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Reclaiming Knowledge: A Case for Evidence-Based Information Systems.

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Abstract: Both the information base, on which IS research and practice is founded, and its accessibility continue to grow rapidly. A major challenge facing the IS community in the next decade will be discovering how to extract knowledge, useful to, and usable by, all in the community, from this fragmented, disparate, often conflicting and sometimes unevaluated resource. This challenge is not unique to IS, and the concept of 'evidence-based' practice is already used by the healthcare community to address these same issues. Emerging as a considered response to the increasing need for efficient and effective use of resources, evidence-based healthcare relies heavily on the timely dissemination of 'best evidence' to a wide audience of health practitioners. A formal methodology for the critical appraisal and systematic review of primary research has been developed and, through the Cochrane Collaboration, has become an important means of synthesising and disseminating information to inform practitioners' and managers' decision-making. Here, we explore the application of the fundamental elements of evidence-based healthcare to IS.

We define 'evidence-based Information Systems' (EBIS) as a mechanism for facilitating informed decision-making and providing indications of valuable research directions through the promotion of conscientious, explicit and judicious use of current best evidence, as determined by the rigorous evaluation and synthesis of all relevant evidential sources. The provision of the results of such evaluations and syntheses in the public domain is also promoted as something from which managers, practitioners and researchers would all benefit. This research initiative, which is in its preliminary stages, does not expect to establish a formal methodology or to undertake systematic reviews in isolation, rather it hopes to facilitate and coordinate such work. Hence, through this paper we hope to generate debate on the principles underlying this initiative, to highlight the issues that currently appear important and to solicit active support for advancing the concept within a broader arena.

THE CHALLENGE

*Where is the wisdom we have lost in knowledge?
Where is the knowledge we have lost in information?*

T.S. Elliot, "The Rock" 1934

Elliot's unwittingly prophetic questions serve as a pertinent challenge to the Information Systems (IS) community. Academic research of varying quality and relevance, 'expert' opinion of varying degrees of bias and practical experience reports are accumulating at an ever-increasing rate. Concomitant with this rapid growth in the 'information base' has been an unprecedented growth in the availability of the information, often, enabled by the Internet, in an unevaluated and uncontrolled form. This proliferation, of both information and the means of accessing it, is not necessarily problem-

atic *per se* but it does become a problem when it acts as an effective barrier to careful and considered decision making or, if important and useful contributions to an area are obscured by conflicting, unsubstantiated or uncorroborated claims of effectiveness.

There is an anecdotal perception, among the non-academic IS community, that IS practice, driven by the need to provide effective solutions to tight deadlines and within predetermined budgets, cannot afford to wait for the more reflective and tentative findings of academic research. However, even where a practitioner does attempt to keep abreast of current academic findings, the exercise is likely to be difficult and ultimately unrewarding, as even the researchers note the confusing, contradictory and disparate nature of some IS research (e.g. [1] and [2]). In this situation, heuristics may well be used to reduce the problem to a more manageable level, even if this results in decisions being made on the basis of incomplete knowledge. In addition, an acceptance of prevailing practice and peer opinion may also influence the final choice. Many decisions, covering the full spectrum of IS practice, may thus be based, not on clear evidence of efficacy, but on personal familiarity, individual experience, astute marketing or current fashion.

For academic researchers too, the volume of information can, at times, present a considerable barrier to gaining, or maintaining, a comprehensive view of relevant research and practice reports in their own speciality and related areas. One response to this is an increasing reliance on integrative literature reviews; as [3, p.5] points out, "regardless of the cognitive capacities of scholars, expanding literatures require the periodic collecting, evaluating, and integrating of scholarship in order to bring coherence and perspective to a problem area." The problem, in itself is not new. In 1971, [4] observed the same phenomenon in science and in 1977, [5] reported that in the social sciences, literature reviews were among the most frequently cited documents. What is new is the increased scale and scope of the problem, which makes even the completion of substantial and reliable reviews difficult, if not impossible. It has been estimated that over two million articles are published annually in over 20,000 biomedical journals [6] and while we have been unable to identify corresponding figures for IS, we suggest that at even a tenth of these figures, the challenge is very real.

