# Getting to Grips with Data Literacy and Data-Driven Decision Making
# UKeiG's Members' Day 2017

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UKeiG's Members' Day, held at CILIP's London headquarters on the 16th March 2017, was a huge success and attracted a diverse range of delegates. It showcased the theme of information modelling using data and metrics: the analysis, exploitation, utilisation, management and visualisation of data in a number of settings, including the construction industry and public libraries.

Keith Wilson, Construction Information Consultant, provided a fascinating insight into Building Information Modelling (BIM), a well-established integrated project information model and common data environment in that sector. He described BIM as the "UK construction industry's information engine room" and standardised data and structured information as the building sector's "bedrock", referencing Martin White's October 2016 (Volume 13, issue 3) eLucidate article on the topic. BIM embraces the whole use lifecycle of building projects providing the means by which everyone can understand a building through the use of a digital model "from first thoughts and site identification to its eventual demolition." The UK is a world leader, unlocking new, more efficient collaborative ways of working and sharing resources. In a diverse industry with tens of thousands of people, collaboration, effective communication and national standards are fundamentally important to the success of any construction project. BIM "brings together information about every component of the building for anyone to use for any purpose. Each model is a shared resource that accumulates and manages knowledge about the building through its life. "

Keith listed key elements of the BIM information handling tool kit including:

- Information handling rules
- A data exchange scheme for building
- A library of product objects – parametric (levels of detail) and structured, standardised data (levels of information)
- Specification
- Classification
- A digital plan of work
- Standards
- Purpose made contracts
- A plain language dictionary

**Conundrum of terminology**

He cautioned that a key challenge for BIM is the "conundrum of terminology" and the need to disambiguate often-complex construction nomenclature with a tightly controlled, shared and, most importantly, "understood" vocabulary organised by a flexible classification scheme. Simple language was essential, but how best to define the concept of "space", for example?

**Datamorphosis**

Aude Charillon, of Newcastle City Libraries, presented on "releasing and re-using" public library data to engage and empower library visitors. She is a champion of open, shared content and data literacy; the need to educate people about their rights to utilise and customise creative works – images, sound, films and data - that are free of copyright. In April 2016 she wrote: *"It's all very well using creative works made by others, but what about the content the library service holds and the information we, as an organisation, collect?* We felt we were only the custodians of that information and that it was our turn to make our information more available; we wanted to give it back to our residents and visitors and empower them about their rights to use and re-use our data." Data about computer usage, membership, loans and enquiries was placed in the public domain under an Open Government Licence and visitors to the library were invited to download it. A workshop encouraged people to work with the data and there were a number of promising data visualisation outcomes. "We had some very interesting results. One participant looked at PC usage over the years and created graphs showing its evolution. Another plotted our members on a map of the UK and created a library usage data dashboard." Charillon emphasised the importance of data being released in a standard, easily re-usable and consistent way, alongside the need for a resilient open source format like "comma-separated values" (CSV.) One common thread between Keith and Aude's presentations was the absolute requirement to facilitate what Keith described as "quick, confident and widespread use" of data.

**Data Mashup**

Jisc's Siobhan Burke gave the delegates an overview of Analytics Lab, a joint HESA (UK Higher Education data and analysis) and Jisc business intelligence research and development project. She also gave an overview of Heidi Plus, the Higher Education Information Database for Institutions. It encompasses the delivery of data sets through a data explorer tool, dashboards, visualisations, training and support materials.  Data includes:

- HESA data sets: summary data from the HESA student, staff, finance, HE-Business and Community Interactions, estates management and destination of leavers; performance indicators; student staff ratios
- Non-HESA data sets including UCAS, National Student Survey (NSS), SCONUL Library Management Statistics, Research Excellence Framework (REF)

Siobhan went on to focus on the Jisc Library Data Labs project, a major cross-institutional collaborative initiative that is using Agile planning and project management and data mashup techniques to develop proof of concept visualised dashboards using library data in conjunction with these major national datasets. (Her excellent overview of Agile

methodology is available from the UKeiG web site.) Specific library datasets included locally generated library data, Journal Citation Reports and other bibliometric information and JUSP (Jisc's Journal Usage Statistics Portal).



This was a compelling presentation as it emphasised the project's immediate value in supporting robust evidence-based decision-making. Siobhan listed major opportunities arising from the project for:

- Measuring the success and impact of the library service
- Identifying comparable institutions
- Benchmarking libraries by size, usage levels, learning space, budgets, provision of different resource types
- Measuring student satisfaction
- Articulating and monitoring key performance indicators

A compelling example was of journal "big publisher deals" where analysis by user type or subject could determine more detailed usage profiles, relevance, value for money and equity in resource allocation between Schools and Departments. There is also immense potential to evidence more effectively an academic library's contribution to the overall learning and teaching experience as part of the Teaching Excellence Framework (TEF.)

