

Institution: University of Bath
Unit of Assessment: 19: Business and Management Studies
Title of case study: A Strategic Approach to Public Procurement
<p>1. Summary of the impact</p> <p>University of Bath research has helped the National Health Service (NHS) successfully to make fundamental changes in its procurement policy, with 2.7 per cent savings on £18 billion of expenditure. The changes incorporated plurality of provision and strategic, collaborative approaches to deliver better value-for-money decisions and improve quality of life for patients. Using this framework, Audiology Services have been able to provide digital hearing aids to patients free of charge, at the same time saving £252 million on the purchasing price of the aids and cutting service costs by £45.5m annually. This approach was also applied across all NHS expenditure categories and achieved savings of around £500m on goods and services worth £18 billion a year. The research has also shaped the Department of Health's Commercial Strategy encouraging a more strategic use of network resources for the benefit of patients and taxpayers.</p>
<p>2. Underpinning research</p> <p>The University of Bath Centre for Research in Strategic Purchasing and Supply (CRiSPS, Research Centre 1994 – 2011, Research Group 2011 – 2013, Research Centre 2013 - date) is a leading focus for applied research in supply strategy. The Centre is recognised for its ability to apply academic rigour to solve practical issues and influence policy. Its work with public sector organisations and professional bodies earned CRiSPS recognition as the leading authority on public procurement in the UK. The Centre co-founded, and participates in, the International Research Study of Public Procurement (IRSP). IRSP is a multi-national research study of public procurement practices and policies (involving 45 countries) that informs the development of international comparative procurement benchmarks and enhances knowledge in government procurement (reference 3 and http://www.irspp.com).</p> <p>The CRiSPS portfolio of NHS research work, supported by £2.3 million in research funding (see section 3), has enabled the recruitment and development of career researchers at the University of Bath who have made a strong academic contribution as well as adding value in complex public procurement settings. The team's work in the NHS was informed by prior research focused on a strategic approach to private sector inter-organisation networks, particularly in the automotive, electronics and aerospace industries (references 1 and 2). The research team was led by Professor Christine Harland (at Bath since 1995) and included Dr Louise Knight (Research Fellow, then Senior Research Fellow 1996 – 2007), Dr Nigel Caldwell (Research Officer, then Research Fellow 1998 – 2012) and Dr Wendy Philips (Research Officer, then Research Fellow 2001 – 2009). The team recognised that there was little understanding of how effectively to leverage network resources in highly regulated, complex public sector systems. Therefore, their engagement with the NHS involved creating a 'system of innovation' that: brought a network of key players together; offered facilitation of the process; and helped the NHS to produce a new strategy relating to best value-for-money procurement decisions. The research has generated cost and customer benefits from strategic changes to procurement processes and approaches (reference 6).</p> <p>The team's NHS research focused on the formulation and implementation of public procurement strategy in complex inter-organisational networks spanning suppliers, manufacturers of medical technologies, NHS procurers of technologies, clinical teams, patient representative groups and stakeholders such as the Royal Colleges and Universities. The research generated conceptual frameworks that informed approaches to public procurement strategy (references 4 and 5). This has included: the use of public procurement as a healthcare policy lever; roles in developing strategic approaches to complex networks; innovation within networks; network learning; the role of public procurement in economic recovery; and the engagement of small and medium enterprises (SMEs) in public procurement. Theoretical innovations from the research have supported the</p>

creation of action plans to apply these theories to strategic NHS supply groups such as Audiology Services and Prosthetics. Audiology Services is presented here as a specific example of the benefits of the research for the NHS.

The research in audiology services on the procurement of digital hearing aids (reference 4) challenged the NHS to consider the roles of different actors, other than procurement agencies, both in driving the take up of new technologies and in adopting affordable technologies. This involved a shift of focus from the 'demand-pull of procurement agencies' (reference 4) towards the systems that surround them and the involvement of a full range of actors who were able to influence both the exchange of knowledge and information that underpinned technological development (reference 6). Using a strategic approach derived from their conceptual framework, CRiSPS researchers guided network players in Audiology Services to examine existing policy and practice, to develop alternative policies and practices and to implement strategic choice and change to procurement practice.