THE BACKGROUND

The IS community is not alone in facing this challenge. The healthcare community, particularly in the UK have faced

significant changes in the organisation and management of healthcare services [7,8] coupled with unprecedented pressures on costs. Together these have led to a new awareness of the cost of treatment, the limits to resources and the absolute need for efficient and effective use of existing resources. Expectations of medicine, and of healthcare generally, have also increased while the role of the patient as a passive recipient of treatment has been increasingly challenged [9]. At the same time, research results have continued to accrue rapidly and to provide a steady stream of new knowledge [10,11]. Finding, assimilating and using this knowledge effectively is essential, but constitutes a very considerable burden. One response to these conditions has been the growing acceptance of the phenomenon of evidence-based medicine (EBM) (e.g. [12,13]) and the wider trend of evidence-based healthcare (EBHC), as witnessed by a spate of exploratory and explanatory articles (e.g. [14,15,16,17]), a variety of new journals, as well as the appearance of a number of organisations which collate, produce and disseminate evidence-based information (e.g. the National Health Service Centre for Reviews and Dissemination (NHSCRD), The Cochrane Collaboration).

EVIDENCE-BASED PRACTICE

Evidence-based medicine has been described as “the conscientious, explicit and judicious use of current best evidence in making decisions about the care of individual patients”[14] which “involves evaluating rigorously the effectiveness of healthcare interventions, disseminating the results of evaluation and using those findings to influence clinical practice” [18]. Evidence-based healthcare extends the principles and practices of evidence-based decision making to other health professionals, managers and consumers. It seems reasonable to suggest that strategies that have proved successful, and are becoming increasingly acceptable, in the healthcare arena may have a potential application in IS. Indeed, there is already evidence of their application to health based Information Systems [19].

However, there are a number of differences between the practice domains of IS and healthcare. Much IS work, for example, is specific to an organisation or to a system and is focussed on the need to gain or maintain a competitive edge. New knowledge in IS may also be proprietary and there may be economic disincentives to releasing it into the public domain. In addition, it might be argued that the rate of technological change quickly renders past IS practice irrelevant, although healthcare also faces this challenge and yet still finds value in its past. The nature of the practitioners themselves also differs. Unlike their healthcare counterparts, IS professionals are not always required to be ‘licensed to practise’ or expected, as a normal part of their work, to be familiar with the latest research findings. In summary, the predominantly competitive culture of IS may obstruct the take-up of some elements of evidence-based practice.

In research, too, there are differences that will require exploration and careful consideration. This paper makes mention of the diversity of appropriate research methods in IS and the consequent need to relate research evidence to the appropriate theoretical base, but does not attempt to enumerate or discuss all the differences in detail. Instead, we argue that

while the differences are real, they do not undermine the potential of EBIS but instead serve to highlight some of the adaptations to the EBHC methodology that its adoption by IS would require and the challenges that the IS research community must anyway face.

A significant amount of similarity also exists. IS professionals too are concerned with the effective use of resources and are faced with a bewildering amount of conflicting guidelines and statements of best practice. Consequently, there is a real danger that critical decisions may be based on incomplete or untested ‘knowledge’ and that considerable effort may be invested in re-inventing, if not the wheel then certainly, the internal combustion engine. As with healthcare, both commissioners and consumers of information systems have increasing expectations of the quality and complexity of those systems and while the consequences of failure may not be literally fatal, they can often be severe. While recognising that they do not offer a panacea, we would argue that the IS community has much to gain by studying, adapting and adopting evidence based strategies

POTENTIAL BENEFITS

The benefits of an evidence-based culture in Information Systems would stem from the successful achievement of a number of objectives, in particular those of well-informed practitioner behaviour and well-informed research directions. The importance of this has been identified,

“Scholars in the IS field are characteristic in that they must be concerned to generate valid knowledge which can, at least in principle, be informative to practice. Scholars in IS are expected to substantiate their contributions to practical knowledge by showing which contextual areas can benefit. Likewise, any practitioner is expected to justify their knowledge-seeking and generation activities against measures of the practicability of outputs” [20 p.14].

One primary goal would be to provide an easily accessible knowledge base, across a broad spectrum of IS issues, in the public domain. This knowledge base would provide a critical synthesis of both the latest findings of academic research and the current ‘best practice’ thinking of practitioners. It would be hoped that this would become the resource of first choice for anyone wishing to discover what are currently considered to be the most effective solutions for specific IS problems. Arguably, the Internet already provides such a resource, although due to its eclectic nature, it is more appropriate to consider it as part of the problem. One major difference between the information, as it is currently available, and the evidence-based practice, proposed here, is the extraction, critical evaluation, synthesis and dissemination of knowledge from both web-based and non web-based information.