In July 2017 a series of Library dashboards will be released.

HESA and Jisc
BUSINESS INTELLIGENCE

## Library Dashboards – July 2017 release

| Name | Purpose | Use case | Data sources used |
|---|---|---|---|
| Benchmarking user satisfaction levels with library facilities | This dashboard is an explorer. In it you can create benchmark groups based upon the similarity of course makeup between the institutions. | As a library manager/director using a range of measure, I want to identify comparable institutions in order to benchmark my library facility by size, usage levels, budget, provision of different resource types and satisfaction with library facilities | JACS 3, National Student Survey, HESA data |
| Space Analysis v footfall & satisfaction | This dashboard can be used to explore the relationship between space, footfall and the overall satisfaction rating for from the NSS Data. | As a library manager or subject specialist I want to understand the impact that space provision has on student satisfaction, usage levels and interaction types. | SCONUL data HESA Data |
| Sconul Key Performance Indicators | This dashboard allows the user to explore the Sconul dataset by focusing and filtering down on Key Performance Indicators. Benchmarking can be done against comparator universities either selected or by mission group. | When performance and survey data is release I want to benchmark against comparator institutions so I can highlight resource gaps and success stories. | SCONUL data |
| Teaching Excellence Framework NSS Explorer | The primary purpose of this dashboard is to explore the 12 questions in the national student survey that are relevant to the teaching excellence framework. These can be explored in relation to library provision and study space. | When supporting the TEF return I want to link library performance data with NSS and HESA data so I can show how library resources and services contribute to TEF. | NSS Data (12 questions relevant to TEF) SCONUL Data HESA student data |

Simon Bains, Head of Research Services and Deputy Librarian, University of Manchester Library commented: "Library Data Labs is a hugely worthwhile concept, with the potential to deliver a step change in data literacy and data-driven decision making in libraries. I found it to be very rewarding to work with and learn from colleagues across the sector and to gain practical experience of agile project management and data visualisation software. This is an opportunity to contribute to national efforts to use data to answer strategically important questions about the use and impact of academic libraries, and I would encourage you to volunteer to lead or participate in a project team."

### The Data Challenge

Simon's quote segues perfectly into CILIP Chief Executive, Nick Poole's thought-provoking and insightful presentation on the role of data, analytics and visualisation in underpinning effective evidence-based decision-making and service development across the library and information profession. "We're living in the early days of a revolution in the ways in which people use information and technology in their daily lives. In the next twenty to thirty years, every person, every organisation and business will need access to information, library and data skills and professional values to succeed. Britain's society, industry and economy are changing fast. Looking ahead to the next decade, we need to invest in skills, infrastructure and innovation to ensure that we remain globally competitive as an economic and industrial power. The Centre for Economics & Business Research (CEBR) estimates that 182,000 new jobs will be created in the Data Sciences by 2020. Demand for data and information skills in the UK is outstripping supply by 40%. CILIP's goal for 2020 is to put library and information skills at the heart of a democratic, equal and prosperous society."

