



Pushing information in the legal environment – useful tool or more spam?

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1 What is push?

The study of the development of push technology is an interesting one. In 1997, it was *the* hot topic of IT vendors and publishers. Just a little more than a year later, it was pretty much trashed as 'a useless solution in search of a problem.' In 1999 – sometimes under an assumed name – it found a place in companies and intranets, having metamorphosed into something people could actually use. The proliferation of Web sites and the profusion of information led to the idea that people would find having Web material gathered and sent to them, instead of searching for it themselves, a 'good thing'. And so push was re-born, a technology where users can choose content that they wish to receive (DeCandido 1999).

The word 'reborn' is used because 'pushing' information has been around for centuries. Tam-tams 'pushed' information across vast tracks of Africa before the advent of the telegraph. Before the first true mail service appeared on the back of a horse, the 'herald' would walk the streets, shouting out news items and making commercial announcements. The tradition survived until recently, in the guise of the newspaper boys. In the early period of the Anglo-Saxon legal profession, decisions were not widely reported, and laws were published at government offices, but there was no true delivery service, beyond legal publishers and archivists. The lawyers in those days were not faced with 'information overload' – they had to use their minds and think about the logic of the case to resolve the issues.

In 1833, the first true wide area electronic communication system was designed by Samuel Morse to send electric signals over wires. This technology, however, was not effective for

communicating legal information to the growing numbers of lawyers. In 1876 Alexander G. Bell invented the telephone, which could carry sound through the ether, but at that time, magnetic and digital data had not even been conceived. No one was pushing legal information over the phone. In 1887 Heinrich Hertz transmitted radio waves over a short distance and in 1919 KDKA in Pittsburgh, Pennsylvania was licensed as the first broadcast radio station, pushing out wireless sound to the public. The information revolution had begun, and there was no way of stopping it. In 1926, NBC was formed and begun pushing its programming out to 20 affiliates in the Northeast of the USA. Then in the late 1930s and early 1940s, the television came on the scene (originally having been conceived in 1927). The true age of multimedia (the combination of sound and picture to deliver a message) was born (Bowie and Jensen 1997). Some writers argue that the greatest push technology invention was Guttenberg's press. Taking into consideration that all the subsequent technologies have failed to displace printed media, and have merely complemented them, one tends to agree with this point of view.

Push technology, like any other technology, is 'neutral', that is not inherently bad or good. How it is applied is another issue. In this article the issue is addressed of how (and if) push technology should be used in the legal profession.

Push technology incorporates the notion that useful information can be delivered automatically (pushed) to the user so that the user doesn't have to pro-actively search for (pull) useful information (Teal 1997). Push technology delivers content to a user's desktop on a periodic basis, turning a computer screen into a kind of continual news source that displays such information as stock quotes, sports scores and headline news according to the user's preferences (Teshima 1998). Push technology could be described as sophisticated e-mail (Calvin 1997).

Traditionally, the Internet has worked as a pull system. Users go out on the Web, searching for information and then individually, as desired, pull the information down into their computer. This request–reply or client–server model is today's standard method for getting information from the Web. However, this can be tedious and inefficient, especially when one needs updates to information on a regular basis or needs to have some information (software, reports, news, etc.) sent to multiple locations. Search engines are far from perfect, and their imperfection adds to the uncertainty levels of information searchers. Push technology allegedly makes provision for the regular canvassing of selected information sources for new information, then having that information sent to users seamlessly, as they work on other applications or perhaps even as they sleep at night (Hether 1998). This, of course, is the ideal. The facts are slightly different.

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2 How it works

There are different types of push technology available. E-mail lists are just broadcast centers where a central list of subscribers' addresses is kept. As mail comes in, it is re-distributed to the list. E-mail lists are the premier implementation of push technology in the legal field. Mail lists come in two types and a variety of formats. The two types are *discussion* and *announcement* lists. **Discussion** lists permit subscribers to post messages to the list. **Announcement** lists are one-way lists – users receive an e-mail when the publisher (list owner) decides to send it. Discussion of these very important lists follows later. The formats are as follows:

- **Closed** lists, which only permit persons who qualify to be on the list, and usually require the user to fill out a form stating the basis for the qualification;

- **moderated** lists, which are lists that are reviewed by a person before they are forwarded to the recipients list; and
- **self-moderated** lists, which are lists that have specific topic or programme themes on certain days, and the members try their best to stick to the topics (Oliver 1998).

