

<b>Institution:</b> University of the West of Scotland (UWS)		
<b>Unit of Assessment:</b> 17: Business and Management		
<b>Title of case study:</b> Delivering GVA and business growth through inter-organisational knowledge exchange		
<b>Period when the underpinning research was undertaken:</b> 2003 - 2020		
<b>Details of staff conducting the underpinning research from the submitting unit:</b>		
<b>Name(s):</b>	<b>Role(s) (e.g. job title):</b>	<b>Period(s) employed by submitting HEI:</b>
Mr James B Johnston	Lecturer	1984 - 2020
Prof John Struthers	Professor	1978 - 2020
Dr Alan Murray	Lecturer	2013 - 2020
Dr Veronica Scuotto	Lecturer	2014 - 2018
Mrs Joan Scott	Lecturer	2005 - 2020
<b>Period when the claimed impact occurred:</b> 2013 - 2020		
<b>Is this case study continued from a case study submitted in 2014?</b> No		
<p><b>1. Summary of the impact</b></p> <p>Research at UWS has shaped the profile of innovation and knowledge exchange activities with businesses in the UK and internationally. Specifically, the UWS research on workplace innovation and learning has led to the UK's fastest growing portfolio of Knowledge Transfer Partnerships (KTP) – from 5 to 35 in two years (increasing ROI from approximately GBP6,000,000 to GBP45,000,000). The portfolio now also includes Scotland's first international Management KTP. Other impacts include establishing British Academy of Management (BAM) Continental Network to build on our workplace innovation successes, a sector-defining Growth 500 programme for over 200 Engineering companies in Scotland as part of the Centre for Engineering education and Development and a model "Innovation Base" between Zhejiang Provincial Science and Technology Cooperation Centre (ZSTCC) and UWS as well as directly increased profitability and/or job creation of international businesses.</p>		
<p><b>2. Underpinning research</b></p> <p><b>Context:</b> Innovation and knowledge exchange are at the heart of economic resilience of enterprising businesses (e.g. UK government's GBP1,250,000,000 fund to support high-growth, innovative companies, and firms focusing on research and development (R&amp;D) in 2020/21 as well as GBP25,000,000 investment into Knowledge Transfer Partnerships (KTP) in 2019). While knowledge exchange is well embedded in the UK Higher Education Institutions (HEI), UWS has conducted research to maximise our socio-economic impact through knowledge exchange. For more than 20 years, we have been committed to researching the role of innovation within small &amp; medium size enterprises, forming the basis for the current combined portfolio of 35 partnerships through which we have collaboratively engaged in real world R&amp;D taking full advantage of the KTP mechanism.</p> <p><b>Key Findings:</b> Early stages, from mid-1990 onwards, saw the team pilot successful entrepreneurial translations of research through Knowledge Transfer Partnerships [5.1]. These have led to the business-related researchers (<b>Struthers, Johnston</b>) within the School of Business and Creative Industries (BCI) recognising the need to investigate how to most effectively provide support to and within the business environment through research on benefits of learning and innovation in the workplace. Struthers [3.1] led this original underpinning research as part of the <b>EU-funded Adapt-Ufl project</b>, conducting an analysis of training needs for more than 200 employees across 38 companies. Partnership approach along with the different expectations of employers and employees were found to be critical for innovation through work-based learning (i.e. "learning <i>for</i> work", learning <i>at</i> work and learning <i>through</i> work). The early investigations resulted in positioning knowledge transfer at the heart of institutional delivery of economic impact, developing more than 13 KTP projects from 2000 to 2014 (which was in the top 50 in the UK). During this time, <b>Johnston [3.2]</b> was the first to draw analogy between General Practice Medicine (GPM) doctors' relationships with patients on one hand and relationships within KTPs [3.A, 3.B, 3.D] on the other (i.e. the art of 'impact'). The early research directly contributed to the later work on phronetic knowledge exchange and subsequent Johnston's influence on international</p>		

expansion of **The British Academy of Management (BAM)** and his appointment as BAM **Treasurer** and **Vice Chair** in 2010.

