Smartphones for Law Students – Persuasive, Pervasive and Legal: a Research Study

Abstract: Smartphones have quickly become a key part of our daily lives. Over 70 percent of people in the UK own such a device and law students are no exception to this far-reaching trend[1]. The use of these devices has posed some significant questions on the extent of their impact on information seeking behaviour and in relation to information delivery of resources. Zaki Abbas, Andrew MacFarlane and Ayşe Göker, who have recently begun a research project together, seek to not only examine the information seeking behaviours (ISBs) of law students using their Smartphones for academic information retrieval, but also to investigate perspectives from subject law librarians from Higher Education Institutions (HEIs) throughout the UK. There is an impression that students tend to find Smartphones more appealing for their information seeking needs compared to the professional resources and services, such as virtual libraries, which their HEI have already invested in. The result leads to a deep concern from subject librarians that students may be at risk from weakening research skills as well as relying too much on poor information sources not specifically designed to meet their information needs within the academic context[5]. The authors also suggest that information service providers to be more pro-active in providing information to students through more user-friendly interfaces as well as capitalise on the growing use of the Smartphone as a means to deliver their product[4,5,6,15].

Keywords: mobile technology; smartphones; legal research

INTRODUCTION

Smartphones are increasingly becoming commonplace amongst the items we carry with us along with our wallet or purse and household keys. It is now considered fairly normal to expect individuals to own a device of this type and in not doing so they may feel a sense of social isolation to a certain degree[13,14]. Consequently, there are many diverse and fascinating areas of study that the use of Smartphones invite. This research study is specifically concerned with finding out how Smartphones are influencing the ISB of law students, who are the lawyers of tomorrow, who use integrated web browsers, Smartphone Apps and mobile versions of virtual libraries. It hopes to provide insightful details not only into academic institutions and legal information providers are concerned but also to provide, to some degree, an informative guideline for employers so that they can plan accordingly for these ISBs and the associated expectations of future employees within the sector.

We have set two core approaches to this research; the first being to investigate the trend of law students using Smartphones for anything related to information seeking. The second approach relates to the growth of Smartphone use, the expanding capabilities of the technology and the flexibility that this presents. Information service providers are now tapping into this technology as an alternative, yet lucrative, delivery channel[2]. E-resources on mobile platforms are now becoming more commonplace; in some cases going as far as replacing traditional text books as an information resource[3] as well as utilising the power of the internet through which virtual libraries and information are mostly delivered[12]. This area of activity will also be investigated as part of this research project.

Like law students and their Smartphones, academic libraries have not escaped this push for the digitisation of information resources. However, in most cases we find that each digital library vendor tends to employ their own individual format, interface 'look and feel', and with

their own functionality[5,6,11]. So although law students may have access to electronic information, they are faced with the task of having to learn to navigate between the various differing interfaces in order to obtain the information they need from the 'collective digital forest'. This presents a challenge to students who find certain resources cumbersome to use, leading to frustration and often driving them to seek information not from the dedicated, and in many cases costly, electronic resources that their library may have invested in. Instead, they consult the heterogeneous, semi-structured and relatively un-vetted content from Google, Google Scholar or another equivalent web-search engine to fulfil their academic information needs[4,5,6,7,8]. However, in doing so students not only risk being exposed to irrelevant data but also increase the likelihood of weakening their search skills.[9,5]

In general, Smartphones have provided an open channel through which information in bountiful amounts can flow. Given the mobile nature of these devices contextual aspects are a key advantage to both the provider of information and to the end user[26]. The Smartphone, carried in the pocket of a law student, brings yet another aspect into the arena, potentially making academic information retrieval a faster and more convenient task to perform. Whether law students resort to either using the heterogeneous web, and therefore being at the mercy of the ranking capabilities of a search-engine, or to consult specialist and paid-for information resources, depends on the usability and interactive motivation the students feel towards the resource at that particular time and in the context of how they are working.

