

Impact case study (REF3b)

<p>Institution: Robert Gordon University</p>
<p>Unit of Assessment: UoA36</p>
<p>Title of case study: Impact on information management, behaviour and communications in the energy sector</p>
<p>1. Summary of the impact (indicative maximum 100 words)</p> <p>Projects spanning two decades have examined information behaviour and its effects in a number of contexts, impacting on a wide range of settings such as the political sphere and business management. This case focuses on recent impact in the energy sector, including impact on: design and delivery of information management software; international health and safety in the oil and gas sector, skills and technological competency management practice, policies and standards; professional and organisational strategies for adaptation and enhancement of approaches to operating in multiple diverse geographic regions; and continuing personal and professional development for oil and gas practitioners, influencing methods, approaches and behaviours with regard to health, safety and competence.</p>
<p>2. Underpinning research (indicative maximum 500 words)</p> <p>The research team comprise: Professor Rita Marcella, Dean of Faculty, Aberdeen Business School (Various academic roles 1986 - 2001; Professor 2002 - 2003; Dean 2003 - present); Graeme Baxter, Research Assistant (1995 - 2007), Research Fellow (2007 - present), part-time Lecturer (2012 - present); Tracy Pirie, Research Assistant (2005 – 2012); and Hayley Rowlands, Research Assistant (2012 - present).</p> <p>For 17 years, members of the team have conducted timely research into information behaviour (IB) in various contexts. In a transformed Information Society, information access, provision and use can impact on an individual's or an organisation's capacity to succeed. This research stream has sought to bridge gaps in knowledge relating to IB in order to better understand the role of information, to aid understanding of its effective exploitation, and to enable the application of such knowledge. The team have published extensively in the field of IB, having applied their expertise to a wide range of occupational and everyday life contexts and groups. Strands in the series include research into IB in the following contexts: small business (e.g. Marcella et al., 1996; UR4, 2012); voters and citizens (e.g. Marcella & Baxter, 1997; Marcella & Baxter, 1999; UR1, 2003; UR5, 2013); parliaments (UR2, 2007); NGOs (UR3, 2010); and most recently in information provision and management of health, safety and competency systems in the oil and gas industry (UR6, 2013).</p> <p>The current research stream concerns IB in the energy sector, a domain which has until recently received little attention from the information science field, largely due to issues with access to research participants, the industry's lack of appreciation of the transferability of theoretical concepts and expertise, and a more widespread challenge in seeking to bridge the gap between academia and industry in collaborative research. The research team brought years of experience of IB research into this relatively unexplored context, successfully winning industry funding for projects focused on critical industry priorities such as safety and competency management which had a significant information management dimension. Three projects (RP1, 2010; RP3, 2011; RP4, 2012) funded by OPITO (the Offshore Petroleum Industry Training Organisation) examined the management of health, safety and competence throughout the safety chain, encompassing the associated systems, processes and behaviours. OPITO are the oil and gas industry's focal point for skills, learning and workforce development and have international reach with offices in Aberdeen, Dubai, Kuala Lumpur and Houston, and industry members from across the globe.</p> <p>As a result of the high visibility and impact of the OPITO funded research, in 2011, AVEVA, a world leading engineering software provider to the plant, power and marine industries, approached the team and commissioned research (RP2) into the "information gap" in health and safety information systems. AVEVA operate globally and 100% of the top 10 energy companies are AVEVA customers (PFC Energy 50 - the definitive ranking of the world's leading publicly traded energy</p>

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companies by market capitalization).

Following publication of their report for AVEVA, the research team published an article (**UR6**) which demonstrated the value of models of IB beyond the usual disciplinary boundaries in order to further understanding of the behaviour of oil and gas industry workers in the context of health, safety and emergency response. The methodological approach taken in the commissioned research was subsequently critically evaluated and further disseminated to an international academic audience at The European Conference on Research Methodology for Business and Management Studies, Portugal in July 2013.

The research projects described above and their associated outputs have spun off into other research activities, and the team continue to be commissioned by industry in order to apply information theory to industry problems. Examples include projects which focus on business resilience during economic downturn, leaders' opinions on the future of the global oil and gas industry, and the leadership qualities of Offshore Installation Managers. Most recently, a short paper was presented at the Information: Interaction and Impact (i³) conference held at Robert Gordon University in July 2013 which discussed the information needs and behaviour of Offshore Installation Managers. From this project both an academic paper and an industry report are currently being prepared for publication.