The creation of such a validated and critically appraised knowledge base would not only serve the IS practitioner community. By providing validated summaries of existing work, it would assist in defining the boundaries of current knowledge. Areas of non-existent, inadequate or out-of-date knowledge could be more easily recognised. It could therefore become a useful indicator of the relevant and timely

research directions, encouraged by researchers such as [21] and [22] and assist academics in setting new research priorities. Conversely, it could also highlight areas where research efforts, often confounded by ill-defined terminology, may be unnecessarily duplicated. In addition, researchers could use the knowledge base to inform not only their research focus but also its quality, by assisting them to “identify, justify and refine hypotheses; recognise and avoid pitfalls of previous work; (and) estimate sample sizes...” [23 p2].

SYSTEMATIC REVIEWS

An essential component of EBM is the production of systematic reviews, to “efficiently integrate existing information and provide data for rational decision making” [23 p1]. The world literature relevant to a specific, research question is accumulated, appraised and evaluated. The individual studies, which emerge from this process as relevant and usable, present a robust set of valid evidence, which may be combined, statistically where appropriate, to provide an unambiguous answer to the original question. Outcomes from the review may also be guidelines for clinical practice, or recognition of the need for additional primary research.

A number of factors contribute to the success of a systematic review. The original question is tightly focused to a specific, answerable question, with clearly stated objectives. Typically, these questions cover such areas as the effectiveness of care for specific conditions, the effectiveness of health technologies or economic evaluations of methods of organising and delivering particular types of health care. The literature search needs to be as comprehensive as possible and a variety of search strategies are used. This enables the world mass of literature to be accessed, sifted and obtained in either abstract or full form, to assess for relevance to the question. As on-line databases provide only a proportion of available papers, hand searching of journals, textbooks and ‘grey’ literature (including conference proceedings and theses) are undertaken. Previously established and explicit inclusion and exclusion criteria are applied to all the studies which are considered relevant to the research question and while only those which meet the inclusion criteria are considered further, comprehensive lists of all studies identified, including those excluded (together with justifications for their exclusion) are maintained and become part of the final report. For those studies which are to be included in the final review, the methodological quality of each is detailed according to established criteria. The findings of this final group of acceptable, eligible studies are then combined.

Systematic reviews are produced by a means of a prescriptive formal methodology, which aims to eradicate systemic and random errors as well as bias. They can establish whether findings are consistent and can be generalised across populations, settings and treatment variations, or whether findings vary significantly by particular sub-sets [23]. They integrate potentially unmanageable amounts of information and through critical exploration, evaluation and synthesis separate the insignificant unsound or redundant from the salient and critical studies that are worthy of reflection [24]. Thus, although systematic reviews are labour and time intensive projects of secondary research, the benefits are substan-

tial and add considerable value to the primary studies on which they are based.

The methodology relies heavily on the existence of a large body of high quality, scientifically designed studies, particularly randomised controlled trials (RCTs) and on the use of formal statistical methods for combining the results of these studies. Data of this kind is sparse in IS and it is tempting to assume that meaningful systematic reviews in this field may be too difficult to conduct and therefore have little to offer. Certainly, it is unlikely that systematic reviews of IS research would have the rigour of their clinical counterparts but there is still much to be gained by this approach. It is clear from very recent publications that areas such as social policy [25] and education [26] are also beginning to recognise the value of the concept of evidence-based practice and with this must come the need for reviews which attempt the synthesis of less scientifically based studies. While the need to develop good evaluation strategies specific to the needs of IS is a challenge, it should anyway be a concern of the IS research community.

THE INFRASTRUCTURE

The conduct of rigorous systematic reviews is clearly a non-trivial and time-consuming activity that requires a high degree of expertise among the reviewers and active support from experienced practitioners. In order to make effective use of these resource intensive activities, an infrastructure is required to support not just the conduct of systematic reviews but also the wider concept of evidence-based practice.

Figure 1 summarises some of the elements that such an infrastructure may require. The list is not intended to be exhaustive or exclusive but seeks to identify a framework in which evidence-based IS practice could grow. Each of these elements is described more fully below but the issues surrounding them have not been fully researched. These comments are representative of our current thinking and are offered to stimulate further thought and discussion rather than as a comprehensive and immutable approach.