The Smartphone has acted as a disruptive technology within the mix of paper versus electronic resources and vendors have reacted to this notion by seeking to deliver a highly integrated and user-friendly virtual library in the form of a legal information 'app' on their mobile platform[16]. However, concerns have already been voiced by some academic subject librarians that this would lead to students relying on that specific "app" for most, if not all, of their information needs. This would expose them to the risk of a 'narrow search'; whereby the retrieved data for a specific law topic would be focused on the information collection of the provider of the "app" and would not be receptive to the wider sources available across the electronic domain.[5]

This research does not seek to build an app or deliver an electronic resource which could serve as the "holy grail" of mobile virtual libraries. However, through empirical investigation, this research does aim to facilitate a basis for a platform upon which the development and the nurturing of vendor agnostic retrieval systems, in relation to academic information, could be promoted. This may be of significant interest to the UK's HEI's of which most are eager to tap into this ubiquitous technology but need to navigate the thin line between costs and subject specific information service provision; as well

as the intricate physical, contextual and technological aspects these varying devices bring. As a consequence, this research will also be of benefit to students who, instead of utilising the dedicated digital libraries provided to them, often resort to searching for information on the internet either from a pc or on their Smartphone. The reasons why students simply defer to the internet are:

- that they perceive that the user interfaces of some online resources are cumbersome compared with the user-friendliness of web search engines, such as Google. Perceived cumbersome user interface of some resources as opposed to the user-friendliness of web search engines[4,5,6].

- the perceived impression of retrieval success that Web search engines give when presenting numerous results in response to a particular search; despite many being irrelevant for the particular information needed[5,6].

- that, in general, students possess weak research skills and are too dependent on the retrieval and ranking abilities of web search engines, especially having become entrenched from their previous search experiences[5,6,12,20].

We hope that the outcome of this study will provide solutions to addressing this growing trend of ISBs of students and lessen their dependence on the broader internet. This would be achieved through by suggesting Smartphone-based alternatives for information searching.

RESEARCH BACKGROUND

Our research was driven by a number of factors including the:

- increased use of Smartphones in everyday aspects of society[10], which has impacted on all information seeking activity;

- increased use of these devices by students[7] and their constant reaction to the use of this technology to fill information gaps in their knowledge as an immediate and impulsive reaction;

- rapid growth in digital data being created (of which the legal domain plays a significant part) and which has led to more information being accessible to students for their academic needs;

- masses of digital data that requires to be effectively managed – a growing concern for all parties involved in this research;

- various virtual libraries and electronic resources available on the market that possess their own distinct interfaces and functionality, leading to students having to learn to use many different tools to access the same type of information.[4,5,12]

Theories relating to ISB

The literature that has focused on 'contextual' information seeking on mobile devices was reviewed in the course of this research including that designed in relation to the tourism and travel sector[26]. The following paragraphs outline the theories and research into ISB that was considered in relation to this project.

A number of models have been examined to provide background on information seeking activities, however it is felt that these models are more focused on the individualistic ISBs in relation to 'stationary' information resources. Smartphones and other mobile devices have paved the way for 'location-based applications' to be available for use, thus strengthening the call for a new generation of contextual information seeking models that can incorporate all the intrinsic behaviours, components and action elements within a comprehensive prototype. For background, Wilson's 'nested' model (1999) outlined information search behaviour as a subset of ISB, which in turn was a subset of information behaviour itself[23]. This was a generalist model. Similarly, Broder's classic model illustrates information retrieval from a holistic perspective but lacks detail in accounting for web-based search activities; this model was then augmented to include web queries; however, it did not address any contextual aspects[21]. Leckie's model of information needs pertaining to lawyers does provide more insight from a legal information retrieval perspective but does so from a career or function-based approach in that the information needs of lawyers may vary from those of law students, hence their needs and approaches to dealing with corresponding queries may differ[22]. Wilson's 1981 model of ISB does outline some contextual activity and takes into account environmental pressures and barriers that may impact on the information seeking activity of the individual (as well as incorporating aspects of Ellis' information seeking model[24]); which may be applied to the ISB of law students using Smartphones for web browsing[23]. We have also looked at Wilson's revised model of ISB[23], which provides more clarity in the aspects of contextual information seeking.

