



An interview with: **ERIC RAYMOND**

If you've heard the term "open source," then you're already familiar with some of Eric Raymond's work. His groundbreaking book, *The Cathedral and the Bazaar*, is considered by many to be the definitive work on the open source ideology. This month, *Plug In's* own Terri Wells got a chance to talk to the self-described "wandering anthropologist and troublemaking philosopher" about Sun's open source Java dilemma, SCO's war against Linux, libertarianism, and what a gun license and a marriage license have in common.

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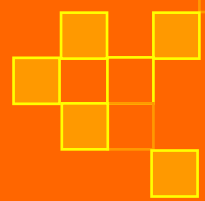
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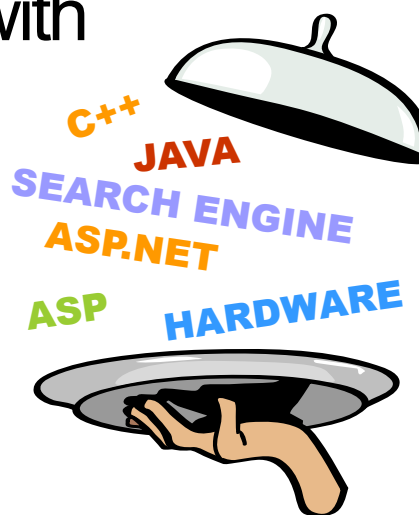
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AN INTERVIEW WITH ERIC RAYMOND

by Terri Wells

Eric Raymond needs no introduction — but, for those of you who have never heard of the widely-acknowledged amateur anthropologist of the geek community, here is a paragraph from his Web site that sums up some of his accomplishments: “Eric S. Raymond is an observer-participant anthropologist in the Internet hacker culture. His research has helped explain the decentralized open-source model of software development that has proven so effective in the evolution of the Internet. His own software projects include one of the Internet’s most widely-used email transport programs. Mr. Raymond is also a science fiction fan, a musician, an activist for the First and Second Amendments, and a martial artist with a Black Belt in Tae Kwon Do. His home page is at <http://www.catb.org/~esr/>.” Of course, this captures none of his sense of humor, which is more apparent in the short version of his bio, which describes him as “a wandering anthropologist and troublemaking philosopher who happened to be in the right place at the right time, and has been wondering whether he should regret it ever since.”

There aren’t many people for whom I can say “I knew him before he was famous,” but Eric is one of them. I knew him before he edited the most recent version of *The New Hacker’s Dictionary* (my autographed copy has a place of pride next to my Webster’s), and well before his justly-famous *The Cathedral and the Bazaar*. The first intensely intellectual conversation I remember having with him dealt not with open source or other technology-related matters (remember, this was long before he coined the term “open source”); we discussed the psychology of pagans and paganism, a topic on which he spoke with authority. Clearly, Eric Raymond is a modern version of the Renaissance man, as will become clear from the questions and answers that follow.

P.I.: Tell me about your early days as a developer geek. How did you get into all this?

E.R.: By teaching myself to program on minicomputers in the mid-1970s. I had actually been a Unix fan since before I was a programmer; I read the original Thompson & Ritchie Unix paper in my dad’s “Communications of the ACM” the month it came out — and if you’re wondering what a non-programmer was doing reading CACM you don’t know what an omnivorous information sponge I was then (and still am, for that matter).

I started to learn how to program about a year later. I’d say I joined the hacker culture the day I first saw [the Jargon File](#), in 1976. It was about three years old and had maybe 60 entries in it.

P.I.: When did you start to notice that you’d gone beyond being a geek to being a sort of anthropologist of geek culture? In what ways has this affected your life (both in general and as a geek)?

E.R.: What, you mean aside from making me absurdly famous? (Laughs) Actually I noticed this a long time ago, back in the early 1990s when *The New Hacker’s Dictionary* was first out. Who knew that was just going to be training wheels for the whole open-source thing?

P.I.: Of all your achievements, of which ones are you proudest and why?

E.R.: I helped the hacker culture wake up, know itself, and re-invent the world. Twice, once with *The New Hacker’s Dictionary* and once with *The Cathedral and the Bazaar*. I’m proud of that; even RMS and Linus only managed to transvaluate our values once each. I don’t suppose I have to explain why that’s something to be proud of to this audience.

ON OPEN SOURCE

P.I.: Why did you invent/create the term “Open Source”? Why not just stick to the term “Free Software”?

E.R.: The best answer to this is probably still the first call to action I wrote back in 1998; you can read it at <http://www.catb.org/~esr/open-source.html>.

P.I.: What do you feel are the biggest differences between Open Source and Free Software?

E.R.: There’s no difference. Not in the software. It’s all the same people, the same licenses, the same tools and development practices.

The difference between “open source” and “free software,” to the extent that there is one at all, is one of propaganda and attitude — not what you do, but how you explain and justify it.

P.I.: What are your feelings on BSD-style licenses that essentially allow companies to take the work of others, close it up, and use it in whatever fashion they please, without having to ever contribute back?

E.R.: In the longer term, I think that kind of defection is its own punishment. When you take a project proprietary like that, you put yourself in the losing position of funding a small group of in-house developers to com-

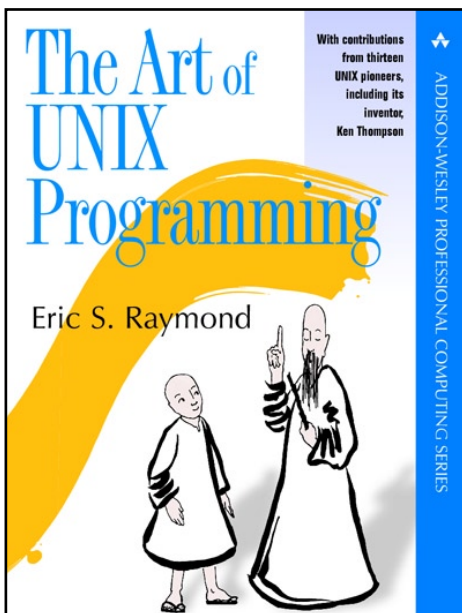
Action is better propaganda than talk. Our process is our message.

pete with a much larger pool of open source developers.

That's a great way to lose money hand over fist — eventually, since in the early going it often looks like it can work. So you plow millions of dollars into salaries, marketing, overhead, maybe you get to the point where you ship a few units. Then, the open source version, which has been attracting from a thousand volunteers a large multiple of the amount of programming hours you can afford to buy, comes back around and clocks you a good one with more features and a lower price.

I think GNU-style copyleft is important, yes, but more as a signal of social expectations among programmers than because it changes the economics or competitive logic a lot.

P.I.: There are a slew of technologies being developed that rely on open source products (whether it is for cost, quality, or both). Richard Stallman once said, "If we create the best software out there and no one understands the why, then we have lost. If our software is forgotten, but our ideas are not, then we have won." Do you feel the open source ideals of freedom are being lost in lieu of what products the development method can produce?



E.R.: No. I differ fundamentally from Richard on this. When he says "Let's talk about freedom" I want to reply

"Shut up and show them the code."

Action is better propaganda than talk. Our process is our message.

I think the idea of freedom, the sweet smell of empowerment, inevitably comes through more powerfully in what we do and what we are than it ever possibly could in a lot of yatter about abstract moral ideas.

We don't have to posture, because just being ourselves is far more subversive than posturing.

P.I.: What are some of the companies that "get" open source?

E.R.: You mean outside the homegrown open source outfits like Red Hat? IBM and Novell stand out as examples.

P.I.: In your opinion, what needs to happen for open source operating systems and software to catch on more among non-technical people? How can programmers/developers help bring this about?

E.R.: We need to get serious about user-interface design. I've ranted about this recently in "The Luxury of Ignorance" (<http://www.catb.org/~esr/writings/cups-horror.html>) and a follow-up.

The Unix tradition is very strong and effective at almost everything else that goes into making a good operating system; we are the kings when it comes to stuff like stability, security, performance, flexibility and so forth. But in this one area of UI design for end users we're not just weak, we're desperately awful. So bad that most of us can't even estimate the depths of our own incompetence.

I think we can get better, though. It will take some fundamental changes of attitude and some bruising collisions with reality, but we can do it. Far more easily than anyone mired in the Windows swamp can solve *their* deficiencies...

P.I.: Do you feel that companies which profit from the use of open source are/should be morally obligated (or compelled) to contribute back to the community?

E.R.: You just asked two questions

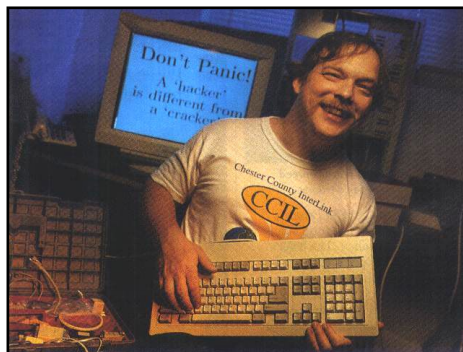
which are very dangerous to confuse.

Yes, I think companies that profit from open source have a moral obligation to contribute back to the community. However, I reject the idea that this gives anyone the right or authority to compel them to do so. Argument is fine; public shaming is fine; but compulsion of any sort would be wrong in this situation.

Years ago in a political forum, I noted that a common hidden premise in many people's arguments that I named the Pressure Principle. It is the belief that "X has a duty to do Y" naturally implies "some Z may rightly compel X to do Y."

The thing to realize is that accepting the Pressure Principle is a short, straight road to hell. You end up in a world where people are constantly inventing new "moral duties" that are nothing more than excuses for using compulsion and force to get their way.

I don't want to live in that world, so I oppose the use of force for anything other than self-defense, and thus oppose using it to impose anyone's notion of "duty." And I maintain that position whether the issue is corporate free-riding on the open source community or anything else. Unless someone commits violence or fraud I don't want "compelled" to even be on the table.



PARADIGMS

P.I.: You're both a Libertarian and an anarchist. How do these two points of view affect how you see "Free Software" vs. "Open Source"?

E.R.: My politics feed my distrust of "free software" moralizing. I think I have excellent practical reasons for that distrust, but my anarchism made it easier for me to see those practical problems. That's as opposed to, say, inventing a slightly different flavor of moralizing complete with a theory that It's-An-Outrage-And-The-Government-Should-Do-Something; I suppose I could have gone that route.

P.I.: How long have you considered yourself a Libertarian? Did your thought about government and personal freedom shape how you treat software development or did your observations in software development shape your views on government and freedom?

E.R.: Actually I can date that exactly. I've been a libertarian since 1980, but I was still a minarchist rather than an anarchist for three or four years after that. For what tipped me over, read <http://www.catb.org/~esr/writings/anarchist.html>.

My political background makes me much more comfortable with value-free economic explanations for things. Markets work. Individual freedom works. Individual freedom and markets are inseparable, in fact they're two sides of the same coin, and the coin is inscribed Nobody Is Using Force. When you believe that, it becomes much easier to see solutions and social patterns that are decentralized, with nobody controlling the system and no particular conscious moral aim involved.

It didn't take Libertarians to invent open source development any more than it took Libertarians to invent markets; both these phenomena are natural co-operative outcomes of selfish behavior. But I think only a Libertarian could have explained open source development to the world as effectively as I did. Statists have too much crap in the way — they need the invisible hand to be God or the government or something other than what happens when people seek their own ends in freedom.