- a) An appropriate systematic review methodology.
- b) Critical appraisal guidelines.
- c) A recognised coordination mechanism
- d) A library of accessible and maintained databases of
 - current reviews
 - on-going reviews
 - review updates
- e) Validated and appraised good quality studies
- f) A strategy for creation of usable practice guidelines

Figure 1. Proposed Infrastructure Requirements

An appropriate systematic review methodology

While the formal methodology of the NHSCRD provides a useful framework there are aspects of it, particularly those related to the assessment of validity of findings and quality of studies, that are unlikely to be suitable to the review of IS research. The ‘hierarchy of evidence’ illustrated at Figure 2 allows for the grouping of study designs according to their validity or to the degree of bias to which they are susceptible.

“This hierarchy indicates which studies should be given most weight in a synthesis” [27 p86] with well designed RCTs placed at the top of the order and observational studies and expert opinion at the bottom. However, there are few, if any, true examples of controlled trials in IS research and many IS studies would come from the lower levels of such a hierarchy.

I	Well-designed randomised controlled trials
Other types of trial:	
II-1a	Well-designed controlled trial with pseudo-randomisation
II-1b	Well-designed controlled trial with no randomisation
Cohort Studies	
II-2a	Well-designed cohort with concurrent controls
II-2b	Well-designed cohort with historical controls
II-2c	Well-designed cohort (retrospective study) with concurrent controls
II-3	Well-designed case-control (retrospective) study
III	Large differences from comparisons between times and/or places with and without interventions
IV	Opinions of respected authorities based on experience; Descriptive studies Reports of expert committees

Figure 2. An Example of a Hierarchy of Evidence [27]

While a case study or a piece of action research can never be as unbiased or as unprejudiced as a randomised controlled trial, well conducted research of this kind may be as, if not more informative than a poorly designed controlled trial [20]. As [21] has pointed out, different forms of research activity are appropriate to different types of research question and therefore a variety of ‘hierarchies’, each one specific to a particular type of question, are likely to be required. Although in its early stages this situation is also being tackled by the healthcare community and a group of researchers, led by Jennie Popay at the University of Salford, are actively exploring the ways in which qualitative research studies can be addressed [28]. Quite apart from the needs of the systematic review methodology, the development of ‘hierarchies of evidence’, which rank research and weigh its results on the basis (among other things) of the study design, is likely to be generally beneficial.

Another element in the success of such a methodology would be the development of useful and useable search strategies such as [29]. Unlike, the healthcare community which has various online databases (e.g. MEDLINE) as starting points, the reports of IS research are widely dispersed. Useful bibliographic databases do exist, but they are by no means as extensive or as comprehensive as those available to medical researchers. Search strategies for different types of question would need to be tailored, partly to address the varying research design and partly to address the scope of the question under consideration and there may even be a case for the development of a specialised search.

Clearly, the development of the details of a systematic review methodology will require careful thought and considered input from experienced IS researchers. It is not envisioned that a definitive methodology will be developed prior to its use. Indeed, it is the hope that such methodology refinement

would become an area of on-going research. However, the adoption of an initial framework adapted from that formulated by the NHSCRD, is a necessary pre-requisite for this development and a fundamental element in the creation of an evidence-based infrastructure.

Critical appraisal guidelines

There is little purpose, however, in establishing a methodological framework if there are no clear guidelines on the criteria for critically appraising the studies which are to be reviewed. Some excellent guidelines exist for the kinds of studies that have been commonly the subject of clinical systematic reviews (e.g. [30,31]) and there is on-going work on guidelines for other types of research. However, given the broad range of research methods that are used within IS, this is not likely to be sufficient. Fundamental to the success of any formal systematic review of IS work will be the existence of appraisal guidelines for a variety of research methods, and accepted ‘hierarchies of evidence’ appropriate to a variety of IS questions. There is already a growing interest, among IS researchers, in these areas and some useful work has been done (e.g. [32,20,33,34]). The need to construct such guidelines will focus attention in this area, which is likely, in itself, to benefit the wider IS research community.

A recognised coordination mechanism

“The Cochrane Collaboration is an international network of individuals and institutions committed to preparing, maintaining and disseminating systematic reviews of research assessing the effects of health care” [27]. It grew from international efforts made between 1985 and 1990 to collate and review various controlled trials relating to pregnancy and childbirth. The Cochrane Collaboration, officially inaugurated by the 1st Colloquium, was consolidated by the creation of the first Cochrane Centre in 1992 with funding from the British National Health Service. By 1999, the Cochrane movement, overseen by an elected Steering Group, had grown to include 16 Centres including ones in Australasia, Canada, US, Brazil, China and Europe, and provided support for over 40 collaborative review groups, each focussing on a specific health care area, and various methods groups specialising in a particular methodological area [35].

