

Capturing the contribution of subject librarians: Applying strategy maps and balanced scorecards to liaison work

Sheila Corrall

School of Information Sciences, University of Pittsburgh

Biographical details

Sheila Corrall is Professor and Chair of the Library & Information Science program at the University of Pittsburgh, where she teaches courses on research methods and academic libraries. Her research interests include the application of business management concepts to library and information services, collection development in the digital world, and the evolving roles and competencies of librarians and information specialists. Sheila moved to the USA from the University of Sheffield, where she was head of the iSchool for four years. She was previously director of library and information services at three universities in the UK.

Abstract

Purpose

The strategic contribution of subject librarians as information specialists in the digital world has been questioned by institutional administrators, but others have identified expanded roles and new opportunities in learning and research support. The present study investigates the application of Kaplan and Norton's strategic management system of balanced scorecards and strategy maps to subject librarianship in universities, with particular reference to the intellectual capital represented and created in the structures, relationships, and know-how of liaison work.

Design/methodology/approach

A literature review was used to define established and emergent roles, responsibilities and skillsets of subject librarians, including their reach beyond the library. A website survey investigated goals, actions, and values related to liaison work in UK library strategies. Data were analyzed thematically to develop an exemplar map and assess its potential for evaluating the contribution of subject librarians.

Findings

Core functions continue, with expanded scope and competencies. Collaboration and integrated services are key trends for mapping. Liaison work is poorly documented in existing strategies. Preliminary results suggest that strategy maps can be used to illustrate the strategic contribution of subject librarians.

Research limitations/implications

The paper reports the early stages of a multi-phase project. The results are limited to the conceptual phase. The next phase will explore the development of both maps and balanced scorecards via case studies in different countries.

Originality/value:

There are few examples of library applications of strategy maps and balanced scorecards at unit or program level, and none with a focus on the intangible assets of subject librarians.

Keywords

Academic libraries; Balanced scorecard; Intangible assets; Intellectual capital; Liaison librarians; Library Assessment; Performance measurement; Strategy Maps; Subject librarians; University libraries.

Introduction

Librarians in all sectors have become more intent on understanding and communicating the value of what they do, particularly as a result of the global economic downturn, and especially in the higher education sector, where notable work on methodologies, tools and techniques for demonstrating value and impact has been sponsored in the US and UK by organizations such as the Association of College & Research Libraries, Association of Research Libraries (ARL), Institute of Museum and Library Services, Research Information Network, Research Libraries UK (RLUK) and Sage Publications (Bowlby, 2011; Creaser and Spezi, 2012; Mays, Tenopir and Kaufman, 2010; Oakleaf, 2010; RLUK and RIN, 2011). Subject liaison librarians have traditionally formed a significant proportion of the professional staff in an academic library (Pinfield, 2001), thus representing a substantial financial commitment by the institution, and the expectations of the role within and beyond the library are being ramped up in response to challenges in the changing higher education environment. As Brown (2006, p. xiii) observes,

“They are increasingly seen in higher education institutions as powerful change agents, advocates for good practice, sources of wisdom and brokers of productive partnerships.”

Yet, the contribution of subject librarians in the digital world has been questioned by both institutional and library administrators, some of whom have removed the position from their organizational structures (Cotta-Schönberg, 2007; Heseltine, 1995; Jones-Evans, 2005; Manchester University Library, 2012); but others have acknowledged their central role in information literacy education (Bewick & Corral, 2010; Powis, 2012) and identified important strategic opportunities for academic liaisons in e-science, data curation and other areas of research support (Gabridge, 2009; Garritano & Carlson, 2009; Holland, 2006). Both RLUK and ARL have recently funded reports on the evolution and transformation of subject/liaison roles, with reference to new skillsets required and new service models of service delivery, such as blended and embedded librarianship and hybrid informationist positions (Auckland, 2012; Jaguszewski and Williams, 2013).

Kaplan and Norton's (1996a, 2001) strategic management system of balanced scorecards and strategy maps has been adopted by university libraries around the world, notably in Australia, Finland, Germany, Singapore, South Africa and the USA (Cribb, 2005; Kettunen, 2007; Leong, 2005; Lewis et al., 2013; Pienaar and Penzhorn, 2000; Poll, 2001). The balanced scorecard has also been promoted by ACRL and ARL (Oakleaf, 2010; Bowlby, 2011). Existing library case studies have concentrated on mapping goals and measuring performance for the library as a whole. Although no reported instances of applying strategy maps or balanced scorecards to subject librarianship or liaison work were found, there are a few examples of successful library applications of the balanced scorecard at unit and program levels, including a cataloging department (Kim, 2010), a health sciences library (Chew and Aspinall, 2011), and an open scholarship program (Hammes, 2010). Hammes's (2010) reflection on the process of developing a scorecard at program level reinforced the impetus for the present study:

“Creating a balanced scorecard for an entire organization can be a daunting task. Restricting it to one discrete programme was found to be manageable and hopefully will also prove to be sustainable.”