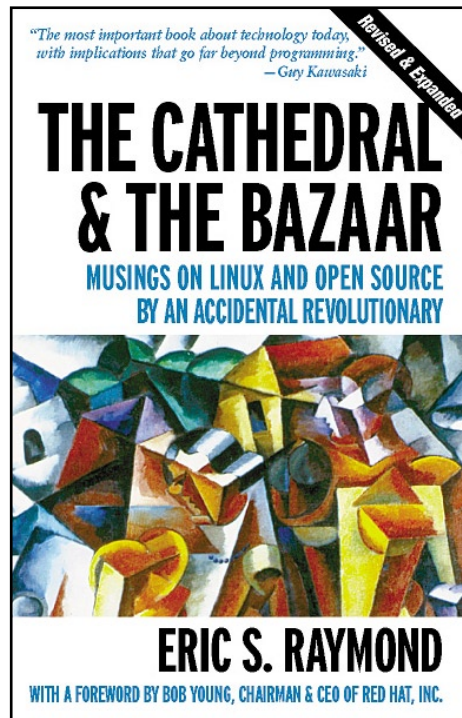
P.I.: If you hadn't studied hacker culture with the mind-frame of an anthropologist, could you have arrived at similar conclusions regarding the software creation process?

In this one area of UI design for end users we're not just weak, we're desperately awful.

E.R.: Hmmm. Maybe...but the language of my conclusions would have been quite different, and probably much more difficult for non-specialists to understand.

P.I.: Tell me about what inspired you to write *The Cathedral and the Bazaar*. What parts of it have you and your readers considered most interesting? Most controversial? Were there any

parts that readers tend to not "get" that you find particularly surprising?



E.R.: I've told how I came to write CATB before, most notably in the book-length version on my website.

Which parts people consider most interesting varies all over the lot — techies groove on the bits that are most directly about software engineering, but I've had professional writers tell me they love the prose, and social idealists go on at length about the marvelous new vision of a cooperative society. (That one doesn't tend to last when they find out I'm an individualist anarchist whose usual response to utopian social ideology is to reach for a revolver).

In truth, I'm beginning to think the actual definition of "seminal work" is "one that

all the implications of that one.

ON SUN

P.I.: Back in February 2004, you wrote a couple of open letters to Sun about the company's claims to be "a friend of open source" which particularly addressed Sun's stance about Java. Would you briefly discuss this here? Have there been any developments?

E.R.: I have had some conversations with a highly-placed executive at Sun attempting to help them develop an open source strategy. There are several factions fighting it out inside Sun over this issue, and it is not yet clear which faction will win.

I'm told that one source of pressure on Sun is that the most recent developments in the politics of Java Community Process mean that there almost certainly will be a fully open source branded Java release (with class libraries) coming from one of the JCP participants within the next year — and yes, IBM's name is being bandied about. Sun has to decide whether to resist this development or get ahead of it.

They haven't yet decided. I'm doing what I can to strengthen the hand of the pro-open source folks inside Sun.

P.I.: What's your opinion of the recent Sun-Microsoft 10-year cooperation agreement? How will this affect open source software and developers?

E.R.: So far it's not clear there will be any effect. The possibility that might have worried me is Sun succumbing to Microsoft pressure to stop supporting OpenOffice.org development, but it's pretty clear that Novell and IBM are ready to step into that gap.

The most interesting possibility is long-term. It might be that what Microsoft actually bought was the opportunity to build Blackthorn (their codename for the generation-after-next Windows OS) around the Solaris kernel. It's entirely possible that they're planning to pull a maneuver a lot like Apple did with Mac OS X, with Windows running as a set of libraries or emulation layers over a Unix core.

There is an arguable case that Microsoft's strategic planners are evil, but no case at all that they are stupid. The Windows codebase and architecture are a disaster area, as the Sasser and Netsky worms (for example) have just reminded us. Microsoft's got to blast its way out of that somehow, and joining the Unix resurgence while remaining

closed-source is about the smartest response I can imagine within the limits of their institutional needs.

P.I.: In a recent statement, JBoss CEO Marc Fleury defended Sun's position that Java should be closed, as opposed to your own views that Sun should open source Java. Can you comment on that? (<http://www.linuxpipeline.com/howto/19400090>)

E.R.: My interpretation was that Fleury thinks proprietary Java will leave him less exposed to competition. That's fine for him, but bad for customers — and customers should remember that.

P.I.: Why do we “need” a complete Java Platform, from an open source perspective (as opposed to a free software perspective)?

E.R.: To avoid having to duplicate a lot of work and dealing with inevitable incompatibilities between different implementations. We have better things to be spending our time on.

P.I.: Does having an open source, GPLed JVM (like Kaffe) help or harm the argument that Java should be opened up?

E.R.: I think it slightly increases the pressure on Sun to open source the reference implementation, but not by as much as some of our more idealistic troops would like to think. What we need is not several competing JVM/libraries, but just *one* that is ported everywhere.

P.I.: Is opening up Java something to do because it makes sense, or is it open sourcing for the sake of open source?

E.R.: I think that if Sun doesn't open source Java gracefully, on terms and timing of its own choosing, someone else — most likely IBM — is going to step in and rip control of the language out of Sun's hands in a way that will hurt Sun's reputation and market positioning. My spies tell me that recent developments in the Java Community Process make this almost inevitable within the next year.

So yes, I think there are good selfish reasons for Sun to open source Java now.

P.I.: From Sun's reply to your first letter:

“We understand Open Source better than anyone else. IBM is just wrapping itself in the flag, but still behaves like an old-fashioned systems company.” Can you respond to this, or is Sun on the mark on this one?



E.R.: They [Sun] talk the talk, but they don't walk the walk.

And recently they don't even talk the talk convincingly; their new president Jonathan Schwartz has distinguished himself with some astoundingly stupid claims about Red Hat Linux being “proprietary.”

P.I.: Is Sun's Java Desktop System — although built on Linux — actually a bad thing for open source?

E.R.: Anything that boosts Linux adoption is a positive. I'll cheerfully take that help from Sun, because its effects will outlast all the crap they've been talking lately.

P.I.: What can Sun do to prove they finally “get” open source?

E.R.: Open source the JRE and the class libraries.

ON SCO AND OPEN SOURCE LEGAL ISSUES

P.I.: What would you like to say about SCO?

E.R.: SCO is a nice domestic American demonstration of what al-Qaeda is proving all over the rest of the world: once you degenerate past a certain level of evil in your thinking, it corrodes your brain so you start behaving like an idiot. Suing IBM and pissing off the entire open source community over bogus claims to own every piece of code that has ever been in the same building with the AT&T Unix sources was kind of like flying two jetliners into the World Trade Center — it got spectacular short-term results, but the payback is a *bitch*, baby.

Here's where the analogy breaks down, in at least two ways:

One: Darl McBride is nowhere near as evil as Osama bin Laden. But he didn't start anywhere near as smart, either, so he didn't have as far to fall before SCO's press releases became laughable, self-destructive drivel.

Two: Unlike Osama, Darl actually did the world a favor. If I had had the option of custom-designing a set of facts best designed to get a favorable court decision on the legitimacy of open source and the GPL, I'm not sure I could have done better than this. I'm not worried about the outcome.

In fact, if I were Microsoft, I'd be concluding right about now that the at least \$66M I'd pumped into SCO was a big, big mistake. We've developed institutions to cope — defense funds, Groklaw (<http://www.groklaw.net/>), OSRM (<http://www.osriskmanagement.com/>), those sorts of things. SCO challenged us, we made antibodies, and as a result we're kind of vaccinated for the next time around, when Microsoft attacks directly rather than through a sock puppet.

P.I.: With the actions of SCO and JBoss' claim to “indemnify and defend JBoss customers from legal action alleging JBoss copyright or patent infringement,” do you think that open source liability insurance will be needed in the future of software development in order to defend from accusations such as those against AutoZone, for example?

E.R.: I doubt that anti-open source lawsuits will ever become a serious threat, because I think we're going to win the confrontation with SCO in such a convincing way that IP predators will seek other, softer, targets.

However, I think there is a legitimate role for those selling insurance against the possibility that I am woefully wrong about this. :-)

*They [Sun] talk the talk,
But they don't walk the walk.*

OTHER CURRENT EVENTS

P.I.: What is your opinion about the European Union's recent antitrust decision against Microsoft? Will it make a difference?

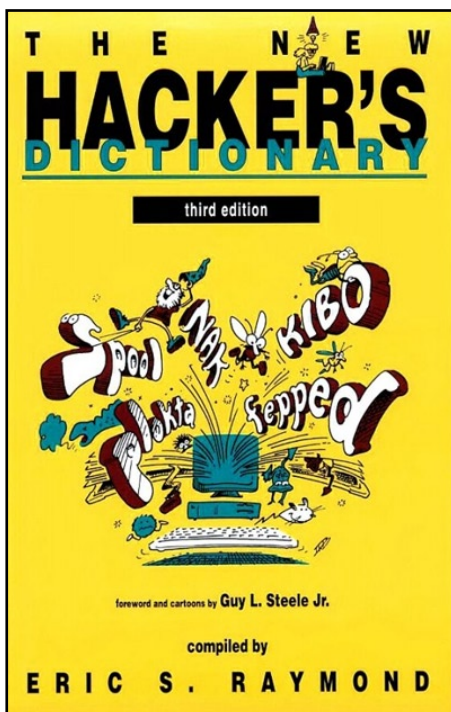
E.R.: I expect nothing but incompetence and low-grade evil from government regulators. Therefore I am never disappointed and seldom surprised.

I don't think the EU's decision will come to anything for the same reason I never expected the antitrust verdict in the US to make a difference. One way or another, Microsoft will find the EU's price, just like they found the US DoJ's.

The net result will be that Europeans will be worse off by the amount of freedom they sacrificed when they allowed antitrust laws to be enacted, without having gained the supposed benefit of the laws. Almost all government intervention in markets is like this; it's the exceptions that are rare and noteworthy.

P.I.: How do you think the dot.com boom/dot.com bust has affected the availability of hackers to participate in open source development projects?

E.R.: Very little. Judging by things like the rate of Freshmeat (<http://www.freshmeat.net>) announcements, the long-term growth curve stayed on basically the same exponential through both boom and bust.



I think this is because the economic forces pushing the world towards open

Shut up and show them the code.

source are deep, structural, endogenous -- not much affected by surface phenomena like stock bubbles.

ON LINUX

P.I.: How did you meet Linus Torvalds? What's he like?

E.R.: In 1996 at the first and last conference on Freely Redistributable Software. We had exchanged e-mail beforehand -- he was going to trade an autographed Yggdrasil CD-ROM for an autographed copy of *The New Hacker's Dictionary*. My first words to him after we shook hands were "Sorry, Linus, I forgot the book." And his first words were "That's okay. I forgot the CD."

P.I.: What parts of Linux can you point to and say, "I made a real difference here"?

E.R.: Lots of Emacs modes -- a lot of people don't know it, but I designed both the CVS and GNU debugger interfaces in Emacs, and I think I have more code in the Emacs libraries than anyone but RMS himself. Fetchmail. The courses library. I maintained the code that is now libungif for about five years, and a good big piece of the PNG library is mine... Next time you're doing a CVS checkin or GDB session through Emacs, think of me. That would be my code you just used there.

P.I.: Which distribution of Linux do you personally use/prefer?

E.R.: Fedora.

P.I.: As Linux becomes more popular, will it be targeted by viruses?

E.R.: Maybe, but the Unix security architecture makes a "virus" in the strict sense (that is, code that patches the OS itself) near to impossible. I'm not worried.

JUST FOR FUN

P.I.: Inquiring readers want to know: what's your home system like?

E.R.: See <http://www.catb.org/~esr/writings/ultimate-linux-box/>.

P.I.: What was some of the most challenging programming/coding you've ever had to do? The most fun?

E.R.: Probably my biggest challenge and most fun in the last couple of years

was doclifter, a program that uses a complex combination of compiler technology and heuristics to translate Unix manual pages (and other troff macros as well) into well-structured XML-DocBook. That was widely supposed to be impossible before I did it -- everybody thought you absolutely needed human judgment for the job.

P.I.: -- Any plans for another book any time soon?