Data literacy is an increasingly important part of working life and ensuring that it is integrated into the knowledge and information skills set will future proof the profession. Nick observed that library and information professionals have often stood on the periphery spectating, watching things happen not making things happen, and allowing major developments in "big data" and "data science" to pass us by. Now is the time to respond more effectively to the challenges and opportunities that data has to offer. The profession is also crying out for a more robust evidence base, and a gap analysis is required to identify missing critical information that can help articulate our impact, value (return on investment) and importance. His presentation included four useful examples: academic, health, school and public libraries (with two of his graphics reproduced below.)
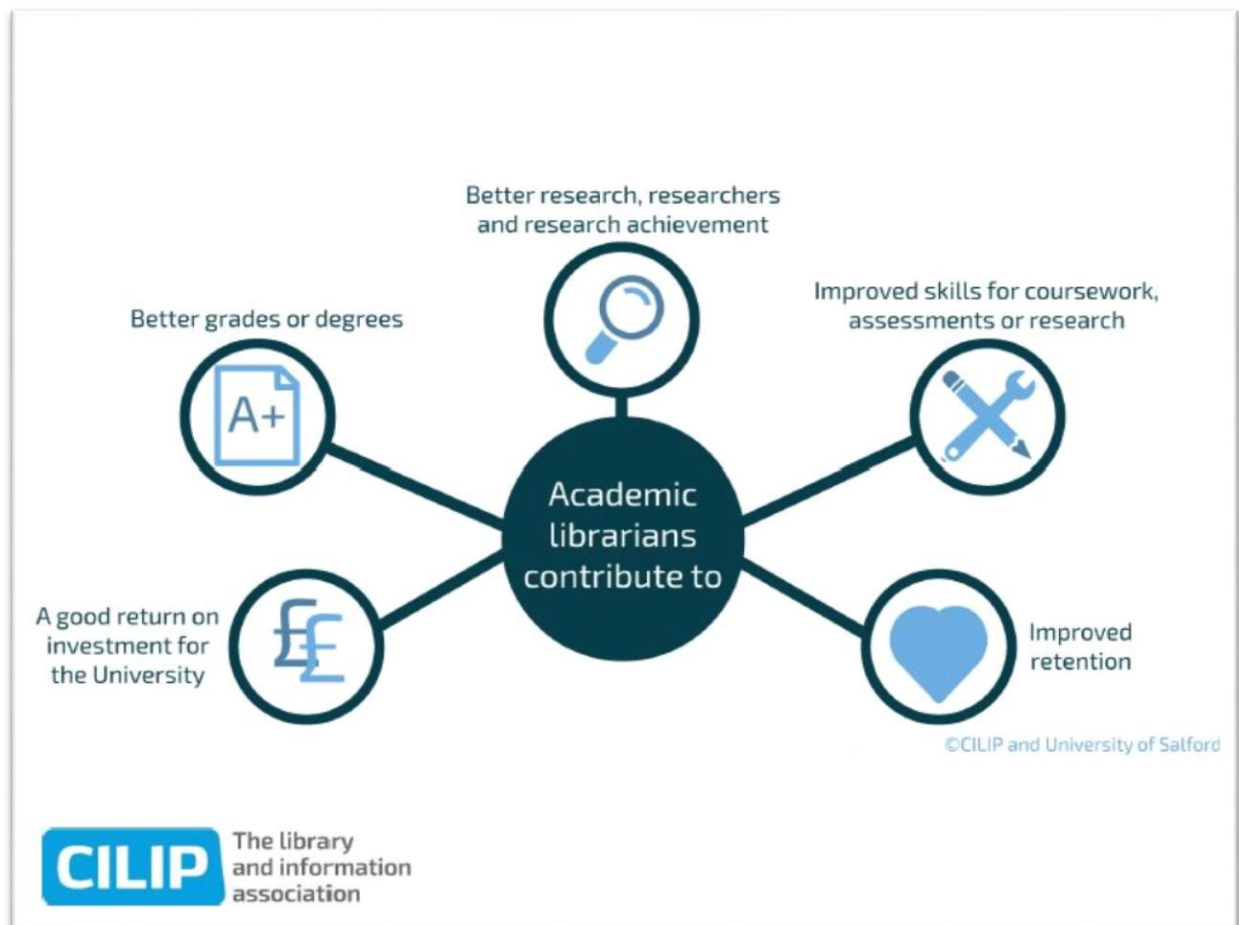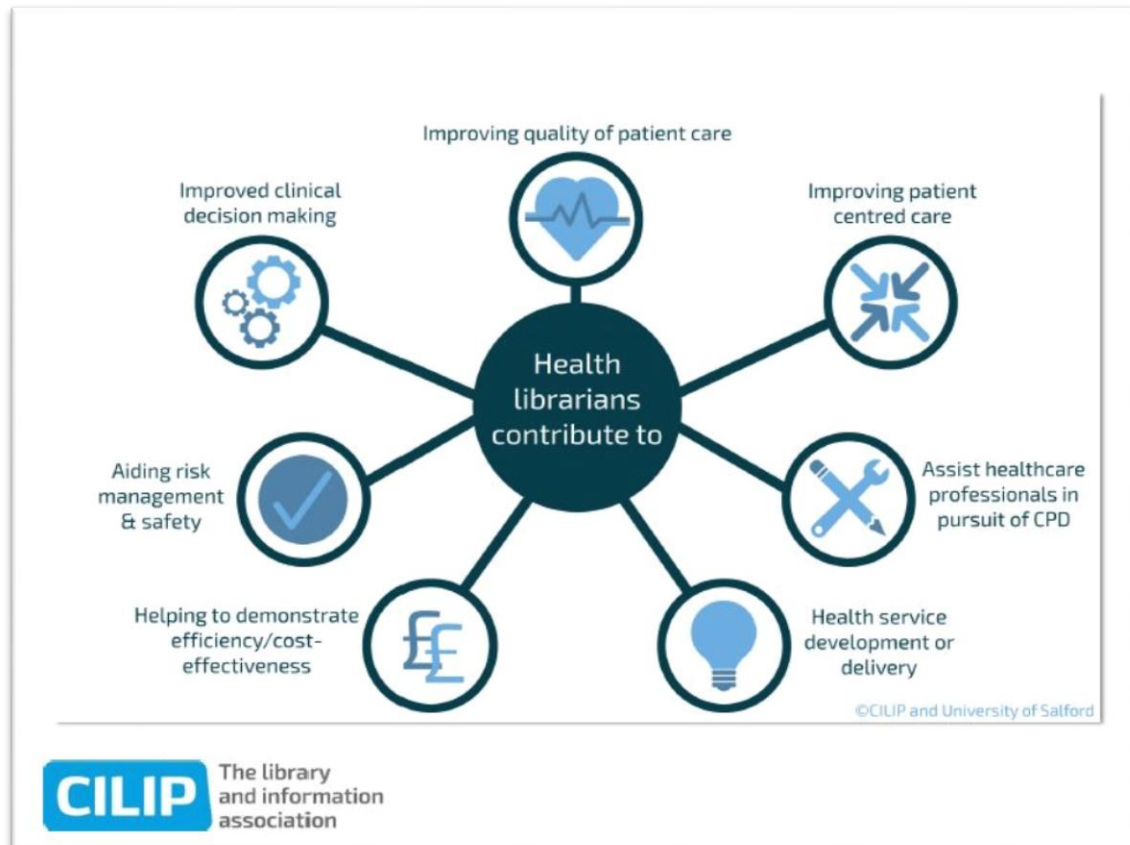
**"We put the 'I' into IT."**