The purpose of the present study is to explore the feasibility and utility of using Kaplan and Norton's (1996, 2001) concepts and tools to characterize and evaluate the contribution of subject liaison librarians in higher education institutions. The development of the intellectual capital dimension of the balanced scorecard in particular (Kaplan and Norton, 2004b) has the potential to articulate the assets represented by subject librarians in new ways that highlight the significance of their organizational positioning, professional expertise, and stakeholder relationships. Insights gained and outputs produced from the study could be used as tools to support organizational development for libraries interested in developing or reviewing a liaison program, and also as learning resources for students of librarianship and professionals new to subject specialist liaison work, which might help to close gaps in coverage of liaison work identified in US postgraduate education programs (Attebury and Finnell, 2009).

The aim is to explore the application of strategy maps and balanced scorecards to subject liaison work, and their potential for disclosing intangible assets. The specific objectives are to:

- Produce theoretical examples of strategy maps and balanced scorecards as proof of concept and to inform and guide their development in practice settings.

- Develop strategy maps and balanced scorecards with practitioners in the field.
- Test the use of the resulting strategy maps and balanced scorecards as learning resources for new professionals (eg students, new entrants and career-changers).

Theoretical framework

Kaplan and Norton (2000) developed the concept of a strategy map as a visual tool to help organizations communicate their strategies, and the processes and systems enabling implementation. The visual depiction of the links between critical objectives including crucial cause-and-effect relationships is an essential dimension of the strategy mapping approach. Kaplan and Norton (2000, p. 166) also emphasize how strategy maps can

“show how an organization will convert its initiatives and resources – including intangible assets such as corporate culture and employee knowledge – into tangible outcomes.”

Strategy maps are particularly promising tools for service organizations like libraries, whose activities are based on interdependent processes and professional expertise, hence the growing numbers of library and information services around the world experimenting with or adopting the concept. In addition to the communicative and related dimensions, strategy maps also promote the notion of balance in strategic planning and performance measurement, by requiring managers to focus simultaneously on financial, customer, internal process, and learning and growth perspectives. Kaplan and Norton’s (2000) focus on the customer, and the suggested typical customer value proposition of operational excellence, customer intimacy, or product leadership, also connect well with contemporary library concerns and values (eg, service quality, timely delivery; relationship management, trusted provider; distinctive collections, best practices).

Kaplan and Norton (2004a, p. 54) later developed their conceptualization of the intangible assets included in the learning and growth dimension of the balanced scorecard strategy map, defining this component as “strategic readiness” to underline the point that development and assessment of people, systems, and culture (human, information, and organization capital) only makes sense in the context of an organization’s strategy. The accompanying strategy map template consequently expands the bottom part of the map (“the foundation”), again in terms that speak directly to issues and concerns of contemporary academic libraries and subject liaisons. Table 1 extracts the relevant elements of the revised strategy map model, showing how intangible assets fit into the strategy map.

	Strategic Job Families	Strategic IT Portfolio	Organization Change Agenda
Learning and Growth Perspective	Human Capital <ul style="list-style-type: none"> • Skills • Training • Knowledge 	Information Capital <ul style="list-style-type: none"> • Systems • Databases • Networks 	Organization Capital <ul style="list-style-type: none"> • Culture • Leadership • Alignment • Teamwork

Table 1: Intangible asset component of strategy maps (Kaplan and Norton, 2004a)

The expanded coverage of intangible assets here is reflected in the growing interest in evaluation of intellectual assets in libraries. Several authors have argued that intellectual capital theory can assist academic libraries in developing new measures of performance (Corrall and Sriborisutsakul, 2010; Huotari and Iivonen, 2005; Kostagiolas & Asonitis, 2009; Town, 2011). Town (2011, p. 123) has asserted that “The assessment of intangible value added will be key to developing a compelling story around our overall value proposition”, which echoes Kaplan and Norton’s (1996b, p. 77) notion of “Using measurement to tell the story of the strategy”.

Methodology

The investigation was designed as a project with conceptual and empirical phases that each comprise different stages. The research is in progress and the present paper reports on the initial stages only.

