



Joe's Newspaper

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O'Reilly Radar

Robots.Txt and the .Gov TLD

I'm on the board of [CommonCrawl.Org](#), a nonprofit corporation that is attempting to provide a web crawl for use by all. An interesting report just got sent to us about the use of robots.txt files within the .Gov Top Level Domain, a standard known as the [Robots Exclusion Standard](#).

In examining about 32,000 subdomains in .gov, it turns at least 1,188 of these have a robots.txt file with a "global disallow," meaning robots are excluded from indexing this content. Even more curious, on 175 of these sites, while there is a global disallow, there is a specific bypass that allows the Googlebot to index the data. You can [look at the raw data](#) on Factual.

At [Public.Resource.Org](#), we've always felt that the use of a robots.txt file by the government should only be used for purposes of security and integrity of the site, not because some webmaster arbitrarily decides they don't want to be indexed. Indeed, on several occasions we have deliberately ignored government imposed robots.txt files because we felt this was an arbitrary and illegal attempt to keep the public out.

And, needless to say, it doesn't make any sense at all to let in some webcrawlers and not let in others. If this is a reaction to a security/integrity issue, such as limited capacity, the proper thing to do is include in the robots.txt file a comment that can be used by other bots to explain what is going on. For example, it could be perfectly reasonable for a government group faced with limited capacity to ask a robot to limit crawls to a certain number of queries per second and only whitelist crawlers that agree to that condition.

Government webmasters should use the robots.txt file sparingly, and should do so in a non-discriminatory fashion.

Asia Continues to be Facebook's Strongest Growth Region

With Facebook topping 330 million active users over the past week, the company's strongest growth region continues to be Asia. Over the last 12 weeks, Facebook added close to 17M active users in Asia alone. Since my previous post, the share of active users from Asia grew by 2% (to 13.5% of all users), and roughly 1 in 7 users now come from the region. With a market penetration under 2%, Facebook is poised to add many more users in Asia (and Africa).

Compared to the U.S., the proportion of Facebook users in their teens (13-17) or in the 18-25 age group are much higher in Asia:

As was the case in other parts of the world, expect the share of users 45 and older to climb as Facebook becomes more mainstream in Asia. Growth was strong across all age groups in Asia over the last 12 weeks, particularly among teens (+90%) and the 18-25 age group (+60%).

In other regions, notably North America, Europe, the Middle East, and South America, growth in the 18-25 age bracket, lagged behind users 45 and older.

In closing I want to highlight countries (within several regions) where Facebook has been growing rapidly:

In Europe, growth has been fastest in the East: as an example, the number of active users in Poland **doubled** over the last 12 weeks. Growth in Southeast Asia remains strong in countries that have been home to Friendster's core user base. While Facebook added over 800,000 active users in Brazil, *for now* Orkut remains the dominant social network in South America's most populous country.

Four short links: 20 November 2009

1. Spokeo -- abysmal indictment of society, first prize in mankind's race to the bottom. *Uncover personal photos, videos, and secrets ... GUARANTEED! Spokeo deep searches within 48 major social networks to find truly mouth-watering news about friends and coworkers.* PS, anybody who gives their gmail username and password to a site that specializes in dishing dirt can only be described as a fucking idiot. (via Jim Stogdill, who was equally disappointed in our species)
2. Biologists rally to sequence 'neglected' microbes (Nature) -- The Genomic Encyclopedia of Bacteria and Archaea is project to sequence genomes from more branches of the evolutionary tree of life. *Eisen's team selected and sequenced more than 100 'neglected' species that lacked close relatives among the 1,000 genomes already in GenBank. The researchers reported earlier this year at the JGI's Fourth Annual User Meeting that even mapping the first 56 of these microbes' genomes increased the rate of discovery of new gene and protein families with new biological properties. It also improved the researchers' ability to predict the role of genes with unknown functions in already sequenced organisms.* (via Jonathan Eisen)
3. Mail Learning: The What and the How (Simon Cozens) -- *a few things that a really good mail analysis tool needs to do.* I hope that my mail client and server does these out of the box in the next five years.
4. Introducing the Open Web Foundation Agreement -- *The Open Web Foundation Agreement itself establishes the copyright and patent rights for a specification, ensuring that downstream consumers may freely implement and reuse the licensed specification without seeking further permission. In addition to the agreement itself, we also created an easy-to-read "Deed" that provides a high level overview of the agreement. Applying the open source approach to better standards.*