These projects provided solid underpinning research to maximise inter-organisational knowledge exchange between UWS and industry partners and consequently their innovativeness (GVA GBP17,000,000 from 2000 to 2014), identifying further developmental potentials. The research (**Scuotto, Murray**) has thus branched out in a non-linear way to studying information and communication technologies' role in improving inter- and intra-organisational innovation processes [3.3] as well as the role of entrepreneurial knowledge and innovative attitude to develop better relationships with businesses [3.4]. Both these areas include **case studies (UK and Italy)**, revealing that risk management, asymmetric information in the knowledge management process, and hold-up problems which occur in the innovation process are key '*imperfections*' that through an open innovation model can enhance challengeable attitudes. Entrepreneurs hence develop innovations through establishing both formal and informal collaborative partnerships, further validating KTP-based inter-organisational impact development approach [3.4]. Most recently, **Scott** [3.6] analysed support for knowledge exchange in the rural context, paving the way to the first ever international KTP project [3.C] between UWS (UK) and **Farmtrack** and **Mount Kenya University (both Kenya)**.

### 3. References to the research

**3.1** Boyd, E., Knox, H., & **Struthers**, J. (2003), Work-based learning, theory and practice: a case study of Scottish SMEs. *Industry and Higher Education*, 17(3): 163-178. <https://doi.org/10.5367/000000003101296828>

**3.2 Johnston**, J. B. (2014). The potential art of 'impact' in knowledge exchange: a review of what can be learnt from the work of Elliot-Binns and Neighbour. In *British Academy of Management Annual Conference 2014: The Role of the Business School in Supporting Economic and Social Development*. (Output available on request)

**3.3 Scuotto**, V., Santoro, G., Bresciani, S., & Del Giudice, M. (2017), Shifting intra-and inter-organizational innovation processes towards digital business: an empirical analysis of SMEs. *Creativity and Innovation Management*, 26(3): 247-255. <https://doi.org/10.1111/caim.12221>

**3.4 Usai**, A., **Scuotto**, V., **Murray**, A., Fiano, F., & Dezi, L. (2018), Do entrepreneurial knowledge and innovative attitude overcome "imperfections" in the innovation process? Insights from SMEs in the UK and Italy. *Journal of Knowledge Management*, 22(8): 1637-1654. <https://doi.org/10.1108/JKM-01-2018-0035>

**3.5 Hill**, A., **Scott**, J., Moyes, D., & Smith, R. (2016), Supporting knowledge exchange in rural business - A case story from Dumfries and Galloway, Scotland. *Local Economy*, 31(7): 812-824. <https://doi.org/10.1177/0269094216669110>

**3.6 Tait**, A., **Johnston**, J. B., Borodzicz, E., & **Reuther**, K. (2017), The relevance of phronetic knowledge exchange in theory and practice: some reflections on how to incorporate practical wisdom into the exchange of knowledge. In *British Academy of Management Conference 2017*. British Academy of Management. (Output available on request)

Grants:

**3.A Johnston**, J. B., *To enable a social enterprise to capture the existing knowledge and experience of staff and make this accessible across the organisation there by improving overall organisational effectiveness*, Innovate UK: KTP with Kibble Education and Care Centre, September 2007 to January 2010, GBP52,223

**3.B Johnston, J. B.,** *To undertake a market led strategic business change programme leading to the development and implementation of a new business and customer centric culture*, Innovate UK: KTP with Braehead Foods Limited, February 2010 to November 2011, GBP82,712

**3.C Struthers, J.,** Alcaraz Calero, J., Nziku, D., Adewole, A., Quinn, B., *Cost-Effective Aquaponic Solutions for Developing Farmers in Rwanda*, Department for International Development (DFID)/Innovate UK, 2019 to 2021, GBP280,626.00

**3.D Conlan, E., Johnston, J. B.,** *To undertake a market led strategic business change programme leading to the development and implementation of a new business and customer centric culture.*, Innovate UK: KTP with Thomas Johnstone Limited, July 2006 to August 2008, GBP71,729

#### 4. Details of the impact

The UK economy has benefitted from approximately GBP7,000,000 in direct business-UWS knowledge exchange interactions since the last REF period with approximately GBP45,000,000 impact on its GVA and approximately GBP13,000,000 investment. The research team is leading the **UK's largest management KTP (mKTP) portfolio** and the trajectory of innovative research on inter-organisational workplace innovation as the basis of knowledge exchange has been pivotal to the highly successful KTP model. It is now positioning UWS as the **best performing Higher Education Institution in Scotland** and among the **top three in the UK**.