Conceptual phase

A literature review was used to define established, emergent and expected roles, responsibilities and skillsets of academic subject liaison librarians, including their relationships within and beyond the library. The review is ongoing, wide-ranging in the types of institutions included within its scope, and international in its coverage, but limited to English-language publications. A website survey was used to investigate visions, goals and actions explicitly or implicitly related to subject specialist liaison work in university library strategy documents, and associated values, objectives, and metrics. Collecting data via documents in the public domain is an established method of Internet-based research that has been used previously to investigate library strategic plans in the UK and other countries (McNicol, 2005; Pacios, 2004). The sample used here was drawn from members of the Russell Group¹, which represents 24 leading UK universities, known particularly for their research-intensive focus.

Thematic cross-case qualitative content analysis is being used to develop exemplar strategy maps and balanced scorecards reflecting typical liaison librarian roles and activities to assess the feasibility of using such tools to characterize and evaluate their strategic contribution. To assist with the identification of intangible assets for the intellectual capital components of the balanced scorecard, the study has adopted the categorization of intellectual assets provided by the Organisation for Economic Co-operation and Development (OECD) as an analytical framework. The OECD classification was chosen because of its international standing, and because the descriptors set out in the 2008 synthesis report resonated strongly with concepts and keywords surfacing from the preliminary literature review. Table 2 displays the three broad categories of intellectual assets specified with the brief descriptions and examples/keywords for each category.

Category	Brief description	Examples/keywords
Human capital	Knowledge, skills, and know-how that staff “take with them when they leave at night”	Innovation capacity, creativity, know-how, previous experience, teamwork capacity, employee flexibility, tolerance for ambiguity, motivation, satisfaction, learning capacity, loyalty, formal training, education.
Relational capital	External relationships with customers, suppliers, and R&D partners	Stakeholder relations: image, customer loyalty, customer satisfaction, links with suppliers, commercial power, negotiating capacity with financial entities.
Structural capital	Knowledge that stays with the firm “after the staff leaves at night”	Organizational routines, procedures, systems, cultures, databases: organizational flexibility, documentation service, knowledge center, information technologies, organizational learning capacities.

Table 2: Classification of intellectual assets (OECD, 2008, pp. 10-11.)

Empirical Phase

The next phase of the research will explore the development of maps and scorecards in the field, using document analysis and focus groups/interviews with subject liaison librarians at selected case sites in the UK and USA, finishing with a research workshop to share and validate the emerging findings with a wider stakeholder group. The final stage of the investigation will also evaluate the use of maps and scorecards characterizing particular roles or areas of practice as learning resources in professional education and organization development to prepare students and practitioners for new roles and emerging models of service delivery.

Preliminary findings

Roles, responsibilities, and skillsets

Literature dating back to the 1960s reveals a wide range of job titles have been used to denote the subject/liaison role, which has evolved from its traditional conception as a reference librarian or bibliographer, through development of a focus on instruction or user education and consulting in the 1970s and 1980s (eg, tutor librarian, subject consultant), to more emphasis on liaison and outreach in the 1990s and 2000s (Feetham, 2006; Wang et al., 2010). The liaison title seems to have emerged a decade earlier in the UK, and was accompanied by arguments for using the term “information specialist”, instead of “subject specialist” as a more appropriate description of the expertise provided

1 The Russell Group. www.russellgroup.ac.uk

(Feetham, 2006). The title “learning advisor” was another UK variant found in the 2000s (Bewick and Corral, 2010; Pinfield, 2001). Despite the prevalence of the liaison concept in current literature (Arendt and Lotts, 2012; Attebury and Fennell, 2009; Cooke et al., 2009; Gabridge, 2009; Jaguszewski and Williams, 2013), recent UK-wide surveys (Bewick and Corral, 2010; Brewerton, 2011) found that “subject librarian” was more frequently chosen as the formal title than “liaison librarian”, although the UK institutions whose strategies were surveyed for the present study revealed a slight preference for the liaison title.

