iCyte

WHY CYTE?

How iCyte addresses the challenges of Web-Based research

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Why Cyte?

Abstract

This paper begins by acknowledging the enormous benefits that have come with the internet, but goes on to argue that our ability to engage effectively with the internet and vast amounts of web-based content available is constrained by the inadequacy of the tools we have to search, retrieve, and manage data. The paper evaluates these tools, notably bookmarking for saving the location of sites, copy and pasting text to save information, and the creation of pdf's for storing and searching this information. Outlining the limitations of each of these tools, the paper goes on to demonstrate how iCyte provides a solution that is effective, and while simple to use, sophisticated enough to meet the requirements of professional researchers. The paper concludes by arguing that iCyte has the capacity to revolutionise the way we use Internet, allowing users to more fully utilise the enormous resources the web makes accessible.

Introduction

Central to understanding the value of iCyte is an appreciation of how the complexity and size of the internet shapes our engagement with online content. This paper outlines these issues and provide a context for understanding how iCyte is best utilised.

Emerging questions about the impact of the Internet

Without question the Internet has profoundly re-shaped the terrain of ordinary life. We almost take for granted this vast repository of knowledge, its accessibility and its benefits, all of which have been widely appreciated.

However, in what is a thought provoking article, Nicholas Carr asks, "Is Google Making us Stupid?" His argument revolves around the idea that the volume of information available and the way its delivered has the potential to change the way we think, pushing us to absorb information in ways that are essentially transitory and superficial.

> So while Google have gone a long way to fulfilling their mission of making information accessible, the inadequacy of the tools available continues to compromise the usefulness of the Internet.

Carr does not hesitate in acknowledging the great benefits of the Internet. He is quick to point to the very admirable mission of Googles' developers, of wanting to "organize the world's information and make it universally accessible and useful."[1] However he continues to wonder about the impact of the Internet. He is particularly critical of the economics that make everything about volume, by which he means 'web-traffic' or 'number of hits'. The assumption that decreasing the size or amount of information leads to increased consumption, has resulted in a market that seeks to deliver information in smaller and smaller packets. Twitter is perhaps the most disturbing example of this trend towards brevity in content. Speed and the imperative to keep moving become the norm, and the primary mechanism for managing the amount and complexity of the information available.

I don't disagree with Carr and my own experience of web-based research reflects this experience. I notice I move skittishly from one article to the next, following hyper-links and jumping from page to page as I skim the surface of ideas. While I attempt to hold in mind the path my search has taken, so I can retrace my steps if I need to, more of-

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[1] http://www.google.com/corporate/

ten than not I simply lose or forget about an webpage I fleetingly thought I might go back to. The push to keep moving forward is often just too compelling.

Certainly the way the information is packaged and the sheer ease of accessibility contributes to the problem. I am old enough to remember that pursuing a footnote once required actual physical movement, literally getting up from a desk and looking for the journal or book in question. Clicking on hyper-links requires no such effort, and the pleasure of such immediate gratification is not to be underestimated.

However I don't think the difficulties are just about volume. I suspect the tools we have for tracking and saving information also contribute to the problem. At best they are blunt and rudimentary, lacking the sophistication to manage this vast and complex universe of data with ease and efficiency.

So while Google have gone a long way to fulfilling their mission of making information accessible, the inadequacy of the tools available continues to compromise the usefulness of the Internet.

Let me explain further.

The Tools we Have: Bookmarking

Following a line of thought and moving from one article to the next, I quickly end up a long way from my starting point. Aware that I may well want to retrace my steps, I tend to open new windows, or trust in the efficacy of the back button. Aside from the fact that this is a linear process, and therefore limited, it's not a reliable strategy. Accidently closing a tab in the browser is very easy to do, and once that happens, the trail of

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crumbs is much harder to find. Of course I could access the browser history, though interestingly, I rarely do.

Bookmarking has been the standard option for saving links to webpages. It would be possible, when searching, to leave a trail of bookmarks. However this is a clumsy solution and counterintuitive to the idea of research being effortless. At best bookmarking is cumbersome, hardly intuitive, and rarely simple. I'm never even certain I've saved the right link, and more often than not I can't find the bookmarks I have saved. This of course could be reflective of my skills as a user, but I don't think it's that simple. I have used bookmarks successfully in the past, and unquestionably, some web browsers have better bookmarking tools than others.

On the whole I tend to use bookmarks as simple shortcuts. I use them for webpages I visit frequently, and not because I can't remember the url, but just to save me the effort of typing it. However, if I were to bookmark every page when researching, I'd quickly have a list of links that were unwieldy and largely meaningless. Volume works against bookmarking as an effective solution for tracking pages when researching.

A more fundamental problem with bookmarking is that it only saves the link to the page, and over time pages change and disappear. Furthermore, saving a url won't always work. For instance, url's saved within a website requiring the user to log-on won't return the information.