**From Research to Impact Process:** Successful businesses often develop innovation through partnership with academia through innovation projects and training, most palpably exemplified by the UK's KTP programme, which has been running for more than 45 years and is recognised as one of the world's most successful business support schemes. UWS research has recognised the benefits of the industry-academia workplace innovation through our own involvement in KTPs and case studies over several years, paving the way to the change in UWS's institutional support for knowledge exchange. The research findings have led to 2 major areas of impact: (1) Delivering significant increase in the Gross Value Added (GVA) and growth for knowledge transfer partners through award-winning technical innovations; (2) Co-creating and influencing knowledge exchange policy and practice in Europe and Zhejiang province in China. The group's research has therefore created a knowledge exchange model that is now directly utilised by 35 UK and international companies and informed policy and practice internationally.

**(1) GVA and economic growth nationally and internationally:** The growth directly resulted from the research that investigated the role of inter-organisational workplace innovation and learning. It has led to significant increase in UWS engagement in knowledge exchange activities, commercialisation and paved the way to the current sector-leading position in mKTPs in the UK. Biggar economics [5.2] reports an increase from **GVA GBP537,800,000** in 2013/14 to more than **GBP800,000,000 annually** over the last two years. Considering the increase from **5 KTP** projects in 2013/14 to **35 KTP** projects by the end of 2020 [5.1] and InnovateUK analysis that shows approximately GBP7.5 of net additional GVA is generated for every GBP1.00 of KTP grant funding, UWS research teams have led KTPs contributing more than **GVA GBP45,000,000**. In addition to this direct impact, to date Interface [5.3] have tracked the impacts from UWS knowledge exchange activities to include **65 New or Improved Products, Processes or Services** and in the past 18 months (August 2019 to 31 December 2020), Interface also reports almost **GBP13,000,000m investment** raised by **4 companies (Phoenix Instinct Ltd (GBP750,000), Novosound Ltd (GBP3,000,000), Aqualife Services Ltd (GBP250,000) and Current Health/Snap40 Ltd (GBP9,000,000) )** that have partnered with UWS.

We are currently the only post-1992 university among the **top 3 most KTP-intensive Universities** in the UK (in value and in number), demonstrating the significance and reach of the research on the inter-organisational relationships within industry-academia partnerships. The completed projects include **Phoenix Instinct Ltd. [5.8], winners of USD1,000,000m in the global Toyota Mobility Unlimited Challenge** and **ISO Organisation Ltd**, awarded the highest grade of "A – Outstanding" by InnovateUK. The innovative industry-academia engagement

developed by UWS researchers has been further exemplified by developing Scotland's first international KTP with **Farmtrack** and **Mount Kenya University**.

The engineering sector in Scotland through the **Centre for Engineering Education and Development (CEED)**, originally co-founded by UWS in 2010, has economically benefitted from a knowledge exchange programme developed by UWS called Growth 500 [5.6]. It has provided from its inception in 2010 to 2020 short courses of business education for over 1,000 industry beneficiaries who learn about 14 core business disciplines. This has helped to increase the value of this sector to the Scottish economy from **GBP620,000,000 to GBP1,200,000,000** during this period [5.7].