E.R.: I'm thinking about doing a book on usability engineering for Unix programmers.

I'm also planning a fourth edition of *The New Hacker's Dictionary*.

P.I.: Vi or Emacs?

E.R.: Emacs. Though I have vi in my fingers too, and occasionally use it for small jobs when I'm not on my home machine.


P.I.: What does getting a gun license have to do with getting a marriage license?

E.R.: Oh, you want *that* story.

(This, gentle reader, is where the reporter presumes on her prior acquaintance with me from before I was all famous and stuff).

In 1996, my lady Cathy and I went to the Chester County courthouse to get a marriage license. While we were there, we figured we'd take care of another bit of pending paperwork. Which is how we came to be ambling out of the courthouse entrance with three sets of papers on our hands -- one marriage license and two applications for permits to carry concealed firearms.

These forms are quite distinctive. The security guard at the door looks at the forms, and at Cathy, and at me, and back to the forms, and at Cathy, and at me, and says, in a confiding manner:

"You know, it's not too late to back out!" 

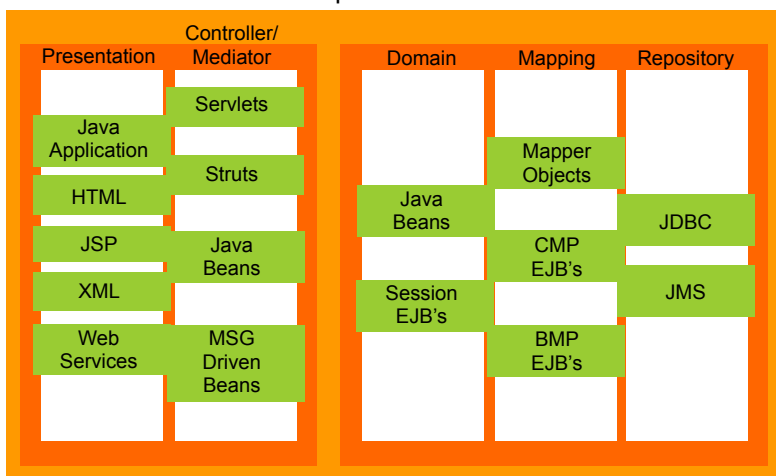
Freelance writer Terri Wells has spent five years covering the Internet and other high technology topics. She currently spends her days working with technophobic professors at Duke University.

Web Development in J2EE Using the MVC Design Pattern

Web services application development is a huge topic covering a broad range of technologies and topics. In this article we will discuss web services development in J2EE and examine the Model/View/Controller design pattern, thereby explaining how it separates business logic implementation and persistence from presentation. We shall briefly introduce the Struts Framework, one that facilitates web services development within the IBM WebSphere Studio Application Developer edition. In the ensuing months, we will discuss web application development in Microsoft's .NET framework as well and provide a comparison between the two major platforms.

What is a Web service? The question is perhaps best answered by first describing what a Web service is not. It is not a subscription service but rather represents web server business logic processing. Web service fundamentals always require immutability, whereas flexibility lies in the approach used to develop the web service. Typically, in the Java world, a web server resides in a container such as IBM's WebSphere Application Server and provides low-level services such as automatic memory management, garbage collection, and connection pooling. WebSphere's "Studio Application Development" tools support many Apache open-source tools, including the Jakarta Struts framework. The overall WebSphere Application Server (WAS/WSAD) architecture is component-based and layered in multi-tiers. Let's examine the infrastructure as demonstrated in the following illustration:

J2EE Component Containers



This illustration demonstrates how the WSAD infrastructure is layered in five tiers. The *presentation layer* contains the Java application, HTML, JSP pages, and XML technologies to return responses to the client. Notice how the Web services component is also part of this tier. The *Controller/Mediator* tier encapsulates Java Servlet, Struts Framework, JavaBeans, and MSG Driven Bean technologies. The *Domain* layer contains the business logic whereas the mapping layer utilizes container managed EJBs and Bean Managed Persisted EJBs to implement business rule-driven tasks. Persistence to a relational database such as SQL Server 2000 uses JDBC drivers to achieve cross-platform interoperability.

The *Web* keyword indicates how service provider functionality

is exposed to the client and occurs on a server residing somewhere on the Internet. The event is typically a response to client requests. To be more specific, the event requires a handler to forward requests to a web server where a mediator object (a servlet functioning as a MVC controller) intercepts client requests, interprets the messages, and forwards them to an appropriate object (EJBs or JavaBeans) for processing. Ultimately, a response is returned to the client via a web-compliant browser, an ASP.NET page, or a Java Server Page (JSP).

Examining Servlets and Java Server Pages

The process described above occurs in a Java J2EE environment by using Java Servlets for processing client requests and delegating the requested task(s) to a Java Bean or an Enterprise JavaBean (EJB) for data persistence or retrieval. Subsequently, the Servlet utilizes a Java Server Page (JSP) to return the response or results to the client. J2EE specifications provide support for Web development and offer numerous alternatives for creating Web applications. Java Servlets have become increasingly popular in recent years and interact seamlessly with JSPs. Servlets offer the advantage of being written in Java, implementing presentation logic and managing web browser client requests. Additionally, they create a single heavyweight process and facilitate user requests by using a lightweight thread maintained by the Java Virtual Machine. A servlet is designed to map to one or more URLs. When the server receives a specified servlet's URL request, the `service()` method is invoked and subsequently responds. Each request is associated with an individual client call. This allows multiple users to invoke the service method simultaneously, a major benefit for users.

Unfortunately, servlets also have a negative side. HTML is hard coded, making modifications to a servlet difficult because for every change, a servlet recompile is necessary. Also, determining a user's locale, language, and other variants is difficult to accomplish in HTML. In fact, internationalization issues are frequently bypassed in Web development because a unique servlet is required for each individual locale. This is altogether too cumbersome. There must be another answer.

Java Server Pages (JSPs) Resolve Servlet Issues

The introduction of Java Server Pages (JSPs) was developed to alleviate many of the problems encountered with Java Servlets. JSPs are an extension to the Java Servlet technology. Stating it succinctly, a JSP's life cycle ends as a servlet so they are a natural fit when paired with servlets. JSP pages are text documents containing a `.jsp` extension, and represent a combination of static HTML and XML-designed tags and scriptlets. The tags and scriptlets encapsulate business logic and generate content for the pages. The `.jsp` files are processed and converted to Java class files, then subsequently executed indirectly by a Web container. Many JSP advantages exist, including the following:

- JSPs are compiled rather than interpreted, thereby enhancing performance.
- JSPs support scripting and offer full access to the Java language.
- JSPs can be designed as custom tags.

JSP Model 1 and Model 2 Architectures

Two separate JSP technological approaches exist for creating Web applications.

- JSP Model 1 Architecture
- JSP Model 2 Architecture

Several differences exist between the two technologies. The prime difference lies in how the request is processed. With Model 1 architecture, a single JSP manages all requests with responsibility for displaying and returning responses to the client. In contrast, the Model 2 architecture differs in that the request is intercepted by a servlet, herein now referred to as a controller servlet. This servlet manages incoming requests and makes the determination as to how to delegate the request to an appropriate Java Bean or Enterprise Java Bean for further processing. Upon completion of the given task, the servlet calls a specific JSP to return results to the client. Consider the following:

The client browser forwards a request directly to a JSP rather than a servlet. This preserves the concept of separating presentation from logic, whereas forwarding a request to a servlet does not. Sending a client request to a JSP allows the servlet to execute front-end processing such as user-authentication and authorization before forwarding the request to an object (Java Bean or EJB) for further processing. Upon completion, a JSP returns the results/response to the client. Notice how the web server component utilizes servlets and Java Server Pages to process all client requests.

Applying the Model/View/Controller Design Pattern

IBM's WebSphere Application Server has adopted the "Model, View, Controller (MVC)" design pattern created by Xerox PARC for Smalltalk-80 in the 1980's. This model is becoming increasingly popular with the programming community. Significantly, MVC was selected by Sun Microsystems as the recommended model for its J2EE specifications. MVC can be used by any programming language or platform and enforces the separation between (1) the view, (2) the model, and (3) the controller. It separates data input and processing from data output.

The *view* interface presents us with a wide range of options such as making a selection from a series of radio buttons or a drop down list. For example, the user can select the type of delivery service, i.e. UPS, FedEx, USPS, or DHL from the list. Traditionally, the view is presented in HTML format. However, an interface may be also presented as XHTML or XML/ XSLT templates. Because the view is display-neutral, it can present many diverse views of the same data. A view always reflects any event changes occurring in the "model" layer.

The *model* contains business objects which interact directly with JavaBeans or Enterprise JavaBeans (EJBs). They implement transactional business rules such as data persistence or retrieval.

The *Controller* serves as interpreter by intercepting client requests and calling a servlet's *service()* function to fulfill the client's request. The controller applies no formatting nor does it output anything. It serves only as a notification service both to the *view* and *model* to respond accordingly.

Applying the Mediator Design Pattern

WebSphere architects have taken the MVC concept one step further by applying the *Mediator* design pattern introduced in *Design Patterns* by Erich Gamma. The Mediator/Controller pattern places another layer of indirection between the view and the model/domain. The Mediator/Controller captures and decouples application-specific functionality from presentation technology by

implementing behavior usually existing as methods in presentation classes. The mediator can be better understood by viewing it as an abstract interface that must be implemented by providing a *concrete* mediator object. When a client submits a request, the mediator intercepts the request and delegates the task to a concrete class of objects to fulfill mediator/controller directed tasks. The mediator is also responsible for controlling and coordinating the interactions of groups of objects. As Gamma explains, "the Mediator serves as an intermediary that keeps objects in the group from referring to each other explicitly. The objects only know the mediator, thereby reducing the number of interconnections." Doing so places behavior in one class, thus allowing the behavior to be modified or replaced locally. Abstract interface substitutability is the key to object reuse.

Introducing the Front Controller Pattern

The J2EE specification contains the "Front Controller Pattern", a design pattern that defines how a web tier controller should be implemented. It is located at "<http://java.sun.com/blueprints/patterns/index.html>". It reads as follows: "The Front Controller pattern defines a single component that is responsible for processing application requests. A front controller centralizes functions such as view selection, security, and templating, and applies them consistently across all pages or views. Consequently, when the behavior of these functions needs to change, only a small part of the application needs to be modified." This is precisely the methodology the Jakarta Struts framework uses. The framework is comprised of several classes/components. In addition, the framework organizes design patterns and provides a generic approach to designing web applications.

The Struts framework was created by Craig R. McClanahan in 2000. As previously demonstrated in the illustration, the Struts framework resides within the web container component. This allows the Struts application to leverage the advantages of services provided by the container, i.e. managing requests via the HTTP and HTTPS protocols.

The Struts Framework provides a modular framework from which you can develop your web application. It is comprised of a controller servlet, numerous beans and classes, configuration files, and tag libraries. Let's review some of the components the Framework supports:

• Struts Tag Libraries

- o Bean Tag Library
- o HTML Tag Library
- o Logic Tag Library
- o Template Tag Library

The *Bean Tag* library encapsulates tags needed to display static and dynamic Web pages. The tags are used to store and display data, write international type messages, and embed scriptlets for JSPs. Here is a list of tags included in the Bean Tag library:

- *Define* - Define new attributes and make them available at a pre-defined scope, i.e. request, page, session, or application scope.
- *Include* - Include pages and fragments from other files in the current file's source.
- *Internationalize* requested messages from the Resource source file and replacing the current tag with an appropriately internationalized message in any language.
- *Write* - Write data from exposed beans at any level of scope.


The *HTML Tag* library includes tags for all standard HTML controls. This library provides two important features: linking and internationalization. The tags are used to create page links in two formats: hyperlink or anchor.