However, all the models mentioned above miss out on the non-task based information seeking activities that can also be part of a search process – in other words, the casual information search. Elsweiler, Wilson & Lunn's revised model of information behaviour, incorporating both work-based and casual information seeking, does provide this but does not account for the contextual aspects that Smartphones would involve[19]. We have also looked at the Ambisense model on contextual attributes, however this does not include specific reference to Smartphone usage for information seeking but does provide a high-level perspective on the contextual aspects of information seeking[25]. Bhatia & Kumar's illustration of the contextual information retrieval framework granulises this type of information seeking to include mobile devices themselves as well as resources and geospatial locations yet this is the only mobile-contextual part of the area we seek to examine[27].

In conclusion, despite the many models available, they are often specific and focussed on a certain aspect of information seeking, or where attributes and aspects are specified, providing a holistic, high-level perspective. Consequently, we concluded that there was an all-encompassing model that will look at the following information seeking components relevant to this study:

* ISB of Law Students;
* ISB of students using Smartphones;
* Attributes of contextual ISB;
* Attributes and ISB of both work-based and social/casual-based needs.

Existing studies within this field have identified the need for more research on 'user-centred' approaches. 'Experimental realism' has been identified as key to helping understand individual ISB relating to a particular context[26].

RESEARCH METHODOLOGY

The research data for this project will be collated in three different parts:

Qualitative Data

* **Part I – Law Librarian Interview**: this will be obtained through interviews with subject (law) librarians with questions being gauged to give feedback on the departmental challenges relating to students' use of Smartphone's within the legal information retrieval context, organisational strategies, and resource provision. The aim of the research will also be to provide a customer perspective on the numerous electronic resources; e.g. Lexis, Westlaw, JSTOR and BIALII to name just a few.

Quantitative Data

There are two parts to the collection of quantitative data which seek to take into account undergraduate, postgraduate, research and CPD students in order to provide a comprehensive perspective of the law student body. The two parts are:

* **Part II – Student Smartphone**: a multiple choice questionnaire designed to provide insight into the Smartphone device preferences of law students, the general use made of these devices and the associated usability patterns in daily student activities. This will deliver data on students' Smartphone feature preferences and usage patterns.

* **Part III – Student Search Study**: a more open-ended questionnaire intended to provide an insight into the ISB of Law Students when they are required
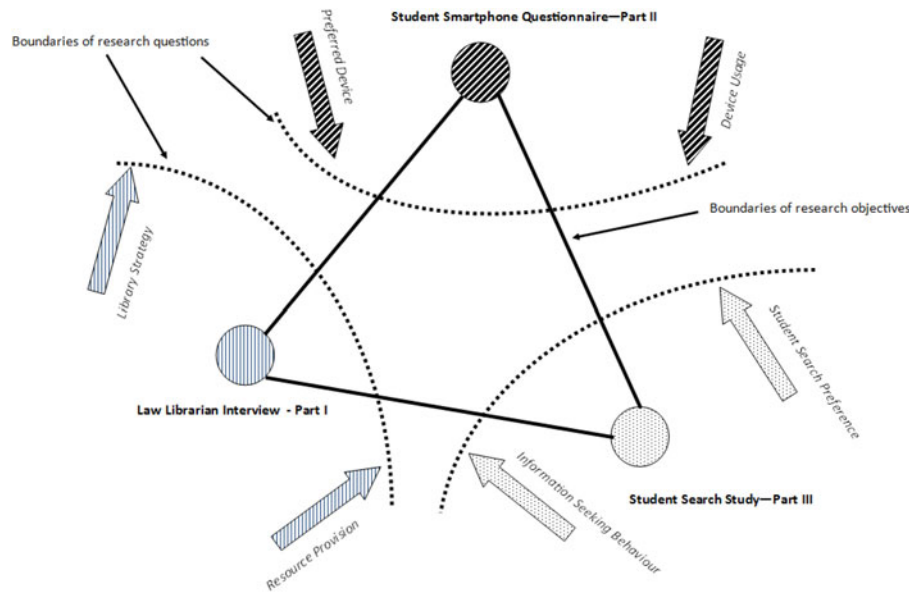
Figure 1: Triangulated Research Approach.

to seek academic legal information for a course assignment, project or piece of research. The data from this will provide background on the resource preferences of law students, their associated reasoning, as well as their general ISB.

