How would we recognise that capability i.e., what are the tangible assets in the business?</td>
</tr>
<tr>
<td>New market Opportunities?</td>
<td></td>
<td></td>
<td>Transformational for the business model?</td>
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Benefits to academics and the university

- High acceptance rate
- Great steppingstone for academics
- Great opportunity to work with external businesses to feed into your teaching and research, guest speakers etc.
- New research projects initiated as a consequence of a new KTP
  - On average two papers published in refereed journals or presented conferences
  - Two other articles published, case studies produced, new teacher modules, student projects and placements, e.g., 9 student projects generated for Imprint
- Benefits REF impact and KEF ranking/income through e.g., REF case studies
- Research income, typically £180K per 2 years project
- Graduate Employability
- Half a day per week on the KTP team's workload (192 hours shared per year)
Examples of benefits to companies

- Embedding of new innovative technologies into your organisation
- Embedding of academic expertise into your organisation with an ongoing relationship
- Change in company culture
- Enhancing productivity in your teams
- Embedding/creation of IT and R&D teams
- An associate that will probably stay with you in the long term
- Student placements and projects
- Financial benefits
- Organisational cost approx. £35K per year
Examples of benefits to the associate

- Fast-track career development and potential to remain with the business post-KTP
- Competitive salary package
- Training and development (10% of time and a £2k pa budget)
- 2 residential training courses in management and all associates registered on KTP Diploma in Management Programme
- Opportunity to register for Higher Degree during the project
- 70% of Associates are offered employment by the host business
New two-year KTP started April 2024

To create and embed an immersive training capacity by creating the methodologies, knowledge and tools for Extended Reality (XR) enhanced blended learning.

Main area of focus:
- Digital training platform development that is suitable for STEM Apprenticeship education
- Investigation of leading-edge AR/VR and digital training technologies for TDR’s apprenticeship electrical module learning programme
- Adaptation of pedagogical design and product design to meet the training and educational needs of apprentices
Platform Agnostic Intranet Software Development Environment

‘To develop a platform agnostic business intelligence software development suite to take advantage of a strategic business opportunity in productising previously bespoke software customisations.’

- Rationalised company’s SW development and management processes – move from providing business mobile phone contracts towards S/w development and providing SaaS
- Technical knowledge and understanding of the market has been significantly improved within the business
- SaaS/Cloud based software deployment
- 25% growth based on the KTP outcomes
- International expansion via a global reach
- Unforeseen benefit to Embed Agile/Prince 2 project management into organisation
- Change in company culture – weekly brainstorming events to look at future marketing opportunities
- Two new job roles post-KTP – associate kept on as R&D Manager for the company
- In-house training provision
- Commercialised product created on the platform and sold
- Awarded ‘outstanding’. Submitted for Best KTP award. Case study on Innovate UK website
Orchid Software

- **Orchidnet - Cloud Based Software Development Environment**
  - Development of an industry-leading intranet technology using best practice design and development techniques, resulting in increased product sales and market share for Orchid Software.
  - ‘A state of the art and market leading platform has been built onto which we will continue to evolve the future of the Orchidnet product. Adoption of an innovative cloud-based software as a service (SaaS) model allows for scalability and export sales.’
  - ‘Our improved culture, which breeds and rewards innovation has helped the wider team become engaged in the project; we now have a motivated, efficient and highly agile development team.’

- Rated Outstanding – submitted for Best KTP award

- Permanent Software Engineer post created for the associate:
  - web development with Asp.Net MVC and Html5/Javascript/CSS
  - web service programming using Asp.Net Web API
  - implementing and maintaining our unit test suite
  - large-scale application development
  - work within a small agile team to deliver projects integrated with our overall enterprise product, working regularly with designers and QA.
Development of an IT Infrastructure – bespoke MIS and process scheduling system

- Automation of web-to-print process (ordering, process scheduling, etc.)
- **Effecting people and change management** in company operations
- No previous IT strategy, legacy systems (predominately paper)
- **New IT team embedded** in organisation
- Associate went on to become Senior IT Systems Developer in the organisation
- **Culture change in organisation** to be more accepting of IT driven changes
- **Year-on-year company growth of 30%, revenue gains of £2m** through increased efficiency and client wins
- **Staffing increase from 40-70 staff**
- Awarded Outstanding
- 2nd KTP on wearable technologies with engineering school

**Uni partnership which saw print firm create £2 million new business rated 'outstanding'**
Encore Washington

- Novel Data Streaming/Data Capture Architecture and Development of Mobile Data Analytic Tools for the Shop Floor Environment
  - To develop and implement an interface between a wide range of machine mounted, live data capture systems and the company’s Information Management System and provide real time performance information from the data using data-mining and intelligent computing techniques to bring about increases in manufacturing efficiency.
    - Agile/test driven development embedded into organisation
    - New technologies used to produce lightweight front ends (touch screen interface) on the shop floor
    - Data Analytics - Mobile interface to monitor factory from mobile devices
    - New commercial product (beyond KTP) – the dynamic monitoring system – launched worldwide
    - Nine Msc projects
    - New company formed – One Point Data Streams to commercialise the product – 10 jobs created
    - Associate given R&D role within the partner company
    - Rated ‘Very good’. Nominated for Best KTP Partnerships award
Others

- **Profile Analysis**
  - Two mini (6 month) KTPs
  - Development of Data and Business Information Analysis Toolsets

- **Steptronik UK Ltd**
  - Development of a MIS for a Nissan Supply Chain company
Some quotes from the companies....

✓ Very good project for the business! Ximena is now part of the Cellular team. **Sales and revenue have been increased every month** due to the KTP outcome as well as customer satisfaction. Great range of customers from a variety of sectors. **A win-win partnership for businesses! A no-brainer really!** (Cellular)

✓ **KTP it’s the one for me!** Delivering proven results to our company, shaping careers, retaining jobs and adding value to our customer proposition. **The KTP has given us a new lease of life and pointed us in a direction that we only dreamed of.** Our sales team have new tools to attack the market, our production staff are achieving more with less stress and our shareholders are smiling at every board meeting. I have no hesitation in recommending the KTP as a great way to alter your business as it has made such a difference to ours. (Imprint)
The real standout achievement came in the development of a new 'Open Innovation' culture within the business, creating a shift in company behaviour towards idea generation, staff empowerment and participation across the entire business, bringing previously disparate staff and departments together towards a shared objective. The KTP catalysed and stimulated this shift in culture and the absorption of new knowledge and working practices into the company. (Orchid)

Since Kris joined us ... he’s been fantastic, bringing with him new technologies which have helped transform the way we work. The infrastructure to support IT development with the help of Kris and Tommy has now been in place for two years and we have developed a number of applications that have been successfully introduced to clients such as online ordering, job tracking, variable data printing and digital asset management libraries. (Imprint)
Thank you...