Certainly bookmarks have their place, and some products have gone a long way to address their shortfalls. But aside from using them as a convenient way to return to pages I visit frequently, I have never found them effective for tracking my progress when researching, or saving those pages I may wish to return to later. The more fundamental issue of content changing or being removed have not been resolved by bookmarking tools. I recently heard a PhD student despair over the fact that an alarming proportion of the bookmarks she had created no longer worked. The painstaking hours of work they represented were all but wasted.

The Tools we Have: Memory

My other method for retracing my steps and finding material is bluntly utilitarian and requires nothing more than a good memory and considerable time. When all else fails I simply replicate my original search, and follow what I can remember of my original steps.

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While this doesn't always work, it works more often than not. While terribly inefficient, the relative reliability of this solution creates a new problem. The mere fact that we generally can relocate pages by recreating our original search means we tend to settle for what is actually quite an inefficient and largely inadequate solution.

We are creatures of habit and have such an extraordinary capacity to adapt, that we learn to 'make-do' and to live with solutions that 'more or less' work. The brilliance of Google is that with enough time and persistence it's just about possible to find anything. However this is hardly an efficient approach to Internet and probably constrains even the way we think about accessing and researching the vast wealth of information available to us. The cost of adaptability is that it tends to inhibit creativity.

The Tools we Have: Copy & Pasting

So far I have only talked about the problems associated with tracking or relocating pages of interest. Saving the content presents a new set of challenges.

What do I do if I find something I really want to come back to or use? It may be information that I want to include in a research or writing project, or perhaps something I want to send to someone else?

While I might persist in copying and pasting one or two web pages, I am unlikely to do this for anything more substantial.

Choices are limited and largely restricted to copy and pasting information to word processing packages. Like bookmarking it works well enough to seduce us into thinking we can get by. However it's not simple and requires considerable effort. Web pages created using HTML code do not translate well into word processing documents, and often require significant reformatting. This is particularly true if the page is heavy with graphics. While I might persist in copying and pasting one or two web pages, I am unlikely to do this for anything more substantial.

The Tools we Have: PDF's

One method of saving content, typically used by professionals, is to create PDF's. These hold the formatting of web pages and allow documents to be annotated and searched. However once multiple PDF's have been created, there is no simple way of locating them in a functional database that supports more complex searching and management.

Collaborating with other researchers requires expensive software and even the simple annotation of PDF's requires the use of additional components. The whole process of moving web pages to PDF's is cumbersome, costly and time-consuming. Realistically it is a not a solution that will work for the average user.

The Tools we Have: Consequences

With no easy way to track and save material, and without the certainty of even finding it again, I suspect we are destined to continuously skim across the surface of articles and ideas. We plumb the depths of books precisely because we can take our time. We read, we mark pages and scribble notes in the margins, and allow ourselves the luxury

of reflection, certain that we can return to the material when we need it. However our rudimentary tools for searching and saving web based information offer us no such luxury, and our tendency is to keep moving, glancing across the surface of things, rather than taking the time to gather and store what is most interesting and most useful. So we adapt, use the tools we have and make compromises, modifying the way we research and access information to fit with what we have.

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The vastness of the web, it's transience and the constant stream of information it makes accessible, is just one side of what is a complex problem. Recognising that this is unlikely to change, we come face to face to the need for better tools.

The Need for Better Tools

There are of course emerging solutions and while some programs address some of the issues outlined above, there are very few programs that come close to addressing all the needs of the user. Those that do provide a more sophisticated solution tend to be skewed towards the growing market of social networking. This can limit their appeal and reduces their effectiveness for professional and academic researchers.

The case for iCyte

iCyte is unique in that it addresses all the issues outlined. It meets the need of the everyday user, as well as those of the more sophisticated, serious researcher. iCyte answers the fundamental question, I have found something interesting on the internet now what can I do with it? While iCyte can be used by individuals, it has been designed to support collaborative research.

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It draws on the best of the social networking models but is structured to create knowledge communities, based on shared visions of learning and growth. As such, iCyte opens up possibilities for collaborative research, that previously would have been difficult even to imagine.

Key Development Principles

A number of key principles have informed the development of iCyte. Most important was the desire to create a program that was sophisticated but still simple to use.

> iCyte shifts these possibilities for collaboration into the domain of research.

The design itself is elegant, clean and simple. Once installed, a small button appears in the menu bar of the web browser. Clicking this reveals a simple pull down menu that allows you to mark and save web pages. Saving content or saving a page is as simple as clicking this button.

The web-page is saved to the iCyte server. Regardless of whether the original page changes or is deleted, a copy is saved, meaning it will never be lost. In itself this is a very significant aspect of the program and overcomes the problems associated with bookmarking.

While finding a way to effectively save web-based content is crucial, being able to save it in a way that is meaningful is just as important. The ability to attach notes and tags, and then to classify the information into discrete projects means that the saved content can be managed effectively and efficiently. The personal database created from the saved material can be searched, and information is easily retrieved. iCyte overcomes the difficulties associated with cutting and pasting and goes one step further by providing a reliable way to manage and search saved data.

iCyte can also be used collaboratively. Other users can be added to projects, allowing groups of people to collaborate on projects and combine their research. Online collaboration is an emerging trend. Google Docs and Buzzwords are just two examples of products providing a mechanism for sharing word processing documents online. iCyte shifts these possibilities for collaboration into the domain of research.

iCyte in Practice

How can iCyte change the way we use and access the internet?