Other important concepts featuring in contemporary literature include the “blended librarian” (Bell and Shank, 2004; Shank and Bell, 2011) and “embedded librarian” (Calkins and Kvenild, 2010; Dewey, 2004; Shumaker, 2012). Blended librarianship emphasizes the expanded skillset needed for subject librarianship in the digital world, which “combines the traditional skill set of librarianship with the information technologist’s hardware/software skills, and the instructional or educational designer’s ability to apply technology appropriately in the teaching-learning process” (Bell and Shank, 2004, p. 373), while embedded librarianship emphasizes “the importance of forming a strong working relationship between the librarian and a group or team of people who need the librarian’s information expertise” (Shumaker, 2012, p. 4). Although much of the literature on embedding is related to the library’s role in teaching and learning (Kvenild and Calkins, 2011), the concept is also applicable to library support for research (Carlson and Kneale, 2011), particularly in health sciences (Freiburger and Kramer, 2009; Greyson et al., 2013), where it is essentially a variant of the older concept of the “informationist” or information specialist in context (ISIC), promoted by the Medical Library Association for more than a decade (Shipman, 2007).

A key theme which recurs throughout the literature and supports the promotion of the embedded and blended librarian models is the importance of collaboration and partnership between librarians and faculty or other stakeholders in learning and research (Donham and Green, 2004; Fonseca and Viator, 2009; Garritano and Carlson, 2009; Held, 2010; Hoffman, 2011; Matthew and Schroeder, 2006). Shank and Bell (2011, p. 106) stress that “The principle that librarians can and should be integral, educational partners as well as a catalyst for students’ knowledge enrichment and intellectual inquiry guides blended librarianship”, while partnerships and collaborative relationships are central to Shumaker’s (2012) account of the embedded librarian. Jaguszewski and Williams (2013, p. 13) also emphasize their importance:

“Collaboration and partnerships at every level, as well as clear roles and responsibilities, are critical to leveraging expertise and thereby developing and expanding new services, liaison roles, and library roles more generally. Librarians are increasingly inter-reliant with others on campus.”

The skillset required by contemporary subject liaisons is a continuing subject for debate. In addition to the perennial question of how much subject knowledge is needed for liaison work, and the pedagogical know-how needed to support learning and teaching (Bell and Shank, 2004; Bewick and Corral, 2010), the competencies required to provide effective support for research in the current environment have become a major concern (Auckland, 2012; Gabridge, 2009; Garritano and Carlson, 2009; Jaguszewski and Williams, 2013). Auckland’s (2012) report has a clear focus on research support and also deliberately ignores core, basic skills that are unlikely to change (including personal and interpersonal skills). She identified knowledge and skills gaps and shortages in several areas of professional/technical expertise, including:

- preservation of research outputs
- data management and curation
- compliance with funding mandates
- data manipulation tools
- data mining
- preservation of project records
- sources of research funding
- metadata schema and discipline/subject standards and practices

Jaguszewski and Williams (2013, p. 14) stress the importance of “soft skills”, on the following basis:

“...other knowledge can be acquired through training and experience. Emerging or new baseline workforce requirements will include, but are not limited to: capacity to cultivate trusted relationships with faculty and

others, the ability to engage and thrive in the messy and ambiguous, aptitude for systems thinking, an ability to connect research and learning, and skills including political savvy, analytical and problem-solving skills, program development, conflict fluency, civility, and strong leadership."

The results of the literature review confirmed trends previously reported in characterizing the work of liaison librarians as requiring greater breadth and depth of skills, knowledge and understanding to provide learning and research support at more specialized levels than historically needed. A key trend identified was the increasing emphasis on collaboration and partnerships with both academic colleagues and other professional and administrative services, and continuing debate around the level of domain knowledge required for some areas of work.

Visions, goals, and actions

Analysis of the library strategy documents found significant variety in their format and specificity, with relatively few examples in the public domain where the role of liaison librarians in accomplishing library and institutional goals was explicitly articulated, indicating the potential value of exploring new methods of capturing and presenting their contribution. The variety of responsibilities and activities assigned to subject liaison librarians can make it hard for them to communicate their distinctive contribution clearly and concisely and also make it difficult for others to fully understand the breadth and depth of their competence. However, by combining insights gained from the literature with relevant findings from the strategy documents, we can construct a prototype strategy map to illustrate how the tool could be used to display typical university library goals requiring actions by subject liaison librarians (or staff in similar roles) for their effective accomplishment.

The core components of the strategy map model are the sets of goals or strategic objectives grouped under the four perspectives of the balanced scorecard. Most organizations place a short vision statement at the top of the map. Jones (2011, p. 37) advocates "Framing your strategy with mission and values", by placing the mission or purpose at the top, and adding a separate "values perspective" at the bottom, underpinning organizational capability and directing organizational behavior. A values component has been included here in view of their prominence in the strategies examined and in related literature (Town, 2011; Town and Kyrillidou, 2013). Not-for-profit organizations often add to or change the perspectives represented (Jones, 2011); for example, Matthews (2008) suggests adding an "information resources perspective" for libraries. The model suggested here includes Vision, Purpose, and Values, and adds a Partnership perspective to reflect one of the key themes identified in the literature.