Health gets personal in the cloud

Healthcare is one of the biggest industries in the world. The United States spends over 17% of its GDP on healthcare and the issue of the industry's future is being hotly debated in Congress. Whatever happens to other elements of health reform, health information technology will play a key role in moving us towards the goal of bending the cost curve and improving quality and clinical outcomes. A Personal Health Record (PHR) is one way that patients can have some control of their own health data, while providing an interoperable platform for sharing relevant clinical data between providers. Healthcare is changing rapidly and there are some important trends worth watching.

Healthcare in the near future will be quite different than it is today. Web enabled technology is already changing the way medicine is practiced. As the digital nation comes of age we will see new opportunities, and new challenges, bringing healthcare in America into the 21st century. Health consumers will come to expect they will have control over their own health data. Having secure, interoperable access to clinical data will allow patients to partner with their care providers in new ways incorporating Web 2.0 principles.

For example, Google announced at the [Health 2.0 conference](#) that they have entered into a partnership to provide telehealth services through their [Google Health](#) platform using [MDLiveCare](#). With the integration of MDLiveCare technology, Google can provide a service that offers patients access to doctors from remote locations, via webcam or telephone, into its personal health record offering. This will be particularly valuable for those who are caring for their loved ones from far away. My family is scattered around the country and caring for our mother with advanced stage Alzheimer's was quite a challenge that would have benefited from this type of service.

Here is a screenshot of Google Health:

"Patients remember less than 25% of what they're told when they consult with a doctor," said Bob Smoley, CEO, MDLiveCare, in the statement. "By directly synchronizing the information that's shared...we're able to provide patients with a convenient solution to review their physician or therapist encounters." "We strongly believe that the patient has the right to control their own health data," said Product Manager of Google

Health Roni Zeiger, MD a practicing Internist who also works in urgent care. "You can now request an online consultation with a physician. At the end of the visit the doctor documents the encounter and it is immediately sent to your Google Health account and you will have a complete record of the doctor's notes." Also, Microsoft has introduced My Health Info as part of HealthVault. My Health Info is an interactive and customizable dashboard that allows people to view all their health information: Blood pressure, blood glucose, BMI, immunizations, allergies, lab results, medications, steps walked, health articles and more, in a single, organized, and convenient location. It connects with HealthVault so information updated in one product is automatically updated in the other. This service offers tools and widgets to upload, organize and monitor health information stored in their personal HealthVault accounts. The service also allows people to research medical concerns, read the latest health news, gain guidance from medical experts, learn about nutrition, and monitor conditions such as high blood pressure or diabetes. This is the main screen for My Health Info: "As consumers are increasingly being asked to manage more of their health and wellness, they are looking for solutions that help them navigate an overwhelming amount of information, enabling them to take control of their personal health data," said David Cerino, General Manager of Consumer Health in Microsoft Health Solutions Group. Marguerite Yeo, Director of Product Marketing for Microsoft HealthVault told me about Online Care deployed by Hawaii Medical Service Association (HMSA) an independent licensee of the Blue Cross and Blue Shield Association. Online Care, enhanced by Microsoft Healthvault, allows patients to see physicians immediately, through live consultations via Web or phone. By providing access to doctors anytime in the patient's home, health plans like HMSA have the opportunity to shift healthcare to less expensive care settings when appropriate. Another company that is doing some interesting work in this area is Practice Fusion. Practice Fusion is a free, Web-based electronic health record service for physicians. They recently announced the launch of Patient Fusion, their new PHR, at Dreamforce 2009 in San Francisco, salesforce.com's user and developer conference. "The healthcare and life sciences community is a rapidly growing sector," said Clarence So, Senior Vice President of Strategy, salesforce.com. "The Force.com platform allows companies like Practice Fusion to quickly innovate around a common objective for improving health." Through Patient Fusion, doctors grant patients instant access to their medical records, medications and immunization