Participating HEIs have been asked to provide 10–15 students to take part in both questionnaires, though the same students do not have to part-take in both sets of questions. This is to provide a task-oriented approach within the scope of the situated experimentation[26]. Data from all three parts will be fed back to the original HEI from which the results were obtained, additionally the collective and anonymised data will be shared with all of the HEIs taking part in the study.

The components of the research can be illustrated graphically in Figure 1 above and will be used in a triangulated form to provide focus on the core area that pose the primary research question;

"How are Smartphones affecting the information seeking behaviours of Law Students in Higher Education in the UK and what does this mean for Higher Education Institutions, Information Service Providers and the legal information industry?"

In the diagram, the dotted lines indicate the outer boundaries of the research questions, which will help guide all three parts of the research to concentrate within a certain area. This has been done so as to prevent the research from suffering 'scope creep' (i.e. uncontrolled changes or continuous growth in a project's scope). Furthermore, the straight black lines indicate the inner-boundaries, which are the limits within which the research objectives will be applied. In using this method, the research questions will

help provide the framework and then the objectives used to emphasise the goal of the study.

How many HEI are participating?

According to the Higher Education Statistics Agency (HESA) there were over 2.3 million students in higher education in the UK as of 2012/2013[17]; this figure included undergraduate and postgraduate students at the 130 Higher Education Institutions (HEI) throughout England, 9 in Wales, 18 in Scotland and 4 in Northern Ireland[18]. Over 25 HEIs all with law students, have agreed to participate in this research; geo-strategically sought to illustrate a fair picture of the UK student body (Fig. 2). Within this cohort group there are;

- 19 HEI classed as "Old Universities"[x] *[of which 11 are part of the Russell Group]*

- 6 HEI classed as "New Universities"[Y] *[of which 1 is part of the Russell Group]*

The number of participating institutions is welcomed and it is hoped that this large quantity will provide an informative illustration of Smartphone general usage habits by law students. It will also give insights into their libraries' approach to mobile devices, and e-resource and mobile virtual library provision for their users.

As already mentioned, the responses by each respective institution will be anonymised to respect individual privacy. Ultimately the data from each element of the research will:

- Provide HEIs with an insight into the ISB of their students achieved by using research Part II and Part III.

- Offer Law Students a forum in which they can voice their opinions, concerns, preferences and thoughts on

177

the effective use of Smartphone technology to deliver academic based information, using research Part II and Part III.

- Potentially deliver a dedicated national forum from which they can voice their opinions on Smartphone use by students within the library, the use of resources both non-electronic and electronic, as well as mobile virtual library provision, using research Part I, Part II and Part III.

- Contribute towards awareness in HEIs into what resources are most popular with students and why, from both the law librarians perspective and that of the students themselves, using research Part I, Part II and Part III.

- Afford legal information providers some 'value insight' into what law students want to see on their Smartphones and why, using research Part II and Part III.

- Make prospective employers aware of the information seeking habits of the future legal practitioners and allow these establishments to better prepare themselves for catering, from an information perspective, to their future employees when they arrive at the professional workplace (using research Part I, Part II and Part III).

Preliminary Research Findings

From within the 25 HEI cohort, subject librarians from 3 institutions were approached regarding their initial participation in the qualitative research component. All three HEIs were classed as 'Old Universities' with one of them

Figure 2: HEIs: Geographical Representation.

being part of the Russell Group.

Their responses to the 'Law Librarian Interview' questionnaire provided insightful feedback. The same HEIs were also approached for participation in Part II and Part III, however due to the examination commitments of their students at the particular time in the academic year, their participation in the latter two components was not possible. However, participation in Part II and Part III will commence with the entire cohort of HEIs from October 2014 onwards and it is the intention that the anonymised results would be published in LIM in the future.