Conclusion

Strategy maps are promising tools for articulating the competencies and strategic contributions of subject liaison librarians. Using a framework that includes different dimensions of intellectual capital should enable information professionals to articulate existing and required competencies in different ways that highlight taken-for-granted assets that are fundamental to the liaison role, such as personal know-how, working relationships, and structural arrangements, as well as identifying skills gaps and shortages, structural weaknesses, and other factors impacting their "strategic readiness". Additional work is needed to define performance measures or indicators for the balanced scorecard part of the model, prior to developing and testing both strategy maps and balanced scorecards with library practitioners in field settings.

Vision	A world-class university library delivering intellectual growth through application of vital professional expertise to enhance the quality of learning, teaching, research, and enterprise through collaboration and partnership, with a global reputation as an exemplar of innovative and transformative services.						
Purpose	<p>Create flexible inspiring physical and virtual research and learning environments providing timely access to data, information, and knowledge resources, by</p> <ul style="list-style-type: none"> • Selecting, developing, and curating distinctive collections and tools • Delivering training, guidance, and assistance to individuals and groups • Promoting, advancing, and exploiting beneficial changes in scholarly communication • Managing relationships, building communities of learning and practice, and continuously improving interactions between information, people, and technology 						
Goals	Finance and funding		Customer value proposition		Partnerships and participation		
	<ul style="list-style-type: none"> • Information resource spend per capita matches or exceeds our comparators • Article processing charges (APCs) budget promoted and spent efficiently and effectively • Library contribution to research grant income increases year-on-year 		<ul style="list-style-type: none"> • Flexible timely access to relevant content, advice and infrastructure • Coordinated academic skills support designed around the student journey, for undergrads, Masters and doctoral students • Collaborative services embedded in research life-cycle and workflows 		<ul style="list-style-type: none"> • Students, academics, and service partners actively involved in service planning and resource decisions • Extended liaison model promoting Integrated cross-service partnerships • Subject librarians designing and/or assisting assessment of student coursework • Subject librarians delivering expertise to research project teams in situ 		
	Operational processes						
	<ul style="list-style-type: none"> • Streamlined resource selection and acquisition through patron driven acquisition (PDA) • Discipline-based academic skills tutorials/support available online for all subjects, including plagiarism guidance • Professionally staffed library reference desks replaced by digital services and office hours in academic departments • Consistent online presence for subject liaison librarians in virtual learning environments 						
Learning and Growth							
Structural capital		Human capital		Relational capital			
<ul style="list-style-type: none"> • Coordinator roles to support liaison in emerging specialty areas • Institution-wide working groups to implement OA and RDM policies 		<ul style="list-style-type: none"> • Immersion program for subject liaisons to develop research know-how • Audit of existing knowledge and skills transferable to new specialty areas 		<ul style="list-style-type: none"> • Network of student library champions to match academic library representatives • Strengthened formal partnerships with IT, research, and education services 			
Values	Access	Openness	Teamwork	Communication	Partnership	Expertise	Innovation

Figure 1: Subject librarian strategy map

References

- Arendt, J. and Lotts, M. (2012), "What liaisons say about themselves and what faculty say about their liaisons, a U.S. survey", *portal: Libraries and the Academy*, Vol. 12 No. 2, pp. 155-177.
- Attebury, R.I. and Finnell, J. (2009), "What do LIS students in the United States know about liaison duties?", *New Library World*, Vol. 110 No. 7/8, pp. 325-340.
- Auckland, M. (2012), *Re-Skilling for Research: An Investigation into the Roles and Skills of Subject and Liaison Librarians Required to Effectively Support the Evolving Information Needs of Researchers*, RLUK Research Libraries UK, London, available at: <http://www.rluk.ac.uk/content/re-skilling-research>.