URL minders are intelligent agents (IAs) that keep track of when changes are made to Internet pages that the users have found of interest. E-mails are sent to inform the users of changes. The original URL minder [<http://minder.netmind.com/>] can be configured so that it e-mails the user when any change has been made to the page the user are interested in. Many of the better Web sites now have e-mail notification built in, and the user does not need this tool. A few products were being developed to judge when a page has changed in a material way. For example, at U.C. Irvine the Do-I-Care-Agent (DICA) was developed to weight the changes and notify the user of important changes (Starr *et al.* 1996). It was an academic exercise that fizzled out.

Other types of push technology are **application distributors** which allow software to be distributed to end-users and are meant for information systems people, **content aggregators** that gather information and push it out (PointCast is the prime example), **platform providers** that offer ways of creating one's own content aggregator, a PointCast-like product on one's own server, and **real-time data transfer**, which transmits data, like stock quotes, to any number of people at once (Forrester 1998).

Push technology has been trumpeted as the next revolution in the distribution of information. However, since most Internet users are not connected to the Internet continuously, push services usually rely upon the subscriber's computer to connect to the Internet and request the information. Today, anyone with a Web site can use push technology to distribute information. For example, if the user developed a weekly Web-based newsletter on important developments in a particular area of a legal practice, it can easily be turned into a 'channel' for viewing in Netscape Communicator, Microsoft Internet Explorer, or on the PointCast service. A channel is just a Web page or pages with some extra coding and, in some instances, associated channel definition pages that together allow the chosen medium to recognize the pages and set up the distribution schedules (House 1998). There is an even simpler way to push information out to interested users in the Internet community – old-fashioned e-mail. Office newsletters, updates on legal developments and firm announcements all can be distributed by e-mail.

With many of the proprietary push technologies the user must download and run a program on his/her computer. In the PointCast [http://www.infogate.com/index.php?page=download:index_pointcast2] situation, it runs apart from the Web browser; in most of the others it runs as part of Web browser, or as a ticker. After the program is run, the user configures it by entering personal information such as his/her area code, zip code, stocks, preferred news (business, technology, social, etc.) which are likened to the channels on one's radio or TV. Most users need expert help in tuning push tools, and the most logical place to turn to is a librarian. Librarians will turn to reliable, authoritative services that provide access to the largest possible variety and number of sources (Teal 1997).

Push technology is the idea that, instead of advertising generally what the user has for sale and then waiting for someone to ask for it, the user builds up a profile of his/her clients and when the user has developed something which the user thinks the clients might be interested in buying, the user contacts them directly (Hammersley 2000). Push technology is merely the Web-based electronic version of direct marketing.

The one this author is directly concerned with is the content aggregator type, epitomized by PointCast, which also represents this object lesson in the rise and fall of a technology. A

content aggregator gathers information together and then pushes it out to its subscribers. PointCast (now EntryPoint) was essentially an applet that could be programmed to receive news, sports scores and other information garnered from broadcast servers.

Push technology can be used for the benefit of the community at large, by providing online legal advice and services. The basic technology for these bulletins exists today – at least for simple e-mail or intranet transmissions. Increased bandwidth will allow these bulletins to include audio/video. They will be more effective if they provide the opportunity for clients to reply with questions they have, or maybe even with related problems they are facing. It will also be more helpful if the bulletins are stored and indexed so that the clients can refer back to them as the need arises. The information that the bulletins are able to provide will be much more impressive if they are monitored by sophisticated information analysts that may be able to discover relevant patterns. The material to be distributed will have to be produced. The opportunity that push technology presents to reach the client community with relevant information will tend to bring together advocacy groups, tenant rights groups and impact litigation groups. All these groups are dealing with the same set of problems and possibilities, and each has something to add (Genz 1999).

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3 Pushing the Australian legal profession

In September 1998, Butterworths launched *PI Online*, the latest addition to its *Butterworths Direct* Web-based law library. Originally designed to deliver, via the Web, a daily summary of the latest development in areas of law each subscriber had identified as being of interest, this service is now being revamped to use push technology in the form of daily e-mail alerts. Thus, instead of having to log on to the Web to read the summaries, they will be delivered directly to the subscriber's desktop via e-mail (Christian 1998).

Push technology is used to *stay current*. It is not used for substantive research on the Internet.