3. References to the research (indicative maximum of six references)

UR1 – Marcella, R., Baxter, G. and Moore, N. The effectiveness of parliamentary information services in the United Kingdom. *Government Information Quarterly*, 2003, 20 (1), pp. 29 - 46.

UR2 – Marcella, R., Baxter, G., Davies, S. and Toornstra, D. The information needs and information seeking behaviour of the users of the European Parliamentary Documentation Centre: a customer knowledge study. *Journal of Documentation*, 2007, October, 63 (6), pp. 920 - 934.

UR3 – Baxter, G., Marcella, R. and Illingworth, L. Organizational information behaviour in the public consultation process in Scotland. *Information Research*, 2010, 15 (4), paper 442. [Available at <http://informationr.net/ir/15-4/paper442.html>] (also REF2)

UR4 – Marcella, R. and Illingworth, L. The impact of information behaviour on small business failure. *Information Research*, 2012, 17 (3) paper 525. [Available at <http://InformationR.net/ir/17-3/paper525.html>] (also REF2)

UR5 - Baxter, G., Marcella, R., Chapman, D. and Fraser, A. Voters' information behaviour when using political actors' websites during the 2011 Scottish Parliament election campaign. *Aslib Proceedings*, 2013, 65 (5), pp.515 – 533.

UR6 - Marcella, R. Pirie, T. and Rowlands, H. The information seeking behaviour of oil and gas industry workers in the context of health, safety and emergency response: a discussion of the value of models of information behaviour, *Information Research*, 2013, 18 (3), paper 583. [Available at <http://informationr.net/ir/18-3/paper583.html>] (also REF2)

Research projects

RP1 - Marcella, R. and Pirie, T., 2010. Beyond the barricades: the quest for global health and emergency response training standards in the oil and gas industry. <http://uk.opito.com/uk/library/Beyond the Barricades OPITO FINAL 2.pdf>

RP2 - Marcella, R. and Pirie, T., 2011. The health and safety information gap. [Freely available, with registration at http://www.aveva.com/en/Promotions/RGU_survey_2011.aspx]

RP3 - Marcella, R., Pirie, T. and Doig, D., 2011. Tick safety not boxes: Competency and compliance in the oil and gas industry.

http://www.adc-virtualacademy.com/Opito_Tick_Safety_Not_Boxes_2011.pdf

RP4 - Marcella, R., Rowlands, H. and Pirie, T., 2012. The management of workforce safety and competency in the oil and gas industry (on file).

4. Details of the impact (indicative maximum 750 words)

As described in section 2, the research team has applied information theory to several contexts in order to further understanding of issues and develop solutions for industry, government, NGOs and beyond. They have therefore created multiple impacts in every strand of the research series (with a notable example being impact arising from the study of the Library of the European Parliament (**UR2**), where a series of published papers written by practitioners within the European Parliament Library (e.g. Car, 2008; De Feo & Finer, 2013) indicate that this research has had a significant impact upon the Library's marketing and service strategies). It is beyond the scope of this case study to describe the entire body of research and relevant impacts within the assessment period, therefore, recent examples from the newest strand of research concerning IB and information needs in the energy sector are outlined below. This focus on the energy sector as a case demonstrates the impact of the team's IB research most directly on industry practice, the establishment of standards and the improvement of management tools, and the shaping of government policy.

Research was presented at OPITO's International Conference in each year of report publication (**RP1**, 2010; **RP3**, 2011; **RP4**, 2012), where **Marcella** attended in 2010 and 2011 with the conferences attracting 177 and 233 registrations respectively. The research results were presented by OPITO Group Chief Executive David Doig in 2012 which attracted over 300 people. The delegates at each conference represented senior decision makers from training providers, oilfield services companies and oil and gas operators from over 23 countries, therefore providing wide dissemination of the research findings and contributing to continuing personal and professional development by influencing methods and behaviours of professionals with regards to the management of safety and competence.