The *Logic Tag* library is directly responsible for basic first and second order logic functions utilized to portray JSP flow and functionality as well as the controls they provide, depending on the state of the form beans and input beans.

The *Template Tag* library offers support for creating dynamic templates based on the JSP Framework for all pages sharing a common format. These are similar to style sheets or the standard include directive in JSP technology. They are dynamic. Here are three template tags:

- *Get* - Retrieve content from a request scope bean.
- *Insert* - Insert the retrieved content into the specified template.
- *Put* - Create a request scope bean that specifies content used by the get tag.

In order to bring all of these components together, we use a set of XML-configuration files to store mappings of different actions.

Now that we have introduced some of the essential features in the Struts Framework, we will need to provide some examples. Because space is limited, this article will be continued in the next issue of *Plug In*. We will build a Struts example in WebSphere Studio Application Developer. It will consist of a simple Submit form called the ActionForm. In order for this bean to work, we will use Struts tags for creating an HTML form and all controls defined within it. This form will be embedded within a JSP page. Additionally, we must build an ActionForm class to extend the ActionForm class for each input form required in an application. We will also build a simple web service in Microsoft's Visual Studio for purposes of demonstrating how a web service can be constructed on other platforms. For that particular example, we will use Simple Object Access (SOAP) and HTTP to build the application. Until then, happy computing. 

Resources:

Enterprise Java Programming with IBM WebSphere, Kyle Brown et al, IBM Press, 2003

Building J2EE Applications with IBM WebSphere, Nillson and Mauget, Wiley, 2003

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Interoperability Between .NET & J2EE, Peltzer, McGraw-Hill/Osborne, 2004

Java Servlet Programming, Hunter & Crawford, O'Reilly, 2001

Programming Borland JBuilder Developer's Guide, Landy, Siddiqui, Swisher, et al., SAMS, 2003

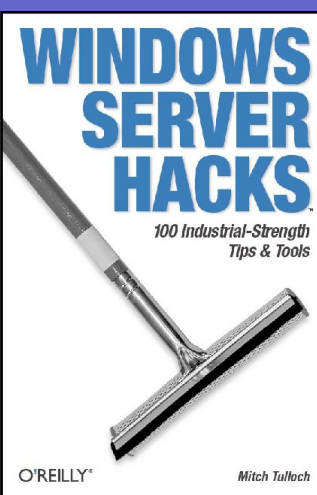
.....
Dwight Peltzer is also the author of *J2EE and .NET Interoperability* (McGraw-Hill/Osborne, ISBN 0-07-223054-1). Pick it up at your nearest bookstore today!



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Unattended Installation of Windows Components

Here's a simple way you can add or remove system components when deploying Windows 2000 and later.

If you're responsible for administering a large number of computers, you appreciate methods of automating common administrative tasks. A need to add or remove individual system components might result from a change in corporate policy, discovery of security vulnerability, or simply a newly emerged business need. Using sneakernet for such tasks

might take considerable amount of time.

Fortunately, Microsoft provides a way to accomplish this task in an unattended way. Windows 2000 and XP contain the SYSOCMGR.EXE file in the %systemroot%\system32 folder. When executed, this command-line utility analyzes the content of two files: sysoc.inf (the existing configuration file, located in %systemroot%\inf folder) and a specially formatted text file (which you can give an arbitrary name) that contains a listing of components to be added or removed.

The sysoc.inf file is used by Windows when running the Add/Remove Programs applet in the Control Panel. Its format is typical of standard .inf files: it is divided into several sections, each starting with a name enclosed in square brackets. The [Components] section consists of multiple lines, one per component. Each line starts with the component name, followed by references to .dll and .inf files used during installation or uninstallation. Hide entry determines whether the component appears in Add/Remove Programs applet.

The second text file (which you need to create) can have an arbitrarily chosen name; for example, c:\comp.txt will do nicely. This file can be created using Notepad and should contain the [Components] section, followed by one or more lines of the following format:

Component_Name = On/Off

Here, On is used for installation and Off is used for uninstallation. For example, to remove Windows Messenger and add Faxing, the file should contain the following lines:

[Components] Msmmsgs=Off Fax=On

You can also install optional networking components by including the line Netoc=On and the additional section [NetOptionalComponents]. This section would contain lines that refer to different networking components, such as SimpTcp or wins, like so:


SimpTcp=1

wins=1 A value of 1 causes installation and 0 causes uninstallation. The names of the components are the same as the ones used during unattended installation of the operating system, which are documented in the Unattended.doc file on the Windows installation CD in the Support\Tools folder.

Running the Hack

Once you've created your Comp.txt file, you can now use sysocmgr.exe in unattended installation mode to add or remove Windows components. Simply run the following command:

SYSOCMGR.EXE /i:%windir%\inf\sysoc.inf /u:c:\comp.txt

Note that this approach will not work with the COM+, Distributed Transaction Coordinator, Microsoft Fax, and Windows Media Player services, because these components are not removable. 

.....
This excerpt comes from Hack #67 of [Windows Server Hacks](#), by Mitch Tulloch (O'Reilly Media, ISBN 0-596-00647-0, 2004).

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OPEN SOURCE: PayPal Reaches Out to Developers



by Terri Wells

Already deeply involved in e-commerce, PayPal wants to get even more involved, and it's hoping to get help from lots of friendly developers. Early in May, the company introduced PayPal Web Services, a set of application programming interfaces (APIs) to the PayPal platform based on open standards. PayPal hopes that developers and merchants will use these APIs to create e-commerce applications that integrate with the PayPal platform.

Currently, PayPal Web Services offers three APIs, with the fourth one to be available at the end of the second quarter. TransactionSearch lets a user search for transaction I.D.s and basic details with a payment date or customer as the starting point. GetTransactionDetails returns more information, starting from a given transaction. RefundTransaction reverses a given transaction, sending either a partial or a full refund to the purchaser. And finally, MassPay transfers funds to one or many recipients -- a potential alternative to cutting lots of paper checks or setting up direct deposit for a group of employees.

PayPal isn't just giving lip service to open standards, either. Have you heard of Simple Object Access Protocol (SOAP) and Web Services Description Language (WSDL)? If you haven't, you should have; the World Wide Web Consortium (W3C) has draft documents on both of those, and -- you guessed it -- PayPal Web Services supports both of those standards. The W3C, for those who don't know, was created way back in 1994 to develop common protocols to promote the evolution and interoperability of the Web. It has more than 350 member organizations (including all the big technology companies you'd expect) and -- best of all -- "all W3C software is open source/free software, and GPL compatible." That's a direct quote from W3C's Web site.

Of course, that's almost a no-brainer for a company like PayPal. I first used their services several years ago, when they started making their name on eBay as the service to use to pay for auctions. They out competed other auction payment services, including eBay's original homegrown service, the hard way: not just by being first (though that helped), but by being the easiest to use and the most versatile. Using open standards is really just an extension of that thinking.


The company is showing it's serious about attracting

developers in other ways. For example, there's the newly-launched PayPal Developer Central. This little information hub can help developers learn all about the new PayPal APIs, both directly from PayPal and through chatting with other developers on forums. There's even the PayPal Sandbox, a testing environment for PayPal Web Services. PayPal is also going all out by throwing a party to attract developers -- with the help of its parent company eBay. The eBay Developer Conference, set for June 23-24 in New Orleans, will offer technical sessions and hands-on labs. Tim O'Reilly will be on hand to give one of the keynote addresses. Five separate tracks of programming will address various aspects of application development and growing your business with this e-commerce technology.

So why should you care? Well, to begin with, PayPal is not just a fly-by-night company. And neither is eBay. Both of these firms made their mark by doing one thing really well. In eBay's case, it was hosting online auctions; in PayPal's case, it was online payment. These companies are now the first ones anyone thinks of when they think of those particular fields. You don't win a market position like that unless you're doing a lot of things right.



Now these two companies are looking to expand a little beyond the areas they're automatically associated with. That's often a cause for concern, because expertise in one area doesn't guarantee expertise in others. In this case, though, PayPal has made a natural choice, very tightly connected with what it does best. In effect, PayPal is saying to merchants and developers, "here, take advantage of what I know and let me help you with your online payment system; you know how well I do it." I haven't forgotten the horror stories I've heard about e-commerce transactions going awry -- and, truth to tell, PayPal did have its share at one time. But I've heard very few horror stories about PayPal any more...and if I were a developer, I'd much rather put together my applications for a system that has had a lot of its bugs worked out of it already.

Sadly, I won't be at eBay's Developer Conference. But it should be very educational for those who can make it. Unless my guess is off, PayPal's position as a proven king of online transactions will get even more secure from here on out...and the fact that the company is using open standards rather than going the proprietary route is good news all around. Here's hoping we all find electronic cash in our e-mail. 

NETWORK SECURITY HACKS

100 Industrial-Strength Tips & Tools



ENFORCE USER AND GROUP RESOURCE LIMITS

Whether it's through malicious intent or an unintentional slip, having a user bring your system down to a slow crawl by using too much memory or CPU time is no fun at all. One popular way of limiting resource usage is to use the **ulimit** command. This method relies on a shell to limit its child processes, and it is

difficult to use when you want to give different levels of usage to different users and groups. Another, more flexible way of limiting resource usage is with the PAM module **pam_limits**.

pam_limits is preconfigured on most systems that have PAM installed. All you should need to do is edit `/etc/security/limits.conf` to configure specific limits for users and groups.

The `limits.conf` configuration file consists of single-line entries describing a single type of limit for a user or group of users. The general format for an entry is:

domain type resource value

The **domain** portion specifies to whom the limit applies. Single users may be specified here by name, and groups can be specified by prefixing the group name with an **@**. In addition, the wildcard character ***** may be used to apply the limit globally to all users except for root. The **type** portion of the entry specifies whether the limit is a **soft** or **hard** resource limit. Soft limits may be increased by the user, whereas hard limits can be changed only by root. There are many types of resources that can be specified for the **resource** portion of the entry. Some of the more useful ones are **cpu**, **memlock**, **nproc**, and **fsize**. These allow you to limit CPU time, total locked-in memory, number of processes, and file size, respectively. CPU time is expressed in minutes, and sizes are in kilobytes. Another useful limit is **maxlogins**, which allows you to specify the maximum number of concurrent logins that are permitted.


One nice feature of **pam_limits** is that it can work together with **ulimit** to allow the user to raise her limit from the soft limit to the imposed hard limit.

Let's try a quick test to see how it works. First we'll limit the number of open files for the guest user by adding these entries to `limits.conf`:

```
guest soft nfile 1000
guest hard nfile 2000
```

Now the guest account has a soft limit of 1,000 concurrently open files and a hard limit of 2,000. Let's test it out:

```
# su - guest
$ ulimit -a
core file size (blocks, -c) 0
data seg size (kbytes, -d) unlimited
file size (blocks, -f) unlimited
max locked memory (kbytes, -l) unlimited
max memory size (kbytes, -m) unlimited
open files (-n) 1000
pipe size (512 bytes, -p) 8
stack size (kbytes, -s) 8192
cpu time (seconds, -t) unlimited
max user processes (-u) 1024
virtual memory (kbytes, -v) unlimited
$ ulimit -n 2000
$ ulimit -n
2000
$ ulimit -n 2001
-bash: ulimit: open files: cannot modify limit:
Operation not permitted
```

There you have it. In addition to open files, you can create resource limits for any number of other resources and apply them to specific users or entire groups. As you can see, **pam_limits** is quite powerful and useful in that it doesn't rely upon the shell for enforcement. 

This excerpt comes from Hack 19 of *Network Security Hacks*, by Andrew Lockhart (O'Reilly Media, ISBN 0-596-00643-8, 2004). Grab a copy at your favorite book store, today!

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Software Development	10+



The Rise and Demise of the Desktop

by Katharine Miller

Portability. Mobility. Wireless.