**(2) International knowledge exchange policy and practice:** We have influenced BAM strategy and BAM Continental Network (the first BAM international expansion ever) has been established in 2018 as a direct result of **Johnston's** work within **BAM** [5.4], the outstanding KTP portfolio and UWS research on inter-organisational relationships within knowledge exchange activities. **Dr Kevin Reuther (UWS PhD Graduate)** has been appointed its **inaugural Executive Director** and Johnston its first Treasurer. The Network has been established to utilise UWS knowledge exchange expertise and act as an international policy and R&D vehicle for industry-academia collaboration with a purpose to facilitate international exchange of knowledge, ideas and approaches/methods. Among other industry organisations, the Network quickly expanded and its Board currently includes Interdisciplinary Body for Digital Transformation of the Association of German Engineers (VDI), **Kühne & Nagel**, **Münchner Kreis** and so on.

UWS's significant and rapidly growing KTP portfolio has also been pivotal in establishing Scotland's first **Overseas Training and Collaborative Organisation (OTCO)** in 2018, following a lengthy review process by China's State Administration, which began in 2016 with a monitored pilot course developed by UWS on behalf of the **Chinese government's State Administration of Foreign Experts Affairs (SAFEA)** the same year and a subsequent series of 23 training programmes led by UWS in 2019 [5.5]. For the application, we received recommendations from the Chinese Consulate-General and the Education Department of the Chinese Embassy in London. This led to UWS becoming the first organisation in Scotland to be accredited to provide technical and managerial training to organisations in China, demonstrating the University's ambition to be a global university of choice for industry-academia partnerships. In 2019, UWS had developed the **UK's fastest growing training portfolio** for senior executives that attracted more than 500 delegates from across 16 provinces in China (including Ministry of Housing and Urban-Rural Development, Finance Department of General Administration of Customs, 4 Universities, 11 provincial departments and 4 municipal departments). UWS has among the **greatest-ever annual increases** by any higher education SAFEA provider, being shortlisted for the China-Britain Business Council (CBBC) **China-Scotland Business Awards** in the Education Partnership of the year category [5.6]. As a result of our SAFEA success in 2019, **Zhejiang Provincial Science and Technology Cooperation Centre (ZSTCC)** approached UWS in 2020 to establish the first of its kind **Zhejiang-UWS Innovation Base** as a model bilateral knowledge exchange platform [5.5]. It is based on the UWS knowledge exchange model and includes policy development in Zhejiang province, joint talent development and international knowledge transfer projects.

## 5. Sources to corroborate the impact

**5.1** Innovate UK KTP Database for the University of the West of Scotland:

[https://info.ktponline.org.uk/action/search/complete\\_res.aspx?srchtype=simple&tech=-1&sic=-1&kbp=2845&loc=XX](https://info.ktponline.org.uk/action/search/complete_res.aspx?srchtype=simple&tech=-1&sic=-1&kbp=2845&loc=XX)

**5.2** BiGGAR Economics report on socio-economic impact of UWS, 2019

**5.3** Interface report indicating the investment levels in UWS partner companies

**5.4** Evidence of UWS impact on the BAM Continental Network <https://www.bam.ac.uk/bam-community/continental-network.html>



**5.5 University of the West of Scotland and China:**

- a) [China's 1st official training partner in Scotland \(uws.ac.uk\)](http://uws.ac.uk)
- b) China Britain Business Council Finalist awards including UWS:  
<http://www.cbcc.org/events/other-events/china-scotland-business-awards-2021/shortlisted-candidates/>;
- c) Zhejiang-UWS Innovation base article in Chinese
- d) UWS OTCO Website portfolio

**5.6 Evidence from the Centre for Engineering Education and Development(CeeD):**

- a) Evidence of the training programmes developed by UWS for CeeD:  
<https://ceed-scotland.com/workshops/growth500>
- b) Testimonial from CeeD of the UWS contribution to their Growth500 programme

**5.7 The Impacts of KTP Associates and Knowledge Base on the UK Economy:**

[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/467142/KTP\\_Report\\_July\\_2015\\_Exec\\_summary\\_1-SEP-15\\_.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/467142/KTP_Report_July_2015_Exec_summary_1-SEP-15_.pdf)

**5.8 Testimonial from Phoenix Instinct Ltd on the contribution of UWS to their strategic Knowledge Exchange project****5.9 Thomas Johnstone Ltd and UWS KTP- Market Led Strategic Change:**

<https://www.youtube.com/watch?v=uZyfU1Aewc4>