The three commissioned reports supported OPITO's drive for common standards across the globe, and eventually led to the development of pan-industry approaches to measuring competency (**CE1**), with the research findings informing and influencing the standards and initiatives developed. OPITO have subsequently been called upon by both government and industry internationally to assist in the development of workforce competence strategies. The identification of best practice provided OPITO with not only valuable insight to assist in their work with industry and government globally (**CE2**), but also to assist the organisations they work with to adapt and enhance their approach to operating in multiple, diverse regions. The research reports generated news articles in multiple local and international publications and the work conducted surrounding competency management led to an invitation to conduct seminar presentations at Offshore Europe 2013 in Aberdeen for Draeger Safety UK, focusing on competency management practices, theories and challenges.

The AVEVA report (**RP2**) was launched at an event in RGU on 1st September 2011 with panel members from: AVEVA, Subsea 7, AMEC, KCA DEUTAG; and Oil & Gas UK discussing the implications of the findings for health and safety information management in the industry (**CE3**). Jeremy Cresswell, Editor of the *Press and Journal Energy Supplement*, chaired the session, and has published articles (**CE4**; **CE5**) on the research and its implications. In addition, the report received extensive trade press coverage, for example: *Cambridge Network*; *Digital Energy Journal*; *Finding Petroleum*; *OE Digital*; *Oil Information Technology Journal*; and *Ship and Offshore*. Furthermore, the research continues to be cited and discussed in relation to information solutions in subsequent AVEVA projects (**CE6**). The findings were also taken to Offshore Europe in 2011.

Collaboration between AVEVA and RGU allowed AVEVA to be seen as a 'thought leader' in the oil and gas industry, contributing to innovation, which is a considerable accolade from a company who

invest substantially in research and development. The research confirmed the criticality of safety related issues to their customers, and the wider industry, allowing AVEVA to prioritise the development of information management software capabilities to such issues. The research output also identified areas for subsequent follow up research by AVEVA which is currently underway (CE7).

The projects described have led to the research team being asked to provide advice to governments and companies on aspects of information management, communications and skills/competency management, both in the UK and internationally including invitations to present at a conference for HR directors on skill development and a seminar in Houston hosted by the Grampian Houston Association with a high level audience (CE10). Recently **Marcella** and **Rowlands** were invited by the International Centre for Oil and the Environment (established in 1978) to submit a book chapter on health, safety and competence management (CE8) for the latest edition of the 'Offshore Oil and Gas Operations, Environment, Health and Safety Management Handbook', the role and purpose of which is to provide the industry with a comprehensive distillation and synthesis of the operational context and the lessons learned in the last decade of operations. This new volume builds on the seminal work published by ICOE with Elsevier in 1992, 'North Sea Oil and the Environment: Developing Oil and Gas Resources, Environmental Impacts and Responses', aiming to bring together the most significant research thinking on oil and gas management. The publication is sponsored by industry and includes notable section editors such as William J. Cairns and Professor Alex G. Kemp OBE.

At a policy level, in 2011, Marcella was invited to be part of a Department for Business, Innovation and Skills (BIS) task force to advise Government on how business schools can better engage with mid-sized businesses to support their economic growth. In July 2013 Marcella was invited to be part of an Independent Expert Commission for the Scottish Government. The Commission was established to consider options for the implementation of the key principles set out in the Scottish Government's paper 'Maximising the return from Oil and Gas in an Independent Scotland', published in July 2013 (CE9).

5. Sources to corroborate the impact (indicative maximum of 10 references)

CE1 – OPITO Competency management assessment guidelines

CE2 - Evidence of reach from OPITO conferences and statement from Group Chief Executive of OPITO, detailing impact arising from the three reports and as a result of conferences

CE3 – AVEVA World magazine article

CE4 - Cresswell, J., August 1, 2011. Safety still not good enough. *Press and Journal*

CE5 - Cresswell, J., December 3, 2012. Corporate culture...the key driver of competence & safety. *Press and Journal*

CE6 - AVEVA, March 2013. Seeing through the fog: how laser scanning technology can bring clarity to asset management

CE7 - Statement from Vice President Marketing, AVEVA, outlining the impact of research

CE8 – International Centre for Oil and the Environment invitation to contribute and brochure for sponsors.

CE9 – Invitation to participate in the Expert Commission on Oil and Gas by the Scottish Government 2013

CE10 – Invitations from industry and industry bodies to present at seminars