3. References to the research

1. Harland, C.M. (1996) Supply network strategies: The case of health supplies. *European Journal of Purchasing and Supply Management*, 2(4): 183-192. ([http://dx.doi.org/10.1016/S0969-7012\(96\)00014-7](http://dx.doi.org/10.1016/S0969-7012(96)00014-7))
2. Harland, C.M. (1996) Supply chain management: Relationships, chains and networks. *British Journal of Management*, S63-S81. (<http://dx.doi.org/10.1111/bjom.1996.7.issue-s1>)
3. Knight, L.A., Harland, C.M., Telgen, J., Callender, G., Thai, K.V. and McKen, K.E. (Eds). (2007) *Public Procurement: International Cases and Commentary*, Routledge: London ISBN 978-0-415-39405-5. (<http://www.routledge.com/books/details/9780415394055/>)
4. Phillips, W.E., Knight, L.A. Caldwell, N.D. and Warrington, J. (2007) Policy through procurement: The introduction of Digital Signal Process (DSP) hearing aids into the English NHS. *Health Policy*, 80(1): 77-85. (<http://dx.doi.org/10.1016/j.healthpol.2006.03.008>)
5. Harland, C.M. and Knight, L.A. (2001) Supply network strategy: Role and competence requirements. *International Journal of Production and Operations Management*, 21, 4, 476-490. (<http://dx.doi.org/10.1108/01443570110381381>)
6. Walker, H., Schotanus, F., Bakker, E. and Harland, C. (2013) Collaborative procurement: A relational view of buyer-buyer relationships. *Public Administration Review*, early cite DOI: 10.1111/puar.12048. (<http://dx.doi.org/10.1111/puar.12048>)

Indicative Research Grants in CRiSPS (since 1996):

Funding Source	Value	Period	Field	PI	PGR/ ROs
NHS Purchasing and Supply Agency	1,760,000	2001-2010	Supply strategy for the NHS	Harland	4 + PhD and MBA students
NHS Supplies	524,844	1996-2000	Supply strategy formulation and implementation	Harland	2.5
Chartered Institute of Purchasing and Supply	193,333	2004-2010	Research developing the profession of purchasing and supply	Harland	1
EPSRC	396,390	2004-2006	Innovation in supply networks in healthcare	Harland	4
EPSRC	32,120	2004-2006	Strategic case for e-enabled business in	Harland	2

healthcare sector

4. Details of the impact

University of Bath research in the area of strategic purchasing and supply has changed procurement processes, practices and policy within the NHS. The research has informed a move away from disconnected practices across procurement agencies, hospital procurement teams, clinicians and hospital administrators, to practices based on collaboration in inter-organization networks of multiple stakeholders. The research has challenged conventional wisdom on procurement and supply in the NHS and, over time, has had significant effects on the efficiency and cost-effectiveness of services to the public.

The Executive Director of the Health Care Supply Association has said that the “joint applied research on formulating and implementing supply strategies across all areas of NHS spend on goods and services yielded savings and improved approaches to managing supply markets” (source 1). More generally, the research has informed changes to the delivery of NHS services to the public and helped to influence government policy. The former Director of Procurement Policy in the Department of Health comments that “the research contributed to that change from a previously fragmented system to a more strategic, centralised approach” (source 2).

The reach and significance of this research can be demonstrated through evidence relating to: (1) the impact of the research in the example of NHS Audiology Services; (2) broader changes in the procurement of goods and services in the NHS across all other categories of spend; and (3) how the benefits emerging from these broader changes influenced government policy and practice. Reach and significance has evolved: from the application of new knowledge in strategic procurement, to broader changes in practice within the NHS as a whole, to influencing government policy and practice.

(1) *Audiology Services*: Representing 24% of the total disabled population, hearing impairment is the second most common disability in the UK, after mobility, affecting 8.7 million people, 55% of whom are over the age of 60. Prior to the public procurement strategy changes prompted by this research, up to 450,000 NHS patients used to be prescribed highly visible, behind-the-ear analogue hearing aids, first patented in the 1930s, even though digital devices patented in the mid-1980s were widely used elsewhere. Because analogue aids amplify all sound, produce feedback and provide little control besides volume, up to 25% of analogue users do not wear them, even though they receive the benefit of a free service. On the other hand, digital hearing aids can be customised to suit the user and selectively adjusted for environmental noise. This dramatically increases the likelihood that individuals will use them.