These buzzwords are popping up all over the place with the emergence of handheld and portable computers. From the number of reviews and articles cropping up about mobile devices, one wonders if the desktop is just being left to gather dust.

In mid-January 2004, Meta Group released a study about the decline of desktop usage. Meta expects the popularity of desktops to plummet as new technologies are adopted. Meta also estimates that by 2006, only 45 percent of corporate users will be primarily dependent on a desktop machine, but 40 percent will rely on notebooks or tablet PCs.

The report is not the first speculation that the end of the desktop era is near, and it won't likely be the last. However, the key word to note in this report is "corporate." More corporations are beginning to investigate the benefits and costs of handheld devices, tablets, blades, and smart displays. Their employees may not need all of what today's desktop has to offer. Or perhaps a more truthful observation, delivered in a kind manner, would be that their employees don't need all of the distractions offered by today's desktop.

Over the past few years, every new device has threatened to knock the desktop out of its dominant computing position. In late 2000, PDAs were believed to be the new desktop replacement of the future. As early as 2001, reports sprung up of notebooks sales surging as desktop sales were starting to plunge. And now the tablet PC looms in the foreground with hopes of taking over the top computer spot. But still the desktop hangs on like an employee serving out his two-week's notice.

It's unlikely to see droves of users picking up their towers and hurling them through windows onto the lawn simply because new technology is available. Still, desktops are in real danger as they reach their individual "end of life", when the consumer must decide whether to replace it with another desktop unit or opt for more portable appliance.

As the market stands now, the desktop's biggest competitor is the notebook. Consumers looking for real PC power with portability are turning to notebooks as replacements. Market research reports predict an increase in PC sales this year with at least 27 percent of that being contributed to notebook PCs. According to IDC, notebook shipments have steadily increasing since 1998. And in three years, notebook sales could make up 35 percent of PC sales in the U.S. It is also estimated that 2007 is the year we'll see average users interacting with four or more computing devices on a regular basis.

Which of those four computing devices gets the most use depends on the user. Let's say the average user in 2007 has a PDA, notebook, desktop, and smartphone. Of those four devices, three are in competition for everyday use. In an ideal setting, the notebook would be for long-distance traveling; the PDA and smartphone would get the daily commute, and the desktop would be the home base for all the devices. The reality is that fingertips


are already a little weary and overwhelmed by the surge of available technology.

A recent survey conducted by Croner Consulting showed 60 percent of the respondents felt that notebooks, PDAs, and cell phones increase stress levels. Croner HR expert Richard Smith said, "It is likely that many employees think a company mobile means they should always be contactable and a laptop means they should continue to work at home. What should be seen as a benefit of a job may be becoming a negative and businesses need to manage this to ensure employees remain motivated." Everyone deals with stress in their own way, but perhaps companies should factor in the cost of replacing portables that mysteriously land on the sidewalk 10 stories below or were "accidentally" gnawed to chips and wires by the neighbor's Pit bull.

Will the desktop become obsolete? In time, we may see more of a decline in corporate use as well as casual consumer use, despite the alleged stress levels. Most desktops, and several notebooks, are far more computer than the average user really needs. Which is why there may be a boost in PDAs and handhelds over the next few years, especially after web applications and other software are improved or perfected. The current weaknesses of the tablet PC (e.g., lack of storage, cost, insufficient number of digital-ink applications) prevent it from being a formidable foe at this point.

However, before the desktop goes the way of the dodo, we should see it evolve at least once more. As users rely more on portable devices for business use, the desktop could transform into a secondary entertainment system in many homes. Rather than replacing the ancient TV/VCR combo in the bedroom with a newer version, users can make a little room and hook up the old desktop, complete with flat panel monitor. Attach a better set of speakers, and you could have a multimedia experience sans lap burn without leaving the bed.

What the desktop lacks in portability, it compensates for in expandability. Some notebook models are being equipped with DVD-RW and other accessories, but there's only so much hardware that can be installed in one notebook. Depending on the size of the tower, you can have more internal storage in a desktop system. Within one desktop unit, you can have a couple of burners and a hard drive for each OS you choose to run, and even an extra USB card to plug in those extra peripherals.

Corporations may be looking at reducing the use of desktops within two years, but corporate trends need not dictate personal computer use. Consider some of the options above before hurling your dusty desktop through your living room window. You could use the money not spent on a new system, or replacing window-panes, on the new mini iPod. 

Katharine Miller is a freelance writer in Orlando, FL. To read more articles or view her silly robots, visit <http://www.blissfullybitter.com>



HARDWARE:

DISTRIBUTED
COMPUTING

by Jason Kao



A supercomputer is defined as “a main-frame computer that is among the largest, fastest, or most powerful of those available at a given time.” Based on Top500.org’s TOP500 List for November 2003, the current fastest and most powerful supercomputer is the Earth-Simulator at the Earth Simulator Center in Japan. Built in 2002 by NEC, this computer features 5120 processors. To put this in perspective, most desktops are single processor computers. Supercomputers are expensive and few. But with so many research initiatives going on today that rely on heavy computer calculations, how can budget strapped organizations acquire funding for such extraordinary computers? This is where distributed computing enters.



What is distributed computing? Well, if we break down the term, to distribute means to pass out or spread, and to compute means to calculate. Putting the two together, distributed computing is the latest phenomenon

intertwining research of math and science with the general public through the Internet. Rather than building and maintaining a supercomputer merely to sit all day and do math calculations, organizations have turned to distributed computing, tying together computers from around the world, and using their spare cycles to calculate whatever the project needs calculated. As far as users go, to be a part of distributed computing, a computer user just has to download and install the software for a particular project and let the program run in the background. It is completely voluntary, and some organizations offer rewards for being part of the program.

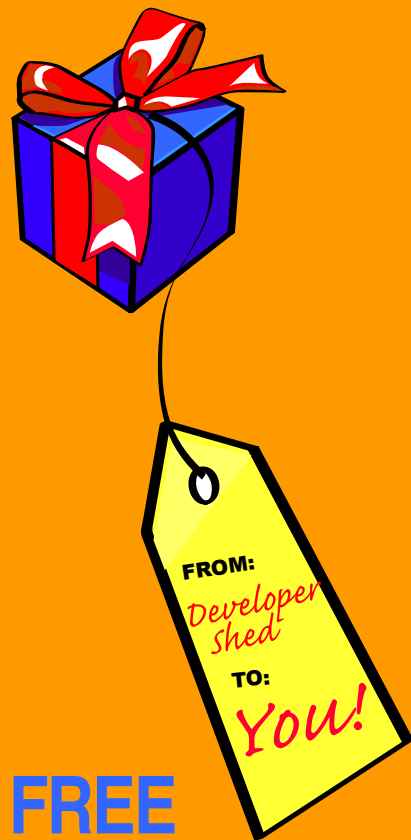
Leading Examples

Currently, the top distributed computing network is PrimeNet (<http://mersenne.org/primenet/>). PrimeNet is a world-wide, distributed Internet research computing system created in 1997 for the Great Internet Mersenne Prime Search (GIMPS). People who take part in this project run a simple pro-

gram on their computers, a program which constantly tests Mersenne numbers to see if they are prime numbers. While the fastest supercomputer hosts 5120 processors, the PrimeNet system connects over 65,000 processors at any given time. In technical terms, the virtual machine’s sustained throughput is nearly 9 trillion operations per second or 9 teraflops. This is an exponential rise from 1.4 teraflops in March 2001 when there were not as many computers actively participating, nor were the computers as powerful as they are today. Now understandably, the Earth-Simulator is still a much more powerful computer, boasting 36 teraflops of sustained performance since it is a localized system built for the sole purpose of performing calculations. But the PrimeNet system remains one of the most powerful computers in the world.

The latest achievement of the GIMPS project was on November 17, 2003 when 26 year old Michigan State University student Michael Shafer’s computer found the 40th known Mersenne prime, 220,996,011-1. This is also the largest prime number ever known. The discovery was quite amazing, not only for math geeks and distributed computing fanatics, but for the general public as well. NewScientist.com was the first to break the news, quickly followed by major publications like ZDNet and BBC. The number, 6,320,430 digits long, big enough to fill 1,087 pages of 8½ inch by 11 inch paper without margins, is evidence of just how powerful these programs like Prime95 (the program used by PrimeNet) can be by getting computers on a global scale to work together for a common goal.

What began as research project in the 90s is now a hobby, and even culture among computer enthusiasts. In reality, searching for prime numbers is pretty useless. There are many more useful applications like researching cancer and looking for a cure, like Stanford University’s Folding@Home project (<http://www.stanford.edu/group/pande-group/folding/>). The effort is currently being spearheaded by students at Stanford, and it boasts the participation of various



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Another well known project is SETI@home (<http://setiathome.ssl.berkeley.edu/>). SETI, which stands for the Search for Extraterrestrial Intelligence, is one of the largest research groups exploring the heavens via the use of radio telescopes with the goal of finding intelligent life on other planets. Its stated goal is "to explore, understand and explain the origin, nature and prevalence of life in the universe." They use distributed computing to help them sift through the large spectrum of radio signals gathered from numerous radio telescopes around the world.

Regardless of the application, distributed computing is a piece of Internet history, and the possibility of being a part of this history is still open. In this sense, it is reasonable to see why it is fun for people to download, install, and run these programs on as many computers they have access to. Not only is distributed computing a race to find an alien, it is a competition to see who can perform x amount of calculations a day. Distributed computing networks like Folding@Home keep track of individual user statistics. In fact, you can even create and join teams and fold – fold being a term for calculate – together as a team and be ranked. There are forums all over the Internet discussing distributed computing. Do these people have too

much time on their hands? No, they are just having a good time discussing a topic of interest like cars or baseball can be to anyone else. Distributed computing is sure to continue to prosper and its impact on the IT sector will be interesting. In the mean time I'm going to save this paper, head to bed, and let my computer find a cure for cancer. 

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SITE PROMOTION: BEYOND KEYWORD OPTIMIZATION

by Rob Schmults

The rate of change online used to be fun. Chasing the cutting edge was an exciting occupation with limited accountability. But now ROI, quarterly budgets, and the need to grow sales AND profits have replaced the cutting edge as the object of our efforts. Yet despite the transition to more traditional business goals and outcomes, the rate change remains the same.

Take keyword buys. This is still a relatively new phenomena, and many businesses are only just beginning to develop an approach to extract the benefits. Nevertheless returns have already been compressed as the cost of keywords has quickly been bid up to their marginal rates of return – and in some case beyond. The ease with which results can be tracked has allowed the market to be extremely efficient in pricing keywords, making it harder and harder for the buyers of words to generate a return.

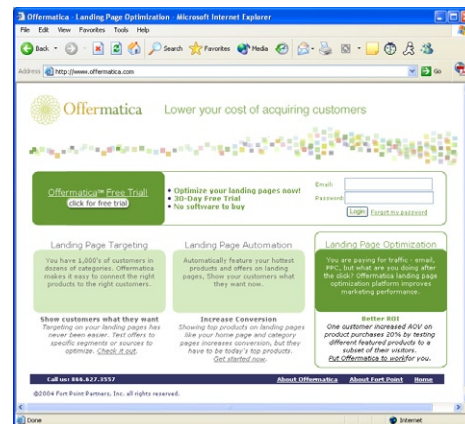
Pockets of gold still exist. Keywords that have been overlooked by competitors can still produce outsized returns. But these pockets will only shrink over time as more buyers enter the market chasing the same end customers.

To continue to extract value from keywords, marketers are going to have to turn inward. For most companies, getting the traffic is seen as the whole of the equation. But just as important is what you do with the traffic. So even as we are only starting to get the hang of keyword buys, we need to tackle landing page optimization.