The key themes of the day were the increasing relevance and importance of the developing paradigm of data literacy and data driven decision making to the library and information community, but also, more controversially, the paucity of aspiration in the profession to lead on key developments in this area. The time had come, rally cried Poole, to develop a strategy to address these issues, to reassert our authority and to initiate change and innovation by aspiring to senior management in organisations. He cited the popular truism that IT projects can fail if they are led by the technology; that people, organisational and user requirements must always come first. The library and information profession was key in taking this forward. ("We put the 'I' into IT.") The profession's specialist and generic knowledge and skills reflect what is required for effective data literacy. Where there are gaps and deficiencies it will be essential to upskill and also to review library and information school curricula to ensure future professionals are fit for purpose. There is also an opportunity to reach out to and collaborate with non-library and information colleagues in professional services, research support, business, statistics and IT departments, for example.

**Knowledge and Information Management**

The day concluded with a brief presentation from Sandra Ward on the launch of CILIP's new Knowledge and Information Management (K&IM) Special Interest Group (SIG). (The progress to date and plans for the future are detailed on her presentation slides.) The new Group will play an integral role in supporting the data literacy agenda, and will help

articulate CILIP's IM/KM strategy, building on the important work of champions like Martin White and Peter Griffiths, who have, over the years, tirelessly encouraged a proactive and leadership approach in this area.

"In today's climate, organisations of all sizes and types must capitalise on the information and knowledge they either possess or can obtain if they are to thrive and survive. This requires an effective K&IM framework that embraces leadership, culture, processes, systems and skills," writes Sandra. "The framework must support the exploitation of information and data, and the tacit knowledge represented in the skills, experience and insight of their staff and the teams and communities in which they work, share and learn. It must also recognise the importance of the information and knowledge gained through the many partnerships and collaborations in which organisations now routinely engage, including those with their customers and clients. Where data and information can be recorded or are generated automatically, the disciplines of information management can be applied to collect, organise, structure, store, manage, and deliver access to data and information so that it can be re-used, analysed and adapted. Tacit knowledge can to a degree be captured in standards, procedures, techniques and training thus treating it as information and protecting it from loss as organisations restructure and experts move. However, to ensure that tacit knowledge, that is, the know-how, experience and expertise of individuals which can't sensibly be documented, is accessible, shared and mobilised, requires different and social approaches: connecting people and teams, fostering the capability of the organisation and its staff to learn from experience, building learning techniques into organisational processes and ensuring a social and learning culture which fosters knowledge re-use, problem solving and the innovation and improvement which the organisation needs. K&IM approaches are different but must be recognised as needing to be closely intertwined if organisations are to reap the full benefit from their data, information and knowledge assets. This is the stimulus for CILIP's Knowledge and Information Management Special Interest Group."

Sandra paid homage to UKeiG's work over the years. The Group's brand, she announced, its professional development courses, networking opportunities publications and awards, were synonymous with success. It was a perfect note on which to conclude this overview of a stimulating and successful Members' event.

The hashtag #UKeiG2017 was used on the day, so please refer to that and visit @UKeiG to follow any comments, discussions or threads. PDF copies of the presentations are available on the Members' Only area of the UKeiG web site.

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