Since its inception the basic principles of the movement have remained as, collaboration; building on the enthusiasm of individuals; avoiding duplication; minimising bias; keeping up to date; ensuring relevance; ensuring access; continually improving the quality of its work; and continuity. A fuller description of the Collaboration is not appropriate here but this outline has been included to provide a vision of the form of international cooperation to which the IS community could aspire.

An accessible and maintained database

The primary purpose of the Collaboration has been to disseminate the findings of the systematic reviews under its auspices. The Oxford Database of Perinatal Trials, first published in 1989 became a six-monthly electronic journal committed to maintaining an updated review of all relevant controlled trials. This became the conceptual basis of ‘The Cochrane Database of Systematic Reviews’ officially launched in

April 1995. A year later it was incorporated into 'The Cochrane Library' together with 'The Database of Abstracts of Reviews of Effectiveness', 'The Cochrane Controlled Trials Register' and 'The Cochrane Review Methodology Database' and made available on the Web.

A major strength of this library has been not just the accessibility it provides to a huge amount of 'knowledge' but also the implicit 'quality mark' that such 'knowledge' carries. In addition, the 'right of reply' that is provided to authors of reviews, the original researchers and others with an interest in the area of the review, ensures an on-going and useful debate. The creation of a database of equivalent stature for the IS community would be an immensely valuable contribution not only to the creation of a culture of evidence-based IS practice but also to IS research in general.

Strategy for creation of usable practice guidelines

The ultimate aim of the work of the Cochrane Collaboration has been to provide effective guidelines for healthcare practice and to maximise the possibility of these guidelines being adopted. However, as their brochure comments,

"Universal guidelines and prescriptions for the precise application of the evidence are neither wise nor workable. Local...barriers to implementation vary widely from country to country and from place to place within countries, and local attention to these issues will help to ensure that the evidence will help those who can best benefit from it" [35].

Similar concerns will also be raised in connection to the development of IS practice guidelines. It is generally recognised that there is no one 'correct' approach to most IS situations, although the quest for the 'magic bullet' sometimes appears to still exist. However, the needs of different ethnic and organisational cultures together with the diverse objectives of much IS development have ensured a piecemeal approach to establishing 'best practice' guidelines. Strategies for creating and disseminating guidelines, based on high quality evidence and created by those closest to the target domain, would help to establish both the rationale and the credibility of EBIS.

THE WAY FORWARD

This paper has provided a necessarily simplified description of the evidence-based concept as it has been adopted and advanced by the healthcare community. Largely by analogy, the potential for applying evidence based thinking to IS has been explored with the intention of encouraging consideration of the concept within the context of Information Systems. Clearly, there are differences between the two communities, some of which have been discussed here.

However, to answer the very real challenge that accelerating technological change is creating, the IS community must find ways of extracting and utilising pertinent knowledge from the ever-increasing information that is being generated. The solution that has been proposed here is undoubtedly ambitious and will not proceed without the support of respected IS researchers and influential IS practitioners, in an international forum. We accept that the acceptance and creation of

an EBIS culture will not happen overnight and will require a significant input from many enthusiastic volunteers. Nevertheless, if it is to become a reality, it has to begin somewhere. To this end, we have currently identified the following major aspects to a strategy that we believe will provide a practical starting point.

Initial Coordination

The Centre for Information Systems Research and Development (CISRD) at Massey University, New Zealand is prepared to provide initial coordination for this research initiative. A web site is already accessible from the CISRD pages (<http://fims-www.massey.ac.nz/~is/centre/>).

This initial coordination will include,

- maintaining the EBIS web-site,
- providing and maintaining a Register of Interest,
- facilitating communication between interested parties,
- providing and maintaining an on-line register of on-going projects and initiatives,
- coordinating the work of groups, and
- seeking and following up opportunities for publicity and funding.

We would hope that this work would eventually become the responsibility of an independently funded EBIS group, perhaps under the auspices of one of the existing international IS networks.

Interest Groups

The Cochrane Collaboration has supported the creation of various volunteer groups and we suggest that a similar strategy would be of use to an EBIS community. We suggest that the following would be useful.

Methods Groups.

These would consist of individuals with an interest and expertise in the conduct of systematic reviews, who would provide advice and support for the development of the methods used in the systematic reviews process. Such groups might include, statistical methods and qualitative research methods.

Collaborative Review Groups.