To date, landing page optimization has been too hard and too expensive to generate a return. But with the returns on keywords contracting and the advent of new optimization tools, the

math behind such efforts looks better everyday.

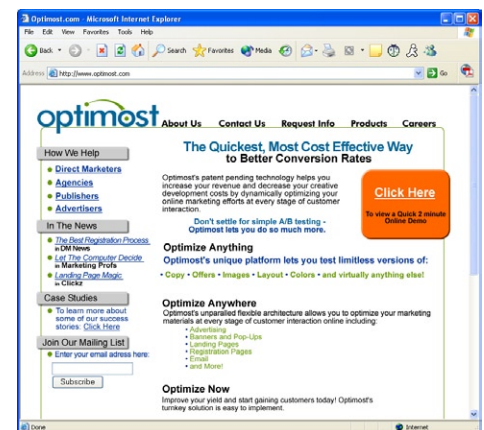
To date, most companies purchasing keywords have to settle with dropping a potential customer off at the home page. In some cases, they can send them to a category level page or to a particular product page. Going beyond this to a more customized landing page is simply too taxing in terms of time, people, and money. Simply getting the requisite page changes through IT is often a sufficient barrier in and of itself.



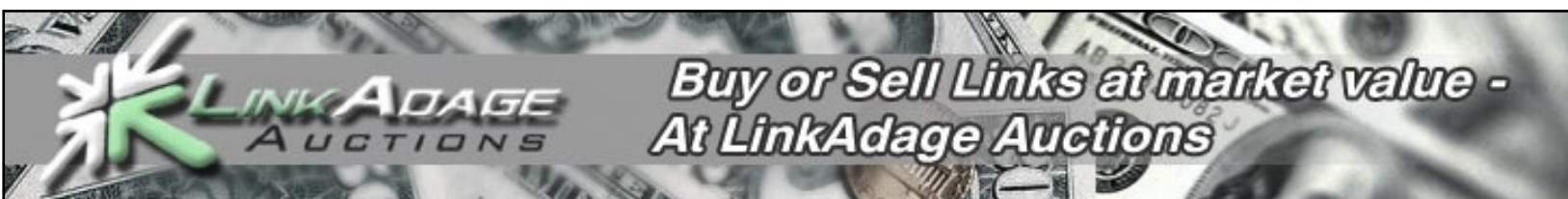
But solutions exist for these problems. Services like Offermatica (www.offer-matica.com) from Fort Point and Optimost (www.optimost.com) offer tools that allow marketers and merchants to cost-effectively manipulate a page to reflect any number of necessary variants. Now a home page can show language and featured products that clearly tie to the keyword that brought a potential customer to the site. Even product level pages can be improved, be it through highlighting particularly relevant product features, adjusting pricing and promotion, or showing related products -- all of which tie back to the source keyword.

In the case of Offermatica, the tool works as a hosted application. Portions of a page are defined as "mBoxes" that are then filled based on the keyword source. The content can be anything you would normally put on a web page – text, images, links, forms, etc. Because it is a hosted application, it bypasses the need for internal IT while providing the responsiveness needed to keep up with rapidly changing marketing requirements. And best of all, both Offermatica and Optimost are priced as a service – eliminating both difficulty and cost as an excuse for doing nothing.

Keywords – at least the ones that work – are not going to get any cheaper. They will remain a valuable tool for driving qualified traffic. But increasingly buying the right ones will only be the first step. Generating a return on the resulting traffic through landing page optimization will be the key to continuing to generate positive returns. □



Ron Schmults is an independent consultant who has worked in the Internet and E-Commerce space since 1994.



SITE PROMOTION TIP: Optimizing with > > > > > PAGE TITLES

by Julian Yanover

Most articles about search engine optimization say that you should optimize for as many keywords as you can, meaning that every new page you create must have a different title, optimized text, etc. This is not entirely accurate, especially when optimizing small sites. If you have a small site, it probably doesn't have much information, and maybe about one or two themes. If you check Overture's Search Term Suggestion Tool (<http://inventory.overture.com/d/searchinventory/suggestion>) you'll notice that most of the traffic goes to one to four keywords for each theme people search. If you are planning to create or you have a small site, you'll want to get the best results for the most searched terms.

Don't waste your time optimizing each page for a different keyword; you'll end up with a lot of optimized keywords that do not get any heavy traffic despite

having a good rank, and the ones that could get you tons of visitors per day won't rank well at all. How do you get around that? Optimize the site for a few keywords. Don't get me wrong. I'm not saying that every title, text, etc. must be identical in each page of your site. What I'm saying is that those keywords must be in every page.


Let's take an example: if the most searched term is "Art", the title of the main page should be optimized, for example, "Art". All other pages must have the word "Art". As a result, Dali.html should be optimized like this: "Dali - Art"; Picasso.html: "Picasso - Art".

Here's a brief example. Your new site is about an online museum of art, focused on the keywords "Museum of Art".

Main page title: "Museum of Art. The best museum of art online."

Picasso.html title: "Pablo Picasso - Museum of Art"

Dali.htm title: "Salvador Dali - Museum of Art"

This might look simple, but keep in mind that most people would place "Museum of Art" in the index and not in the other pages. By placing the phrase "Museum of art" in every page of the web site, you are giving it more power. You can even rank higher than a web site with thousands of inbound links that forgot this technique. 

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Julian Yanover is a well recognized SEO expert from Argentina, with hundreds of optimized web sites, currently working with [Video Juegos YA!](http://VideoJuegosYA.com.ar). Contact him at julian@videojuegosya.com.ar



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WEB SERVICES:

by Peter Lavin

PAYPAL SPOOFS

Opening my e-mail, my eye was naturally drawn to the high-priority notice from PayPal. PayPal is a service I use for receiving or sending payments online. Ever the optimist, I anticipated that it was a notification of receipt of payment into my account, preferably a large one. After reading a few lines I realized that something was not quite right and in fact, that someone was trying to spoof me.

Spoofing is sometimes referred to as “phishing” and generally takes the form of an imitation web page used to induce you to divulge your username and password. In this particular instance, an e-mail that seemed to originate with PayPal was sent. This e-mail contained a link to a website that purported to be a secure PayPal site. Here a username and password were requested. Once given, this username and password would be used to steal money from my account.

In general usage the word “spoof” has a certain good-natured or humorous connotation. Not so online. The intent is identity theft in order to gain access to your money. The spoofer is out to deceive you. He is an online con man.

Spoofing is not a problem limited to PayPal. Any online account you have is susceptible. With this in mind, let’s examine a real case of how this confidence game works so that you can guard against it in any situation.

The E-mail

Find below a verbatim reproduction of the e-mail I received:

From: service@paypal.
Sent: March 4, 2004
Subject: Important Notice

Dear PayPal Costumer,

This email was sent automatically by the PayPal server in response to verify if you are the real owner of this account.
We have recently noticed that your account may be used for fraudulent/illegal things.
So, if you are the real owner of this account, please follow theses steps.

This is done for your protection --- only you, the recipient of this email can take the next step.

To Verify your Identify and access your account, follow these steps:

1. Click on the link below. If nothing happens when you click on the link (or if you use AOL), copy and paste the link into the address bar of your web browser.

<https://www.paypal.com/row/fq/ac=AgIAbBPicjuelmBjKIUwlKMKw7HMs3LwMUegfxtf9qhF7LHAK1dN4c2qfhIN3UQpQ6v9Q7Hse5pWZA&t=pr>

The link will take you to our Verify Your Identity page.

2. On the Verify Your Identity page, fill out the form, and click Submit.

* IF YOU DON'T FOLLOW THESES INTRUCTIONS, YOUR PAYPAL ACCOUNT WILL BE LIMITED.

Thank you for using PayPal!
The eBay Security Team

PROTECT YOUR PASSWORD

NEVER give your password to anyone and ONLY log in at <https://www.paypal.com/>. Protect yourself against fraudulent websites by opening a new web browser (e.g. Internet Explorer or Netscape) and typing in the eBay URL every time you log in to your account.

Please do not reply to this e-mail. Mail sent to this address cannot be answered. For assistance, log in to your PayPal account and choose the “Help” link in the header of any page.

What tipped me off?

Being a writer, the misspelling of “customer” immediately raised alarm bells. Likewise, the first three sentences were very poorly constructed and contained grammatical errors. But this evidence is hardly conclusive and bad grammar is not criminal, despite what your English teachers may have told you. As someone familiar with web and e-mail technology I knew there were a couple of easy tests that would confirm or remove my suspicions.

The Link

Most e-mail client software offers you the choice of sending your e-mails in HTML or plain text format. The title bar of the message announced that this message had been sent as HTML – the format of web pages on the Internet. While the link to the PayPal site looked legitimate enough, and the fact that it started with “https” (hypertext transfer protocol secure) seemed to indicate a secure server, a link can say anything and often says no more than “click here”. The actual address to which you are linking is hidden in the HTML code. It is a simple matter to view the code of an Internet page. Open your browser at any web page and right click a blank area of the screen and choose “View Source Code” from the menu that appears. (What you see may not make a lot of sense but we’ll indicate the one thing you need to know shortly.) Exactly the same capability is available if you are using Outlook as your e-mail client. Viewing the source code revealed the following:

```
<a href="http://  
69.56.218.114/~kodorzz/">  
https://www.paypal.com/  
row/fq/ac=AgIAbBPicjuelmBj  
KIUwlKMKw7HMs3LwMUegfxtf9q  
hF7LHAK1dN4c2qfhIN3UQpQ6v9  
Q7Hse5pWZA&t=pr  
</a>
```

Not very informative for the average e-mail user but all you need to know is that the web address you are being taken to follows the words "href=". You can see that the hidden link does not match what appears in the e-mail. This is the single most important thing you can do to avoid being spoofed. Be aware that links can lie.

Origin of the E-mail

Not absolutely conclusive evidence yet, but there is also something we can do to verify the source of an e-mail. The "from" address in our e-mail says "service@paypal" and seems to indicate authenticity. But this is not a definitive indicator of the e-mail's source of origin. Fortunately, there is an easy way to check this. Again, if you are using Outlook, right clicking any e-mail in your "Inbox" and a menu will pop up. Choose "Options" and you can see more information about the sender. What you should pay particular attention to is the second line starting with "Received". In my spoof e-mail it looked like this:

```
Received: from relais.video-
tron.ca ([24.201.245.36])
```

Recognizing the word "relais" as French and the country code "ca" as Canada I concluded that this e-mail originated in French Canada – not a likely source for an e-mail from an American-based company. A legitimate e-mail from PayPal shows the following information:

```
Received: from smtp1.nix.
paypal.com ([64.4.240.74])
```

An e-mail from any major corporation will usually originate from a mail server (that's what "smtp1" indicates) address that includes the corporate name. Just like links, the "from" line in an e-mail is sometimes less than truthful.

The security precautions advised by PayPal at their site also confirm that this is a spoofing e-mail. Any legitimate e-mail from PayPal is always sent using the user's name or the name of their business. As you can see this is certainly not the case with our e-mail. Secondly, PayPal suggests that you never click on a link in an e-mail but instead open your browser and type or paste the address into the address bar. The reason for doing this has already been pointed out – HTML can hide the real location of a link.

At this point I notified PayPal of the spoofing e-mail.

The Spoofed Site


Of course I couldn't resist having a look at the site itself. Clicking on the link opened a perfect replica of the PayPal site in my browser. The graphics had been copied exactly and most of the links took me to the authentic PayPal site. Prominently

displayed in the center of the page was a request for a user name and password accompanied by a submit button. Getting me to enter my information here was the whole point of this elaborate ruse. Needless to say I didn't do so but if I had, the information would have been saved in a file, retrieved by the spoofer and then my account would have been cleaned out. (By the way, it would have proved a disappointing take.) Thinking, some twenty minutes later, that it might be useful to have a screen capture of the site and a copy of the HTML code I again clicked on the link in the e-mail only to find that the website had already been removed. Disappointing for me perhaps, but comforting to know that it had been closed down so quickly.