- Bell, S. and Shank, J. (2004), "The blended librarian: a blueprint for redesigning the teaching and learning role of academic librarians," *College & Research Libraries News*, Vol. 65, No. 7, pp. 372-375, available at: <http://crln.acrl.org/content/65/7/372.full.pdf>
- Bewick, L. and Corral, S. (2010), "Developing librarians as teachers: a study of their pedagogical knowledge", *Journal of Librarianship and Information Science*, Vol. 42 No. 2, pp. 97-110.
- Bowlby, R. (2011), *Living the Future: Organizational Performance Assessment*, Association of Research Libraries, Washington, DC, available at: <http://www.arl.org/storage/documents/publications/bowlby-organizational-performance-assessment-5-31-11.pdf>
- Brewerton, A. (2011), "...and any other duties deemed necessary: an analysis of subject librarian job descriptions", *SCONUL Focus*, No. 51, pp. 60-67, available at: http://www.sconul.ac.uk/sites/default/files/documents/18_2.pdf
- Brown, S. (2006), "Foreword", in Dale, P., Holland, M. and Matthews, M. (Eds.), *Subject Librarians: Engaging with the Learning and Teaching Environment*, Ashgate, Aldershot, p. xiii.
- Calkins, K. and Kvenild, C. (2010), "Embedding in the 21st century academy: crossing curriculum and geography", in *World Library and Information Congress: 76th IFLA General Conference and Assembly, 10-15 August 2010, Gothenberg, Sweden*, available at: <http://conference.ifla.org/drupal2/past/2010/74-calkins-en.pdf>
- Carlson, J. and Kneale, R. (2011), "Embedded librarianship in the research context: navigating new waters", *College & Research Libraries News*, Vol. 72 No. 3, pp. 167-170, available at: <http://crln.acrl.org/content/72/3/167.full.pdf>
- Chew, K. and Aspinall, E. (2011), "Serving multiple stakeholders: crafting a "blended" scorecard at the University of Minnesota Health Sciences Libraries", in Hiller, S., Justh, K., Kyriolidou, M., and Self, J. (Eds.), *Proceedings of the 2010 Library Assessment Conference: Building Effective, Sustainable, Practical Assessment*, October 24-27, 2010, Baltimore, Maryland, Association of Research Libraries, Washington, DC, pp. 335-343, available at: <http://libraryassessment.org/bm-doc/proceedings-lac-2010.pdf>
- Cooke, L., Norris, M., Busby, N., Page, T., Franklin, G., Gadd, E. and Young, H. (2011), "Evaluating the Impact of academic liaison librarians on their user community: a review and case study", *New Review of Academic Librarianship*, Vol. 17 No. 1, pp. 5-30.
- Corral, S. and Sriborisutsakul, S. (2010), "Evaluating intellectual assets in university libraries: a multi-site case study from Thailand", *Journal of Information and Knowledge Management*, Vol. 9 No. 3, pp. 277-290.
- Cotta-Schönberg, M. (2007), "The changing role of the subject specialist", *LIBER Quarterly*, Vol. 17 No. 3/4, available at: <http://liber.library.uu.nl/index.php/lq/article/view/7890/8111>
- Creaser, C. and Spezi, V. (2012), *Working Together: Evolving Value for Academic Libraries*, LISU, Loughborough University, Loughborough, available at: <https://dspace.lboro.ac.uk/2134/13476>
- Cribb, G. (2005), "Human resource development: impacting on all four perspectives of the Balanced Scorecard", in *Libraries – A Voyage of Discovery: World Library and Information Congress, 71th IFLA General Conference and Council, August 14-18, 2005, Oslo, Norway*, available at: <http://archive.ifla.org/IV/ifla71/papers/075e-Cribb.pdf>
- Dewey, B.I. (2004), "The embedded librarian", *Resources Sharing & Information Networks*, Vol. 17 No. 1-2, pp. 5-17.
- Donham, J. and Green, C.W. (2004), "Developing a culture of collaboration: librarian as consultant", *Journal of Academic Librarianship*, Vol. 30 No. 4, pp. 314-321.
- Feetham, M. (2006), "The subject specialist in higher education: a review of the literature", in Dale, P., Holland, M. and Matthews, M. (Eds.), *Subject Librarians: Engaging with the Learning and Teaching Environment*, Ashgate, Aldershot, pp. 3-17.
- Fonseca, A.J. and Viator, V.P. (2009), "Escaping the island of lost faculty: collaboration as a means of visibility", *Collaborative Librarianship*, Vol. 1 No. 3, pp. 81-90.
- Freiburger, G. and Kramer, S. (2009), "Embedded librarians: one library's model for decentralized service", *Journal of the Medical Library Association*, Vol. 97 No. 2, pp. 139-142, available at: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2670204/>
- Gabridge, T. (2009), "The last mile: liaison roles in curating science and engineering research data", *Research Libraries Issues*, No. 265, pp. 15-21, available at: <http://old.arl.org/bm-doc/rli-265-gabridge.pdf>
- Garritano, J.R. and Carlson, J.R. (2009), "A subject librarian's guide to collaborating on e-science projects", *Issues in Science and Technology Librarianship*, available at: <http://www.istl.org/09-spring/refereed2.html>
- Greyson, D., Surette, S., Dennett, L. and Chatterley, T. (2013), "'You're just one of the group when you're embedded': report from a mixed-method investigation of the research-embedded health librarian experience", *Journal of the Medical Library Association*, Vol. 101 No 4., pp. 287-297, available at: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3794684/>
- Hammes, M. (2010), "Third generation Balanced Scorecards for libraries: from measuring instrument to core strategic management tool", in Graham, M. and Thornton, S. (Eds.), *Proceedings of the 8th Northumbria International Conference on Performance Measurement in Libraries and Information Services*, Florence, Italy, 17-20 August 2009, Northumbria University Press, Newcastle upon Tyne, pp. 43-53.
- Held, T. (2010), "Blending in: collaborating with an instructor in an online course", *Journal of Library & Information Services for Distance Learning*, Vol. 4 No. 4, pp. 153-165.
- Heseltine, R. (1995), "The challenge of learning in cyberspace", *Library Association Record*, Vol. 97 No. 8, pp. 432-433.
- Hoffman, S. (2011). *Embedded academic librarian experiences in online courses: Roles, faculty collaboration, and opinion*. *Library Management*, 32(6/7), 444-456.

