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BY RAFAEL LAGUNA DE LA VERA

Building a New Communications Highway *Instead of fixing the potholes*

If the Internet did one thing, it dramatically accelerated the flow of information. This, in turn, has led to additional pressures on today's white-collar workers – the so-called knowledge

A reply to a written letter may well take a week – more than adequate in the not-too-distant past. Today, not replying to an e-mail within a day is close to an offense – and watching the “Crackberry Heads” and Instant Messengers – “expected” response time is coming down to minutes and even seconds. One thing that made this possible was the availability of open source operating systems and software, such as the popular Sendmail program that made it possible for ISPs to offer high-volume, reliable e-mail services, as well as the Internet's ability to globally adopt services such as DNS and Web services, which were ably supplied by easily globalized and shared systems like BIND (Berkley Internet Name Domain) and Apache.

However, it's not just the speed of communication – it's also the depth and sheer volume of information people have to deal with. Google is indexing everything in sight to help people wade through the terabytes of data now

You rarely hear people complaining about how little e-mail they get, even after filtering the spam and other junk. In addition, expectations about preparations for meetings, papers, and presentations have risen dramatically – fed by business tools as diverse as Google, and RSS feeds, and even the increasing utilitarianism of handheld devices.

You just don't ask what a potential customer does (you go to their Website and search the Internet) or where they are located (MapQuest, Google Maps); you are expected to know if somebody you meet published something somewhere or even has a blog. You are expected to have up-to-the minute information at your fingertips. It does not matter if you are in your office, in your car, on a plane, or halfway across the world.

Today's knowledge worker becomes a juggler of the information tools he or she uses – the Web, the Web 2, e-mail, instant messaging, mobile phones, notebooks and office workstations, proprietary applications, and a lot of Word, PowerPoint, and Excel documents all with numerous revisions. If you have the latest versions of OpenOffice.org and StarOffice, you might be reading them in a different type of office suite, perhaps one that eventually becomes a global standard and is freely available.



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Fixing the Web

The daily routine or a research trip through the Web today means a lot of time-consuming work. Visiting dozens of Websites – often multiple times a day – and collecting and integrating the information into a result is a cumbersome manual task. Technologies like AJAX improve the usability of Websites and, more important, drive the creation of Web services that can be programmatically used for integration tasks: Websites get an API.

Fixing E-mail

E-mail has a lot of advantages – for the sender. Different from a phone call it's not the sender's responsibility to make sure the information really reaches the recipient; once you've sent an e-mail your task is done – the ball is in the receiver's court. This shift of responsibility is the core of the e-mail problem: e-mail is too easily created and

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the sender's responsibility ends at the send button. One of the most successful open source projects, SpamAssassin (<http://spamassassin.apache.org/>), helps to knock down a lot of these easily created e-mails in the form of SPAM, but we also need to knock down extraneous e-mail at its source.

Once we receive the e-mail, we need to be able to deal with it more effectively, not only the programs that we use to read and send but the actual methods we use to exchange information. The knowledge worker needs different means of communication for different tasks. E-mail needs to be reduced to short messaging and integrated better into our business processes and tools so that the information is disseminated effectively.

A survey conducted by Open-Xchange (www.open-xchange.com) showed that while most people use a Web client for e-mail, only 8% use it as their main tool to process e-mail. Fifty-one percent use Outlook or Outlook Express as their e-mail client of choice. Add the rise of Smartphones and maybe even iPods and client-based e-mail will become even more vital.

Bringing It Together

A knowledge worker needs the "information ecosystem" everywhere, on any device: phone, laptop, office workstation, home computer, Internet café. This information needs to be complete, up to the minute, and right at his or her fingertips.

Again, a Smartphone is not the perfect device for browsing AJAX-based Web sites, but it may be the only device you can use briefly before or during a meeting.

Documents (contracts, budgets, presentations) shouldn't be distributed by e-mail, detached to the local file system (which is another organizational and security challenge), edited, and then sent back, possibly by many people at the same time, as it creates many branches of the document and a reconciliation nightmare.

These documents instead need to reside in a repository, where users can easily find, read, compare, and edit the most current versions of the documents and download them only when required. Who is responsible for the document must be clear at any time, on any device. The method for doing this should be an open standard so this can

happen no matter what your messaging client or office suite. The broad adoption of WebDAV (Web-based Distributed Authoring and Versioning), an extension to the HTTP, has significance in this respect.

The knowledge bases of the whole company and of individual projects can be collected for everybody (who has access) to read, write, and even (re-)structure. Documents, Web sites, and e-mails must be a part of those knowledge bases so that this information can be put into context. Address books must be centrally and de-centrally manageable and have active components in which an address may come from a Web service so that it is always current. It must support all direct and indirect means of communications – Instant Messaging, e-mail, Voice (over IP), and, of course, the old snail mail and fax.

All these information resources must be integrated with each other and with the Web to create a single focal point for the information workers' data ecosystem.

Opening the Information Jail

Current e-mail-based knowledge worker toolsets really are medieval fortresses, with many defense rings around valuable information. The outer walls are the disparate storage places of information: local file systems, individually created directory hierarchies on those file systems, the documents in various revisions in those directories, e-mail accounts and copies of those on e-mail clients and devices, the various Web resources, and the central storage efforts of the company make up the total data a company has and that an information worker has to work with. The information may just be very hard to find or – if you find it – you may not have the most current, authorized version.

The central defense of our ancient castle is proprietary file formats and proprietary services. If you've been a knowledge worker long enough, you may have gone through a couple of changes in the toolset you use. For example, if you've switched to Word and Outlook, try going back to a Freelance presentation or a Lotus Notes-based e-mail file. Or are you aware that all your BlackBerry e-mail goes through two central proxy servers of the company that makes them?

Open source comes to the rescue. It is much more than Linux and programs – it's

also data formats and protocols that are open. Many of those have matured greatly and a modern groupware system can make heavy use of them. They must use standard e-mail protocols, standard e-mail server components, standard Open Document formats, and standard calendaring information. This will enable access from any device at any time – also in the future – and real integration of the Web 2.

User Acceptance

The work day of the knowledge worker is already too short (or is it too long?). We often underestimate the amount of learning that is required to switch from one tool to another. Many work with all those wonderful, bloated Microsoft applications (Word, Excel, PowerPoint, Outlook) and are, believe it or not, quite happy to do so.

It's the same when it comes to mobile devices – watch people use their Smartphones and you'll be amazed at how proficient many are (and how much they hug them, but let's not talk too much about the emotional barriers of changing tools).

A modern groupware system must support and integrate all these existing tools to be accepted by the information worker. Don't force a new e-mail client on people if you don't have to – let them work in Word, OpenOffice, or something else if they want to. Going back to the 30-page document example, the document repository should store the document in an Open Document format, but a user should also be able to work on it with Microsoft Word. E-mail should be accessible by a Web client but also with Outlook.

The ability to develop Web-based applications that rival and replace native applications has long been sought after to help expand this. There is a lot of promise in new technologies to create these interactive Web applications in the technology du jour; AJAX, an acronym for a type of Web development technique, stands for Asynchronous JavaScript and XML. AJAX may be a quick fix to some of the potholes in the information road; however, modern groupware needs to build the new highway that brings together the now disparate components of the information workers toolset – into a really useful platform. 🚩

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