Being Aware is the Best Defense

PayPal provides documentation online regarding security though you won't find any description of how spoofing works and, without this, some of the security precautions recommended don't really make sense. There are a couple of reasons for this. For one it's not good marketing to dwell overly on security issues – it tends to frighten potential customers. The second issue is a little thornier. By showing how to guard against spoofing you are also showing how to get around it. Unfortunately, someone intent on fraud might read an article such as this to learn what pitfalls to avoid.

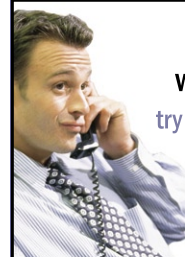
On balance though it pays to be an informed consumer. Learn a little bit more about the software you are using and you'll be much less vulnerable. Most importantly remember that links and e-mail addresses can lie. Don't click on a suspicious link but instead open your favorite browser yourself and type in the address manually after ensuring that it is correct.

Remember too that spoofing is not a problem restricted to PayPal. A spoof attempt may be made against any online account that you have. Finally, you should be aware that there are other more sophisticated spoofing schemes than the one described here. 

Resources

<http://www.millersmiles.co.uk/>
<http://www.paypal.com/cgi-bin/webscr?cmd=p/gen/fraud-prevention-outside>

Peter Lavin runs a Web Design/Development firm in Toronto, Canada. For more information visit <http://www.softcoded.com/> He may be reached at peterlavin@sympatico.ca.



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Broadband National (BBN) helps people get the lowest prices on telecom services like DSL, cable, Internet, T1 lines, long distance service and local phone service from more than 35 providers. Compare all the top providers in one user-friendly location.

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When you hear about a new technology, how do you know it's what you need?

Does your business need a T1 line?

What is T1?

Broadband National's website offers a list of terms -- like T1 -- and their definitions. Why? Because they know you need not only the best price, but the best solution, the one that fits your needs. For example, did you know that SDSL (Symmetric Digital Subscriber Line) is best for heavy home users such as gamers, or for commercial customers? If you're a parent of a game-loving teenager, **BBN** can help you decode what your kids are saying about why they need faster Internet access. (By the way,

a T1 line transmits DS-1 formatted digital signals at 1.544 Megabits per second. In contrast, dial up has a maximum speed of 56 kbps.) **BBN** is also working on making VoIP (Voice over IP) available soon.

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GOOGLE UPDATES:

Amazing Magic or About Time?

by Terri Wells



If you're number one in a competitive field, you don't stay that way by resting on your laurels. Since most folks who do anything Internet-related want to search the Web (it's the second most popular activity, right behind e-mail), it's definitely a competitive field. And there's no doubt who's number one: Google, with an index of billions. Of course, Yahoo! would like to dispute that, as would any number of smaller players. Microsoft is even getting into the act...but that's a topic for another article. Suffice it to say, Google won't stay number one if it doesn't keep innovating; fortunately, it knows that — which explains the new features it added this month.

I have to give them credit; these additions are just the latest in a long string of improvements that the company has kept up practically since its inception. I don't know of any other search engine that lets you search in so many different languages, for instance (including I33t, igpay atinlay and, of course, "Elmer Fudd"). It's rarely, if ever, failed to help me find what I'm looking for online, which is more than I can say for some other search engines out there. But before this gets sappy and turns into a testimonial, let me tell you what the new features are — and why I was a little surprised.



Web [Images](#) [Groups](#) [News](#) [Froogle](#) [New!](#) [more »](#)

Google Local was unveiled in mid-March, and I actually used it once without even realizing it. What it does is take a keyword, like "pizza," and either a zip code or the name of a town or city, and deliver a list of results — in this case, a list of local pizza parlors. You also get a phone number, street address, and a list of related Web sites. I'm currently planning to change my place of residence


before June, so I went to Google sometime during Google Local's first week and typed in the name of a housing development that had been recommended to me, followed by its location. Well, the results weren't perfect; the place I was looking for was not among the links that came up. But clicking on one that looked close led me, within two more clicks, to my destination, with all the information I needed. So, according to my unscientific, one-time test, there's room for improvement — but it's a decent start.

"It's about time," I later thought, with some surprise. I mean, hasn't Yahoo! had something like this for a long time? Just go there and click on their Yellow Pages. You have to specify the location first and then do the search. I have to admit, the way Google has it set up is more convenient to the casual searcher; and Yahoo! seems to want either the specific name of a business, or it gives you a list of categories to click on. I don't doubt that there's more going on technologically with Google Local than what Yahoo! offers — but will users perceive it to be "more enough"? I hope Google shares my opinion that Google Local is simply a good start, and builds on it.

I can't speak quite so authoritatively about Google's Personalized Web Search and Google Web Alerts, because I haven't tried them yet. (You can stone me later). If they work as advertised, though, they're real improvements on the headache of homonyms. You know what I'm talking about. It happens when you perform a search on the keyword "bass" looking for the musical instrument and get results for "bass" the fish (or even "bass" the annoying loudmouth singing fake wall trophy). Google says that results for its Personalized Web Search are adjusted by using a "slider," and that "results change dynamically as the degree of personalization changes." If this is for real, it will put them very much ahead of the pack. It could bring more exact results than what can be achieved today with natural language searching. (Anyone who hasn't been frustrated at least once with a search engine that promised to be able to answer

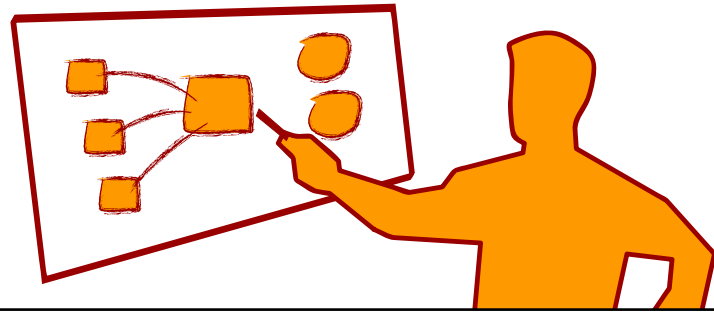
a question asked in "natural language" and failed to deliver hasn't used very many different search engines).

As to its other new service — Google Web Alerts — well, that could either be very good or very bad. Those of you who aren't already overloaded with information, please raise your hands. I think I can safely say that most of you still have your hands down — as are mine, still typing busily. Why is that relevant? Because Web Alerts are like a news service directly to your e-mailbox. To quote Google's press release: "After specifying keywords they want to track, users can receive daily or weekly e-mail with links to new web page results, plus top stories from Google News that are related to each query. For example, Google Web Alerts can be used to follow the progress of a favorite sports team or a business competitor, all without having to perform searches repeatedly." I don't know about the rest of you, but I've rarely received an electronic newsletter that I've found truly useful, even if it was directly aimed at my interests. I'm willing to see myself proved wrong — and I don't doubt that some of you might find Google Web Alerts useful — but to me, this just looks like aiding and abetting information overload.

The good news, of course, is that Google isn't afraid to test these items in the field. Their home page still offers their flagship uncluttered search engine, but users have the option of going to Google Labs and giving the Personalized Web Search and Web Alerts a test drive. This is good for a product that doesn't have to be downloaded onto your computer (so you're not too committed to it if you decide you don't like it). Still, it takes a lot to offer something new and relatively untried: guts, curiosity, a willingness to experiment, and a desire to do a better job to give the customer what he or she really wants. Nobody has Internet searching down perfectly yet... but so far, Google still has the best shot at being the best. 

EXTRA FEATURE: The *Pulp Fiction* Way of Solving Problems

by Romeo Marquez



One of my favorite movie characters comes from Tarantino's masterpiece, *Pulp Fiction*. The character I am referring is called Winston Wolf a.k.a. "The wolf" played brilliantly by Harvey Keitel.

For those of you that did not see the movie or do not have a fresh memory of this character, Winston "The wolf" comes on scene when Jules (Samuel L. Jackson) and Vincent (John Travolta) are in big trouble because they killed a dude inside their car while driving around L.A.

Both Vincent and Jules freak out and they can only come up with the idea of driving towards Jimmy's house. Jimmy (Played by Tarantino himself) does not want to get involved and gives them little room to work out a solution.

Then, Jules makes a call and the Wolf is on his way! He introduces himself like this: I'm Winston Wolf, I solve problems.

That is in fact his job, his profession, solving problems! The Wolf comes in, tells them exactly what to do, how to do it and when to do it, all this in a cool and calm way. In less time that they could have imagined, the situation is successfully resolved.

That is in fact, what a problem solver does. This portion of the movie has always been quite a lesson to me. It seems like during a "crisis" or an emergency situation, most people lose their mind. They can't think straight and even the simplest solutions are either ignored or just never thought of.

This provides an opportunity to service providers, especially to all consultants. So we should always be ready for anything, remaining calmed and cool so we can think of the best possible solution available.

I'm Winston Wolf, I solve problems.

Lots of people can think reasonably well during regular times; lots of people are planners; lots of people are objective oriented, and so on. But things do not always go as planned, and when that happens, people get lost! So when they are lost, they will need someone to help them get back on track safely and in the shortest possible time.

I like my clients to think of me as a problem solver because solving problems is a very desirable feature in any service provider. If you succeed at doing this, you will get an incredible amount of trust from your client and you can't put a price tag on that. You will then afterwards get more projects

which you can actually put a price tag on!

Case study: It's about thirty minutes away. I'll be there in ten.

The phrase above it is said at the end of The Wolf's initial phone call. It reflects two things: The will to do things and also the promptness to do them. Acting fast is one of the keys to be a problem solver. Lots of times, the actual problem is just a matter of time, that is of course, not having it!

Here's a short description of what a problem solver does and how he does it.

Day 0

Last year I got a call pretty late in the afternoon from someone that needed a print brochure for an event just 2 days away from the day they were calling. There was no defined structure, no information collected, no pictures to use. Nothing at all for the project but just a slight idea of the kind of information that the client wanted to publish and that was it. Sure, they had months to do it, but somehow, they just didn't.

I took notes of everything the client said on the phone and asked key questions such as purpose of the brochure, budget available, exact time of deadline and so on. I understood the challenge and after a couple of phone calls with my team we decided to take the project.

After a short meeting with the client to get the main specifications, we laid out a plan, numbered our priorities and, based on that, looked for an available printer, wrote a script, took some pictures, supervised the designer and copywriter's work — all of this in just one night.

There wasn't much time to make any changes after showing the design to the client, so we had to make sure not to turn in a preliminary draft but we had to think of doing the real deal, a final design.

Day 1

We showed the design to the client just to get the OK and delivered it right away to the printer. We had to look for a printer among a long list of possibilities but we were fortunate to find one that understood our need, committed to the project as much as we did and delivered on time just as promised. I received the brochures around 11 p.m. and the quality of the printing was excellent.

Day 2

It's show time! We delivered the boxes with the brochures right to the place where they were going to be distributed. My client couldn't have been happier. He congratulated us, and we have been working with them ever since.

As you can see, we solved his problem and earned his trust, which now allows us a lot more freedom on the following projects. They were in a jam and we got them out of it. What we did was not that difficult, but due to the lack of time and material they felt overwhelmed by their task, giving us the chance to successfully solve their problem.

Conclusion

Solving problems — it's a combination of skills but also a state of mind of "willingness". You need to be convinced that anything can be accomplished. Why? Because your client already thinks that his problem it is either impossible or very difficult to solve, so you should find a way to solve whatever problem it is ahead. If you do it, you will start building a "problem solver" reputation.

Remember: whatever the Wolf told the guys to do wasn't difficult to plan and neither was it difficult to do. So keep your thinking straight, anticipate as many problems as you can, and most important of all, have a team you can trust.