Although the technology gap between the public and private sector was increasing, as was the benefits gap between the digital ‘haves’ and ‘have-nots’, the NHS could not afford to close this gap at existing market prices. Private-sector companies provided around 167,000 digital hearing aids each year to those who could afford £1750 - £2500 for supply and fit, resulting in wealthier patients benefitting from the technology, but at a price. Based on a previous investment of around £100 million for 450,000 analogue units per year, averaging £222 per patient per year, it was difficult to see how the NHS could afford the additional costs of going digital.

Working with the audiology team of the NHS Purchasing and Supply Agency (PASA), Bath researchers led the coming together of key stakeholders, including RNID, the Department of Health, the Medical Research Council and the Institute of Hearing Research, along with clinicians and patient groups and the various, disconnected purchasing points across the NHS system. Conceptual frameworks from research (references 1, 2 and 5) were used to inform and facilitate the process of helping the NHS PASA audiology team to develop new links and structures to implement a strategic, collaborative approach to procurement across this system. Using this approach, the NHS was able to negotiate a framework contract and supply over 260,000 digital hearing aids at a reduced cost of £60 per unit. As well as providing these free to patients and

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standardising on behind-the-ear digital models, the NHS succeeded in lowering the market price and saving £45.5 million annually in total service costs (source 3).

In recognition of this achievement, the NHS PASA Audiology team won the Team Award at the Government Opportunities Awards for Excellence in Public Procurement. The judges said that by working with RNID, the Audiology team had “developed an innovative supply strategy which can be used in other areas”. Reflecting on the research partnership with the University of Bath, the Senior Advisor to the All-Party Health Group (and former CEO of the NHS Purchasing and Supply Agency) has said that the strategic approach developed with Bath made it “possible to be highly influential in altering practice and delivering substantial patient benefits and measurable savings... In audiology these were evidenced as saving £252 million on the purchase price of hearing aids and £45.5 million annually on audiology service costs” (source 3).

(2) *Changes in Procurement in the NHS*: Working in partnership with CRiSPS, the NHS Purchasing and Supply Agency expanded on the success of Audiology Services to craft ‘Developing Supply Strategy’ as a means of rethinking the organisation’s procurement of goods and services, worth £18 billion annually. Teams of NHS buyers were educated through an MBA accredited module to utilise this approach to analyse their existing supply situation, develop scenarios offering better value-for-money provision, make strategic choices, implement changes and evidence benefits (source 1). Estimates are that up to £500 million in annual savings has been achieved across the NHS as a result (sources 4 and 5). This body of research and implementation has influenced other healthcare organisations that have been challenged to rethink their approach to procurement. Other services that have been transformed as a result of the research include: prosthetics, diagnostic medical equipment and orthopaedics.

(3) *Broader influences of the research*: Members of CRiSPS were part of the Healthcare Industries Task Force (HITF) organised by the Association of British Healthcare Industries and the Department of Health, to examine the difficulties of introducing new technologies into the UK. The final report of the task force, ‘Better Health Through Partnership’ concluded that, based on the experience in the NHS, partnership between government and the private sector improves the uptake of innovation. In support of these conclusions, University of Bath research has been influential in shaping methodologies designed to enable smaller businesses to engage more effectively with the NHS and to reduce the timescales needed to evaluate medical devices (source 5). Insights from University of Bath researchers about the value of innovation and leveraging network resources for positive benefits have informed changes in the Department of Health’s Commercial Strategy (source 1).

5. Sources to corroborate the impact

1. Testimonial letter from the Executive Director, Health Care Supply Association in support of benefits (savings and improvements) from the research.
2. Testimonial letter from the Former Director of Procurement Policy, the Department of Health and former Chief Operating Officer of the NHS Purchasing and Supply Agency in support of the significance of the research in terms of strategic change.
3. Testimonial letter from the current Senior Advisor to the All-Party Health Group and former Chief Executive Officer of the NHS Purchasing and Supply Agency in support of the savings in audiology and the wider influences on practice and patient benefits.
4. NHS Purchasing and Supply Agency annual Report 2007-8
5. NHS Purchasing and Supply Agency annual Report 2008-9