- Holland, M. (2006), "Serving different constituencies: researchers", in Dale, P., Holland, M. and Matthews, M. (Eds.), *Subject Librarians: Engaging with the Learning and Teaching Environment*, Ashgate, Aldershot, pp. 131-147.
- Huotari, M.L. and Iivonen, M. (2005), "Knowledge processes: a strategic foundation for the partnership between the university and its library", *Library Management*, Vol. 26 No. 6/7, pp. 324-335.
- Jaguszewski, J.M. and Williams, K. (2013), *New Roles for New Times: Transforming Liaison Roles in Research Libraries*, Association of Research Libraries, Washington, DC, available at: <http://www.arl.org/storage/documents/publications/NRNT-Liaison-Roles-final.pdf>
- Jones, P. (2011), *Strategy mapping for learning organizations: building agility into your balanced scorecard*, Gower, Farnham.
- Jones-Evans, A. (2005), "Bangor university library service: an update", *Journal of Librarianship and Information Science*, Vol. 37 No. 3, pp. 115-117.
- Kaplan, R.S. and Norton, D.P. (1996a), *The Balanced Scorecard: Translating Strategy into Action*, Harvard Business School Press, Boston, MA.
- Kaplan, R.S. and Norton, D.P. (1996b), "Using the balanced scorecard as a strategic management system", *Harvard Business Review*, Vol. 74 No. 1, pp. 167-176.
- Kaplan, R.S. and Norton, D.P. (2000), "Having trouble with your strategy? Then map it", *Harvard Business Review*, Vol. 78 No. 5, pp. 167-176.
- Kaplan, R.S. and Norton, D.P. (2001), *The Strategy-Focused Organization: How Balanced Scorecard Companies Thrive in the New Business Environment*, Harvard Business School Press, Boston, MA.
- Kaplan, R.S. and Norton, D.P. (2004a), "Measuring the strategic readiness of intangible assets", *Harvard Business Review*, Vol. 82 No. 2, pp. 52-63.
- Kaplan, R.S. and Norton, D.P. (2004b), *Strategy Maps: Converting Intangible Assets into Tangible Outcomes*, Harvard Business School Press, Boston, MA.
- Kettunen, J. (2007), "The strategic evaluation of academic libraries", *Library Hi Tech*, Vol. 25 No. 3, pp. 409-421
- Kim, D.S. (2010), "Using the Balanced Scorecard for strategic operation of the cataloging department", *Cataloging & Classification Quarterly*, Vol. 48 No. 6-7, pp. 572-584.
- Kostagiolas, P.A. and Asonitis, S. (2009), "Intangible assets for academic libraries: definitions, categorization and an exploration of management issues", *Library Management*, Vol. 30 No. 6/7, pp. 419-429.
- Kvenild, C. and Kalkins, C. (Eds.) (2011), *Embedded Librarians: Moving Beyond One-Shot Instruction*, Association of College and Research Libraries, Chicago, IL.
- Leong, N.K. (2005), "How are we doing? – Measuring performance at the National University of Singapore Libraries", in *International Conference on Libraries: Towards a Knowledge Society*, March 14-16, 2005, University Sains Malaysia (USM), Penang, Malaysia, available at: http://libportal.nus.edu.sg/media/media/2005_nkl_hrwd_paper.pdf
- Lewis, V., Hiller, S., Mengel, E. and Tolson, D. (2013), "Building scorecards in academic research libraries: performance measurement and organizational issues", *Evidence Based Library and Information Practice*, Vol. 8 No. 2, pp. 183-199, available at: <http://ejournals.library.ualberta.ca/index.php/EBLIP/article/view/19650/15252>
- Manchester University Library (2012), "News from member libraries", *SCONUL Focus*, No. 56, pp. 61-62, available at: www.sconul.ac.uk/sites/default/files/documents/20_6.pdf
- Matthew, V. and Schroeder, A. (2006), "The embedded librarian program: faculty and librarians partner to embed personalized library assistance into online courses", *EDUCAUSE Quarterly*, No. 4, pp. 61-65, available at: <https://net.educause.edu/ir/library/pdf/EQM06410.pdf>
- Matthews, J.R. (2008), *Scorecards for Results: A Guide for Developing a Library Balanced Scorecard*, Libraries Unlimited, Westport, CT.
- Mays, R., Tenopir, C. and Kaufman, P. (2010), "Lib-Value: measuring value and return on investment of academic libraries", *Research Library Issues: A Bimonthly Report from ARL, CNI, and SPARC*, No. 271, pp. 36-40, available at:
- McNicol, S. (2005), "The challenges of strategic planning in academic libraries", *New Library World*, Vol. 106 No. 11/12, pp. 496-509.
- Oakleaf, M. (2010), *The Value of Academic Libraries: A Comprehensive Research Review and Report*, Association of College and Research Libraries, Chicago, IL, available at: http://www.ala.org/acrl/sites/ala.org/acrl/files/content/issues/value/val_report.pdf
- OECD (2008), *Intellectual Assets and Value Creation: Synthesis Report*, Organisation for Economic Co-operation and Development, Paris, available at: <http://www.oecd.org/sti/inno/40637101.pdf>
- Pacios, A. R. (2004), "Strategic plans and long-range plans: is there a difference?", *Library Management*, Vol. 25 No. 6/7, pp. 259-269.
- Pienaar, H. and Penzhorn, C. (2000), "Using the balanced scorecard to facilitate strategic management at an academic information service", *Libri*, Vol. 50 No. 3, pp. 200-209, available at: <http://www.librijournal.org/pdf/2000-3pp202-209.pdf>
- Pinfield, S. (2001), "The changing role of subject librarians in academic libraries", *Journal of Librarianship and Information Science*, Vol. 33 No. 1, pp. 32-38.
- Poll, R. (2001), "Performance, processes and costs: managing service quality with the balanced scorecard", *Library Trends*, Vol. 49 No. 4, pp. 709-717, available at: <http://www.ideals.illinois.edu/handle/2142/8367>