In a typical day the user will receive regular snail mail, telephone calls, e-mail, faxes, overnight express packages, person-to-person contact and maybe even a cell phone or pager call. Some will be unsolicited ads (in e-mail terms, spam), some will be generally relevant information, but not client related, and some will be urgent client matters (Oliver 1998).

Migration Institute Australia (MIA), the body responsible for professional development among migration lawyers and agents, also pushes its bulletin to members through e-mail. The quality of material is poor and the material mostly links to publicly available information on the Web sites of the Department of Immigration, the Coalition and the Opposition. MIA makes sure that none of its pushed material contains news published in dailies, articles in legal journals and information from foreign legal publications.

ScalePlus [<http://scaleplus.law.gov.au/>], also called 'the window on the law', is maintained by the Attorney General's office. It has a feature, called 'Notify me when...' which allows the user to choose databases and keywords and then send an e-mail alert when legal data pertaining to that matter gets published on the Web site. It is far more informative than the bulletin pushed by Migration Institute Australia.

Many other legal research Web sites provide updates about their Web sites. Jurist [<http://jurist.law.mq.edu.au/>], LegalMart [<http://www.legalmart.com.au/>] and Butterworths Australia are examples of sites that actively push their information through e-mail.

4 The pros

Often breaking legal developments are brought to the public by the news media first. These developments can often directly and immediately impact clients' and pending cases. Today, no one expects lawyers to be familiar with the contents of hundreds of publications, much less within days or hours of their publication. The velocity of business is much greater than ever before. It simply isn't possible to have enough manual researchers to meet everyone's needs. These forces make the emergence of push technology necessary. The availability of fast computers, combined with a network connecting virtually all legal practitioners, make the emergence of push technology possible. Push products allow the profession, for the first time in history, to sift through all of this material for the name of a client's business or a key topic or issue. The characteristic of push technology that will improve the lives of practitioners is the combination convenient delivery with intelligent filtering. Another phrase for this combination is intelligent agents (Teal 1997).

One of the pros is practically up-to-the-minute news, which every now and then can impress a client or lead one to think about a matter in a different way (Oliver 1998). Business people need to spend their time doing better analysis of information and making sound decisions and judgements, not sorting through screens of anyone's and everyone's opinions or ideas on some topic. CIO Magazine surveyed corporate executives and found that 94% felt that too much time spent on surfing the Internet for information would infringe on working hours and hurt overall productivity. The American Management Association found that 81% of financial institutions in its study monitored their employees' use of the Internet to see that corporate regulations or guidelines on use of the Internet – or long-distance phone services, and so on – were within reasonable limits. For many companies, push technology is very important and timesaving, allowing staff quick distribution of new software upgrades or company policy changes, handling of electronic forms distribution and keeping up-to-date on news or competitive information (Hether 1998). And yet, in the popular and sometimes the professional press, push technology has been described as elitist, as a danger to future tele-democracies and as the end of Internet access for all.

5 The cons

Searching technology is still usually based on finding particular, specific words, but we all know that even proper names can have forms that differ from the official versions. General concepts may be impossible to find. Another problem is that the same text may appear many times in publications. The most common example of this are wire stories, and it isn't very rewarding to receive dozens of copies of the same article because it appeared in dozens of newspapers. Even when duplications are detected and eliminated, the volume of material may overwhelm the user (Teal 1997).

Security is a major concern for distributed computer generated material, particularly as 'active' technology (push technology, agents and the like) becomes the norm. Network administrators will need a high level of control and audit authority over access to both the firm or departments' networks and external network devices (Steele and Scharbach 2000).

It can prove troublesome to users who connect to the Internet using analog phone lines and modems. After installation of push components, many users find that their computers have become significantly slower because push technology makes calls to users' Internet providers automatically (Teshima 1998).

The cons are many:

- It is another piece of software to distribute out over your network, configure, support and maintain with updates.
- It is distracting to say the least, because the 'price' the user pays is the advertisements that scroll by with the content.
- It works better with a full time connection to the Internet, thus incurring more expenses.
- Some of the programs, particularly PointCast, can cause problems with existing software.
- There is a loss of some privacy if one fully configures the services with personal information (Oliver 1998).

Push technology, however, can be distracting, as notices of information updates run across the user's computer screen as he/she user tries to work. Some of the information one gets won't be what one needs; some filtering by the user is still needed. The Internet connection, since it must remain active, is burdened by the requirements of push technology and this means that more resources (money or network connections) have to be allocated. Lastly, in order to use push technology effectively, one has to have a fast computer system (Hether 1998).