Feedback for Part I has also provided some interesting points for discussion including some differing perspectives on students' use of library resources in relation to Smartphones, and the librarian's own perceptions on Smartphone use within the library domain. However, consistent comments have already emerged concerning the poor research skills that students possess and the need for further training to alleviate this. It is obvious that there is a need for HEIs to actively look into the ISB of students as a result of increasing Smartphone usage and information service providers should be more creative in producing more user-friendly and mobile friendly interfaces for their systems.

Overall the use of Smartphones has been welcomed by those subject librarians who were interviewed with remarks such as;

- *"Smartphones alleviate the pressure on the institution to invest in other library-associated hardware such as books scanners since Smartphone apps can allow students to scan books out"*[6]

- *"Smartphones allow students to access library resources at a place and time suitable to them, relieving libraries of the need to stay open for extended periods"*[5,6,7]

- *"Smartphones will give students the opportunity to access library resources without having to consult the traditional desktop PC, thus allowing libraries to use this desktop space for other much needed activities"*[5,6,7]

THE NEXT PHASE OF THE STUDY

The interviewing of subject librarians from the participating HEIs to cover Part I will continue throughout 2014 until 2017 and during this period this research project hopes to build up a large amount of responses and identify possible groupings of answers.

The first run of the survey of law students, to cover Part II and Part III of the research, will commence in earnest during October 2014 and will last through to January 2015. The questionnaires are devised in electronic format and are Smartphone-interface-compatible, thus allowing students to be able to complete them quickly**.

During this time various questionnaires and studies will be conducted in conjunction with the participating HEI, it is hoped that the longitudinal nature of the

research method will provide a richer content which can then be used on an ongoing basis to inform information service providers and HEI on the ISB of students – key markets of concern to both stakeholders, and also to capture differences in behaviour as changes to technology take place over this period of time.

SUMMARY AND INITIAL OBSERVATIONS

Although this research project is still in its infancy, the initial empirical research has found that subject librarians welcome the use of Smartphones within the library domain, citing that these devices provide flexibility and mobility in relation to students' information needs as well as potentially alleviating pressure on libraries to extend opening hours or to providing additional desktop terminals.

However, librarians have expressed reservation at the dependence on these devices in relation to the use of web browsers to retrieve academic information, pointing out that professional, dedicated resources are over-looked, often resulting in students not being able to retrieve the right quality of information their subject assignment may deem. Furthermore, librarians have pointed out the ample evidence of students generally possessing weak research skills. Recommendations at this stage are for greater interaction between the information service vendors and the HEIs to provide a content rich, yet aesthetically Smartphone-friendly, electronic library that would provide students with access to the extensive information resources available without causing user-frustration or vendor collective bias.

It is hoped that further investigation from wider participants will provide a fairer, diverse yet identifiable trend set that could serve to inform universities, students, vendors of e-resources and virtual libraries as well as the legal industry about how this relatively new and ubiquitous technology is disrupting the environment that concerns them all.

Footnotes

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179

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The Russell Group is a 24 strong group of HEI throughout the UK committed to strengthening research, teaching and learning ties. (Source: http://www.russellgroup.ac.uk/)

X: Old Universities are defined as HEI founded prior to 1992

Y: New Universities are defined as HEI founded after 1992

** Questionnaire using E-SurveyCreator survey tool and testing of questions were conducted on desktop, laptop and Apple i-Phone 4S and Apple i-Phone 5C Smartphones

Biographies

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Ayşe Göker is a Professor based at Robert Gordon University in Aberdeen. She has over 20 years of research experience in areas including context-learning algorithms, web user logs, personalization and mobile information systems. Her work involves a strong user-centred approach to algorithm and search-system design, development and evaluation. Professor Göker also holds a lifelong Enterprise Fellowship from the Royal Society of Edinburgh and Scottish Enterprise for previous commercialisation work.