Powis, C. (2012), "Maximising value, enhancing learning: boutique teaching and training", in Priestner, A. and Tilley, E. (Eds.), *Personalised Library Services in Higher Education: the Boutique Approach*, Ashgate, Abingdon, pp. 87-106.

RLUK and RIN (2011), *The Value of Libraries for Research and Researchers*, Research Information Network, London, available at: <http://www.rluk.ac.uk/content/value-libraries-research-and-researchers>

Shank, J.D. and Bell, S. (2011), "Blended librarianship: [re]envisioning the role of librarian as educator in the digital information age", *Reference & User Services Quarterly*, Vol. 51 No. 2, pp. 105-110.

Shipman, J. (2007), "Informationists or information specialists in context (ISIC): six years after conception", *IFLA Journal*, Vol. 33 No. 4, pp. 335-339, available at: <http://archive.ifla.org/V/iflaj/IFLA-Journal-4-2007.pdf>

Shumaker, D. (2012), *The Embedded Librarian: Innovative Strategies for Taking Knowledge Where It's Needed*, Information Today, Medford, NJ.

Town, J.S. (2011), "Value, impact, and the transcendent library: progress and pressures in performance measurement and evaluation", *Library Quarterly*, Vol. 81 No. 1, pp. 111-125.

Town, J.S. and Kyrillidou, M. (2013), "Developing a values scorecard", *Performance Measurement and Metrics*, Vol. 14 No. 1, pp. 7-16.

Wang, H., Tang, Y. and Knight, C. (2012), "Contemporary development of academic reference librarianship in the United States: A 44-year content analysis", *Journal of Academic Librarianship*, Vol. 36 No. 6, pp. 489-494.