The question is more complex than it first appears, not because it's difficult to answer, but because only in using iCyte does it becomes apparent how much our engagement with the Internet has been limited by the tools available to us.

Using iCyte is simple enough, shifting how we think about web based research is what really makes the difference. In using iCyte that we really begin to sense these possibilities.

Some examples of using iCyte

The first step has to do with remembering that saving any page is easily and quickly done. Although this seems obvious, many of have become so accustomed to not being able to save pages or content, that we don't even think about doing it anymore.

Pages I may have printed as a means of retaining information can be saved and located in a relevant iCyte project file in a matter of seconds. This is particularly

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useful for any web-based transactions, be it a confirmation for car hire, a hotel booking, or the receipt for the purchase of online goods. While most of these sites will send a confirmation email, saving the page in iCyte means I can quickly classify the information and locate it in a project specifically set up for these kinds of transactions. As our transactions increasingly occur online, iCyte becomes an effective tool for recording this important information.

How I use iCyte when I'm searching often depends on the kind of research I'm doing. Some projects are more short term in nature, and searching for hotel or holiday accommodation is good example of this. Previously I would trawl through various sites, looking for that perfect combination of price, location and facilities. But as anyone who has ever searched for accommodation on the Internet will know, this can quickly become a tedious and confusing process.

It's difficult to keep track of all the things you have looked at, and very difficult to compare options. I've tried bookmarking, but this generates a large list of links, hard to differentiate between and not easy to sort through. I've also tried copying and pasting information into a word processing document, but generally end up spending more time editing the document than I do searching for properties.

With iCyte it's a simple matter of saving the page, adding tags that identify key aspects (eg. Location: beach, downtown) and including any notes that might be helpful when reviewing the results (eg. great price but no internet access). While I might consider projects such as this to be more short term in nature, the beauty is that if I return to the same place for another holiday or business trip, I already have a research base to work from.

Other projects are oriented towards professional or academic research. I have a shared project with a colleague with whom I am writing a book. There are two ways in which I use iCyte for this project; as a repository for any articles or information that have relevance to our project, and to analyse and annotate academic articles (published in online journals or available

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through the various academic data bases). These sites very often only have rudimentary tools for annotating text and in the past I have generally resorted to printing and annotating these articles manually. Using iCyte to annotate texts is far more effective. Not only does it save time and paper, but it creates a searchable database. This allows me to manage my research very effectively and is much better than rifling through a stack of papers looking for that wonderful quote I know is somewhere.

I recently created a family project where I save all sorts of information. It includes the school calendar, the website for my daughter's pony club, research I did on different options for summer camps, and places that might be of interest to us as a family. I simply keep adding things of interest and it is there as a resource when we want to do something.

iCyte can also be also to increase public awareness and to aggregate articles and information into projects that have broad appeal. Public projects can be viewed and searched by anyone, and can be used to pull together information on specific topics. For instance I am currently participating in a [Climate Change](#) project that seeks to gather relevant information with the purpose of increasing awareness of the issues, while also tracking the most current news events.

Other uses for iCyte emerge as I experience the shift in my own thinking that comes with the knowledge that creating links and saving content is a simple matter.

Conclusion

iCyte addresses the many issues associated with the Internet and managing online research. It does so effectively and more comprehensively than any of the other products currently available. Tracking searches and saving websites is simple, and increasingly I find myself marking things, not just because it is easy to do so, but because in categorising them, I have a structure that allows me to come back to them later.

In the past, the research I might have done would have tended to be more superficial in nature. Copying and pasting was just too inefficient a way to capture content, and printing and annotating a hard copy generally seemed an easier solution. Perhaps most telling is the recognition that the idea of online research filled me with a kind of dread, not because I had a sense I wouldn't be able to find information that was relevant and useful, but because of the thought I would be diving into a chaotic overwhelming sea of data with no way of being able to effectively navigate my way through the information.

> iCyte is one such tool, giving us the means to create personal databases of all the information important and relevant to the way we live and work, freeing us to reach more deeply into our potential for creativity and learning.

iCyte gives me a sense of certainty that having found what I want, I can hold on to the information and use it in ways that increase and deepen my own learning. In using the internet, I no longer have to remember what I've done or where things are, and secure in the knowledge my research is well managed, my mind is free to engage more fully with what I'm doing. My sense of dread shifts towards excitement. With the knowledge of iCyte's capabilities, I notice my whole conception of the Internet and how I can use it begins to change. New possibilities emerge.

Without doubt the Internet will continue to grow and develop, and increasingly information we previously accessed from other sources will become available online. We need better tools to equip us for engaging with the web; elegant and efficient tools that let us be in charge of what we are doing. iCyte is one such tool, giving us the means to create personal databases of all the information important and relevant to the way we live and work, freeing us to reach more deeply into our potential for creativity and learning.