As long as products use proprietary methods they will not always work in tandem and may not work well with existing programs and hardware configurations. Security and bandwidth concerns need to be dealt with as well. Without more information and standards, most conservative buyers – including most large organizations today – are not very interested in buying any of these solutions.

Also, so far push technology has not solved the information overload problem. On the contrary, the amount of information pushed is very unmanageable by a single person. As an example, this author started as a member of two knowledge management (KM) newsgroups, one KM electronic newsletter and three alerts from KM publications about a year ago. Last week this author checked the status of the KM mailbox: there were 452 unread messages. The Techno/Legal mailbox (where the author has IT newsletters related to law practice) had 148 unread messages. The few white paper sites that have electronic alerts pushed more than 1000 documents over the past six months, just for the keyword 'knowledge management'. Therefore, pushing does not seem to be the solution – organising the pushed material in a categorised and easy to access way definitely is.

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6 The present and the future

Information is not something we have a shortage of; what we need is the intelligence to use it, the discernment to appropriate the useful and the time to discard the irrelevant. Unless seriously sophisticated filtering techniques are used to locate and push information toward the user in these new browsers it can be assumed that people will spend a lot of time wading through junk in the quest for the gold nuggets they need. If not, they will eventually discard the lot and go back to traditional methods (Calvin 1997).

Two environments for push technology are flourishing right now. One takes place on intranets and the other is an old familiar friend, e-mail. E-mail is the original online push – one doesn't have to go to it, it comes to you. E-mail lists, commonly called 'list serves' or online discussion lists, are proliferating, thanks to list hosting services like [eGroups](#) (purchased by Yahoo!) and [Topica](#).

'Traditional' push technology like BackWeb and PointCast is also being used on intranets. Using push technology, a library can send benefits information to all its employees, target software updates to key departments, or reach administrators at all of its branches at once. Intranets can utilize e-mail or they can use the kinds of technologies described above (DeCandido 1999).

Clearly, these products will evolve in the sophistication of the searches they do, with thesaurus-based searches and relevancy ranking, as well as in the delivery methods, with regard to ease of use issues such as format and timeliness (Teal 1997). When Internet connections become faster, this problem associated with push technology will disappear. Until then, users should discard push technology from their systems. Mailing lists remain a good alternative (Teshima 1998).

Today push technology generally remains a somewhat distinct product. In the future, a push feature will be added to all types of integrated network products so that it will become indistinct as a technology. Both Netscape Netcaster 4.0 and Microsoft Internet Explorer 4.0 already incorporated versions of push technology into the browsers themselves. In fact, one of the major reasons that the browser war exists is that the two programs support competing and incompatible channel formats. Microsoft's version uses the Common Data Format or CDF standard for sending Web information over push channels, which is supported by PointCast and the various PointCast-compatible channels on the Web. Netscape's product does not offer a standard format for simple channels: users can use Java or JavaScript to determine how their individual Web pages will publish itself when using push technology.

Knowledge management software, such as the various products from Docuwork, also incorporates types of push features. Integrated software products are the norm in the computer industry – from Office 97 to 'Internet in a box' types of solutions. Push technology is one tool or feature that is too basic and too important to be ignored as vendors compete for market share in the Internet marketplace (Hether 1998).

We are at the end of the 1st generation phase of electronic push publication. Second generation solutions are just becoming available. They will be marked by *configurability* (letting the user refine what he/she receives and what not) and better full-resource linking, indexing and highlighting of relevant portions that are sent to the user.

Third generation electronic push will be even better. For example, electronic delivery might include a link generated from a permanent IA that is always working, searching for news stories, trademarks, issue lists or other items of interest. They will traverse proprietary and non-proprietary systems. When relevant data are found, the IA will deliver the links organized in a relevancy list, with customized notification and automatic organization. Legal publishers will become aware of this possibility (or if they do not, entrepreneurs will see the opportunity) and begin to charge a fee for service delivery (Lexis Nexis and Westlaw have already started it in the USA). Eventually users will be receiving information pushed to them that precisely encompasses just what they need to know, prioritized and organized for easy in-depth primary research.

Instead of push technology, perhaps we will see a better system of indexing or categorizing the different types of Web pages, such as being able to limit one's searching to the types of providers on the Web. As the Web continues to grow and users mature, it will be essential that the Web itself matures or it will never outgrow its image as a collection of brochures or as a huge bulletin board of posted information.

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