These would be made up of individuals who share an interest in developing and maintaining systematic reviews relevant to a particular IS area. Groups would be coordinated by a small team, who would eventually have responsibility for, among other things, making the results of current reviews accessible and ensuring that reviews are updated. Such groups might include, for example, e-commerce, requirements engineering, system development methodology and business process re-engineering

Projects

We have currently identified four broad themes of required work. All of these themes are high-level and wide-ranging and, consequently, there are a number of potential projects within each one. Please note that the themes themselves are very broad and we are currently working on, and would welcome input on, how these could be further refined into manageable exercises.

Identify and investigate currently available resources.

Within the healthcare community, the Cochrane Collaboration has grown to provide an international network of both individuals and institutions committed to preparing, maintaining and disseminating systematic reviews of research. Some form of coordination mechanism is required if EBIS is to become an effective element in Information Systems. However, there is clearly a huge amount of existing information and a number of existing structures that could be utilised in pursuit of our objectives.

We envisage projects that would,

- critically appraise elements of 'evidence-based practice' in healthcare and their applicability to IS,
- identify and classify sources of IS 'evidence' (including both evaluated and non-evaluated resources such as journals, conference proceedings, on-line resources – and including non-English publications),
- investigate the feasibility of creating an on-line register of current research,
- investigate how far existing networks could (and would be prepared) to coordinate this work,
- investigate whether current international networks and resources, such as IFIP (www.ifip.or.at) and ISWorld (www.isworld.org) for example, could be used in support of EBIS.

Methodological issues

Most of these issues are concerned with the development of a suitable methodology for the systematic review of the literature. While the methodology used within healthcare seems to offer a useable framework there is a significant amount to be done in determining the details appropriate to IS research. For example, many of the early 'systematic reviews' of medical literature were concerned primarily with combining the results of randomised controlled trials and it is only relatively recently that initiatives have started to address the specific problems of qualitative research results.

The nature of IS research is very diverse and different research methods are accepted as appropriate to different types of IS research questions. Consequently, different 'hierarchies of evidence' and critical appraisal guidelines will be required depending on the kind of question under consideration. Projects will need to

- investigate the potential for and specify comprehensive search strategies (and tools) for the general body of evidence,
- develop 'hierarchies of evidence' for different IS research questions for both academic and practitioner sourced literature. This would require the construction of a taxonomy of the methods used in IS research and their appropriateness to particular kinds of research,
- develop guidelines for the critical appraisal of the different kinds of research identified within the 'hierarchies of evidence',
- develop guidelines for the synthesis of evidence within a systematic review.

Dissemination issues

There are two broad areas related to dissemination. Firstly, there is the need to ensure that the results of formally conducted systematic reviews are freely available to the widest possible audience at the minimum cost. Secondly, there is the need to promote the concept of EBIS itself within the IS community and to encourage cooperation and collaboration. Productive projects would thus,

- investigate effective methods of making review results available,
- investigate the feasibility of creating an on-line 'library' of EBIS literature, including the results of reviews,
- investigate effective methods of promoting the EBIS concept.

Conduct of pilot systematic reviews

Although likely to offer results of only limited use, the conduct of several pilot systematic reviews could be useful for several reasons. Firstly they could provide feedback on the conduct of IS systematic reviews. Secondly they would highlight areas of methodological difficulty and concern, some of which we expect to occur in the areas of 'hierarchies of evidence' and 'critical appraisal guidelines'. Thirdly, they would demonstrate the potential of EBIS to interested parties in the IS community and help to raise the profile of this initiative. It will also be necessary to identify suitable subjects for review that would also be of most interest to the IS community.

The questions that are considered by these pilot reviews are probably less relevant than the opportunities that they provide for testing the methodology itself. Topics for pilot review therefore need to be both carefully scoped and achievable and we encourage those that either trial the IS systematic review methodology, and/or demonstrate the potential value of EBIS.

CONCLUSION

There appears to be little to lose and much to gain by exploring, modifying and testing the more promising strategies, and planning for the creation of an infrastructure within which a culture of evidence-based Information Systems could not only develop, but also flourish. As members of the IS community, one of our major roles must be the effective and useful management of information. We cannot afford to ignore the challenge to reclaim the knowledge that is in danger of disappearing under the inexorable tide of information. The intention behind this proposal thus springs from the desire to improve the quality of both IS research and practice and not from any desire to restrict, control or dictate. As [13] observes "we must keep our eyes focused on the real prize, which is not whether we synthesize evidence and use it, but rather, whether the health of our patients, as they define it, improves."

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