A problem solver can delegate but he cannot disconnect at anytime from his project. He is the leader and should be in that position during the duration of the project.

You don't have to solve the problem yourself, but you should be the one that plans the strategy, follows up the tasks and oversees the whole thing at all times.

It is certainly a challenging role that not everyone is cut out for, but if you like challenges, then this could be a great profession for you. Wouldn't be cool to have **Problem Solver** on your business card?

To be a problem solver you have to be the coolest of all, because your clients will most likely be freaked out and they need to feel safe and in the right hands.

To finish, I would like to address one more thing said by Mr. Wolf at the end of his appearance: Just because you are a character doesn't mean you have character. Think about that. ■

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JUNE CONTEST

Submit Your Scripts, and Win a

FREE MP3 Player!



To celebrate the launch of Scripts (<http://www.scripts.com>), Developer Shed is giving away a 256MB Creative NOMAD MuVo NX MP3 Player, courtesy of our friends at ThinkGeek.



To enter, simply submit all your best scripts to Scripts.com, then send us your Scripts.com User ID. The person with the most approved scripts from May 13, 2004 until the end of the contest wins! The basic rules are these:

- (1) No duplicates. A script only counts once.
- (2) No Spam. Spammers will be disqualified immediately.

Contest runs from May 13, 2004 until July 1, 2004. If you just can't wait for your chance at the MP3 player, buy yours today.

ENTER NOW!

grip this *

(Real news from the weird spectrum of technology)

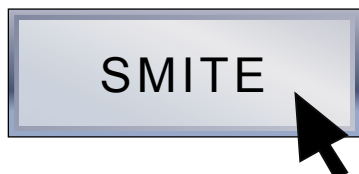


Reach Out and Touch This!

Adwalker, an Irish marketing company, has just started loading up their walking advertisers with wearable computers. The compu-vests have an integrated flat panel, touch screen display, are equipped with wireless network connectivity, and even have a direct thermal printer. The Adwalker rep is able to provide users data mining services, ticketing, point-of-sale, product demonstrations, and interactive games, such as that family favorite, "Touch Me and Die." The Teletubbies could not be reached for comment, however the Rev. Jerry Falwell expressed concern with indications that the units might be gay.

God Goes Online; Cyber-Church to Smite Sinners

The Church of Fools, an online church catering to those with an aversion to people, sunlight, and church pews, has recently been forced to excommunicate some of its more demon-possessed members. The church elders decided to "use the Smiting button" to – well – smite a few folks who were logging in with racist names, getting out of line with church girls, and shouting out to the whole congregation. Visitors to the site (<http://www.shipoffools.com/church>) can choose a cartoon character and worship with other xenophobics. "Save" functionality still under development.



US Air Force Battles to Curb the Use of Garages for Terrorism, Parking



A new USAF two-way radio system has been blamed for keeping garage doors shut in communities near the Florida Panhandle. The system, which uses the same frequency as garage door openers, jams the frequency of the garage door opener, blocking all communication with it. "I want my garage door opener to work, too," said Col. Russell F. Miller, commander of the 96th Communication Group. The Air Force is warning that if they are unable to change the system's frequencies, garage users will have to change theirs, or resort to having to open the door manually.

SETI@home Turns Five! E.T. Still Not Picking Up or Returning Messages



Five years ago this month, the Search for ExtraTerrestrial Intelligence (SETI) commenced the SETI@home distributed computing project. The project is aimed at helping the group sift through the mountains of data they receive from radio telescopes all over the world in search for intelligent alien life. Although the program has yet to release any conclusively positive results, geeks and telemarketers are waiting in eager anticipation. No word yet on whether E.T. has long distance or free roaming. You can download the program at <http://setiathome2.ssl.berkeley.edu/>

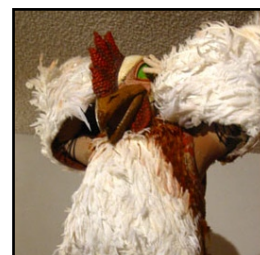
Universe Officially Declared Very Very Big



A team of researchers led by Montana State University physicist Neil Cornish found that the universe is probably no smaller than 78-billion light years across. This is better than previous estimates, which ranged from "as big as we can see" through "infinite." The team used data from the Wilkinson Microwave Anisotropy Probe (WMAP), which can detect microwave radiation from up to 379,000 years after the big bang. Not mentioned in the report were speculations regarding an evil parallel Earth where everyone sports goatees.

Fun with Farm Animals

Looking for something completely brainless to do? Why not torture a guy in a chicken suit? Subservient Chicken (<http://www.subservientchicken.com/>) allows you to pass on commands to a guy in a chicken suit, who you can watch via his web cam. By using the "contacting chicken" form on the page, you can tell our poultry pal to flap his wings, dance around the room, and even do push ups. Unfortunately, there really isn't a guy in a chicken suit waiting for your commands. The effect is accomplished via the use of a pre-defined set of commands which activates a video sequence of the action you've requested. There is still no "lay an egg" functionality, however.





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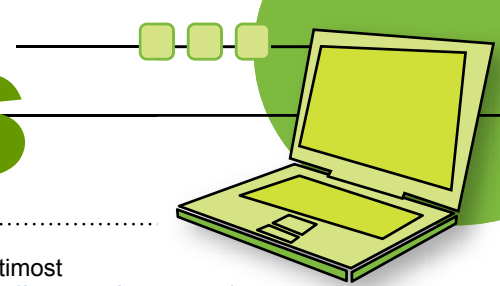
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Close Personal Friends of Developer Shed

Behold the power of PHP

<http://www.zend.com/developers.php>
Zend

Decorating your bookshelf with animals

<http://www.oreillynet.com/>
O'Reilly Books

Required reading for the Information Age

<http://www.osborne.com>
McGraw-Hill/Osborne

Development guides from industry experts

<http://www.oreillynet.com/>
O'Reilly Network

MSTech

Java BluePrints: MVC

<http://java.sun.com/blueprints/patterns/MVC-detailed.html>

Jakarta Struts

<http://jakarta.apache.org/struts/>

Application Interoperability: .NET & J2EE

<http://msdn.microsoft.com/library/default.asp?url=/library/en-us/dnpag/html/JDNI.asp>

Windows 2000/XP/.NET Resource Index

<http://labmice.techtarget.com/>

Open Source

The Cathedral and the Bazaar

<http://www.catb.org/~esr/writings/cathedral-bazaar/>

The Art of Unix Programming

<http://www.catb.org/~esr/writings/taoup/>

The New Hacker's Dictionary

<http://www.catb.org/~esr/jargon/>

PayPal Developer Network

<http://www.paypal.com/pdn>

Hardware

Distributed and High Performance Computing References

<http://www.dhpc.adelaide.edu.au/education/dhpc/references.html>

More Cluster Resources

<http://www.supercluster.org>

Cluster Projects

<http://www.mosix.org/>
<http://web.math.jjay.cuny.edu/>

Site Promotion

Offermatica

<http://www.offermatica.com/>

Optimost

<http://www.optimost.com/>

Web Services

PayPal Security Center

http://www.paypal.com/cgi-bin/webscr?cmd=_security-center-outside

Spoof Check Bookmarklet

<http://www.scriptygoddess.com/archives/004558.php>

Google Labs

<http://labs.google.com/>

Net

Internet-based DC Projects. <http://www.aspenleaf.com/distributed/ap-math.html>

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Mersenne Prime Search. <http://www.mersenne.org>

TOP500 List 11/2003. <http://www.top500.org/list/2003/11/>

shutdown -h now: A NEW Apple Store

(And Some Food for Thought)

by Terri Wells



I truly hate to sound like a marketing droid. That said, there are times when the temptation is hard to resist, especially when it provides the opportunity to cheer for an underdog. The friendly folks in San Francisco were certainly cheering when they saw their current and former mayors this weekend — and no, it had nothing to do with controversial political policies. It had to do with waiting in line up to two days for Apple's newest flagship store to open its doors to the public. Steve Jobs himself was on hand for the opening.

Let's see if we can put this in perspective. The new store is not Apple's first flagship store. It's actually the fifth. The other ones are located in New York, Chicago, Los Angeles, and Tokyo — so it's not even the company's first flagship store in the state of California. Nor is it the first retail Apple store in the Bay area; it's the seventh. In fact, Apple has opened 76 retail locations since May of 2001. What's so special about number 77 — other than that all-glass staircase the press keeps talking about?

To understand that better, let's take a look back in time to when that first store opened. The Internet bubble had burst, but certain companies were still making a lot of money selling their goods online — particularly their electronic goods. Dell comes to mind; then, as now, you could order up a PC or notebook built to your specifications. Who needed to play with the hardware? The specs and the software told the story, right? (Oh, and let's not even get into the craziness of one company making both the hardware and the software. Hadn't Jobs ever heard of specialization?!)

Well, okay, so specialization and built-to-order is the way to go — but only sort of. Don't get me wrong; I'd be very surprised if Apple ever truly challenged Dell's dominance at selling computers. But the scrappy little firm does understand certain things very well — which is why it chose to open retail stores. For some folks, computers are like cars — they may be mass-produced and perform according to specs, but they're still pretty darn personal. And since they can do a lot more than cars, lots of folks want to be able to take that test drive.

In Apple's case, most of their market will want to take that test drive. Just look at their software offerings! MacHeads take pride in having some of the best software for indulging their creativity right at their fingertips. This isn't to say PC users aren't creative; but, in a strictly unscientific way, I've noticed that Mac users tend to be more visually oriented. Well duh; one classic Mac user type is a graphic artist. Graphic artists, like most artists and visually oriented people, want to see things in action. "Show me the magic!"

Let's come back to that new store. So, the place features Macs for sale, salesfolks who presumably understand the technology and can explain it, and that glass staircase. What else? Well, there's a "Genius Bar" where any one can ask questions and receive service; an Internet cafe with video conferencing capability; a 39-seat theater for workshops and demonstrations; there's even a Kids section. Oh, and don't forget the 250(!) events every month, where customers can find out how to use technology for everything from TV, movie, and music editing to how to run their business. For the specifics, the new store even offers up its own comprehensive home page, which can be accessed from Apple's Web site (<http://www.apple.com/retail/sanfrancisco>).

In short, Apple's new store is designed to be a place you keep going back to, and not just for some random piece of hardware or that hot new computer game you heard about. It wants to be a destination, in the same way that a mall or a super book store is a destination for some people. It's not just a Radio Shack or a CompUSA! No doubt Apple believes it gives its customers a better deal because of all those extras the retail locations offer. With creative customers who want to get the most out of their tools, the company might even be right. Heck, they must be doing something right, or there wouldn't be seventy-plus Apple stores around.

Buying an Apple is a little like buying a Mercedes — okay, maybe more like buying a Beetle (especially if it's an iMac, but I digress). You buy a lot of attitude with it, sure, but you're saying that your car isn't just a way to get you from point A to point B. It's something you spend a lot of quality time with, and you don't want to just be comfortable using it, you want to actively enjoy all those hours you spend with it. Sure, folks with Apples can and do use them for word processing — and folks with Mercedes can and do use them to pick up the groceries. But it's not all that you buy a Macintosh for (or a Mercedes).

Most people who buy PCs for home use (or even, to some extent, for a small business) want and need a box that will go to specific places: e-mail, accessing the Internet, record-keeping of various sorts, maybe a little desktop publishing — and, granted, some graphic computer games, often enough. A Macintosh provides that as well, but those who use one like to know they can do a lot more creatively with it. It's a very different attitude; it's the kind of hands-on attitude that insists on playing around with something before buying it when possible. There's nothing wrong with either attitude...but it does explain why, despite those who doubted it three years, Apple now has more than 70 brick-and-mortar (and glass) retail locations. ■