history. Updates to the patient's records are available in real-time in the cloud. Patients will also be able to schedule appointments, request prescription refills, email their physicians, and, most importantly, share their data with other providers at any time. Here is a shot of the main Health Manager screen: They also announced ChartShare, a feature which allows users to have real-time access to patient records in a familiar and interactive format. All authorized users can access records simultaneously. This enables care providers to share clinical data and allows real time collaboration and consultation. "Practice Fusion continues to innovate in the healthcare market by offering a free Web-based PHR that is an extension of the practitioners' EHR. We're unlocking the physician EHR to give patients access and control over their own health data," said Ryan Howard, the CEO of Practice Fusion. He also told me, "The January release of Patient Fusion will allow the same ability that physicians now have using ChartShare for portability of data on the patient side." Whether it is by using a platform like Microsoft HealthVault or Google Health, or a SaaS model EMR/PHR like Practice Fusion, the options for patients and providers to coordinate care using Web 2.0 technology is making great strides. We will increasingly see platforms that provide virtual visits with care providers, and greater use of the web for tasks like making appointments, medication and therapy reminders, and making payments. I look forward to the day when I can login for a consultation with my doctor as easily as I Skype with my friends around the world. The future of healthcare is here, and it is beginning to be distributed.

Four short links: 19 November 2009

1. Chumby One (Bunnie Huang) -- new Chumby product released. *In addition to being about half the price of the original chumby, the new device added some features: it has an FM radio, and it has support for a rechargeable lithium ion battery (although it's not included with the device, you have to buy one and install it yourself). There's also a knob so you can easily/quickly adjust the volume. But I don't think those are really the significant new features. What really gets me excited about this one is that it's much more hackable.*
2. Deep Tracing of Internet Explorer (John Resig) -- very sexy deep inspection of Internet Explorer. Finally, something IE does better than Firefox (other than exploits). *dynaTrace Ajax works by sticking low-level instrumentation into Internet Explorer when it launches, capturing any activity that occurs - and I mean virtually any activity that you can imagine. (via Simon Willison)*
3. Less Than Free -- begins by talking about Google giving away turn-by-turn directions on Android, and then analyses Google's "less than free" business model: *Additionally, because Google has created an open source version of Android, carriers believe they have an "out" if they part ways with Google in the future. I then asked my friend, "so why would they ever use the Google (non open source) license version." Here was the big punch line - because Google will give you ad splits on search if you use that version! That's right; Google will pay you to use their mobile OS. I like to call this the "less than free" business model. This is a remarkable card to play. Because of its dominance in search, Google has ad rates that blow away the competition. To compete at an equally "less than free" price point, Symbian or windows mobile would need to subsidize. Double ouch!!*
4. Expert Labs -- *a new independent initiative to help policy makers in our government take advantage of the expertise of their fellow citizens. How does it work? Simple: 1. We ask policy makers what questions they need answered to make better decisions. 2. We help the technology community create the tools that will get those answers. 3. We prompt the scientific & research communities to provide the answers that will make our country run better. New non-profit from Anil Dash.*

Four short links: 18 November 2009

1. Memento: Time Travel for the Web -- clever versioning hack that uses HTTP's content negotiation to negotiate about the date!
2. Ordnance Survey Maps to Go Online -- *The prime minister said that by April he hoped a consultation would be completed on the free provision of Ordnance Survey maps down to a scale of 1:10,000, (not the scale of a typical Landranger map set at 1:25,000). The online maps would be free to all, including commercial users who, previously, had to acquire expensive and restrictive licences at £5,000 per usage, a fee many entrepreneurs felt was too high. No word yet on license. ([more details here](#))*
3. Mapsicle -- open source Javascript library to create mashups and application on Google Streetview, from NZ developers Project X. It has been released by Google as part of the Maps Utility library.
4. Freedom of Creation Shop -- online store for 3D-printed objects. (via Makezine).

The iPhone: Tricorder Version 1.0?

The iPhone, in addition to revolutionizing how people thought about mobile phone user interfaces, also was one of the first devices to offer a suite of sensors measuring everything from the visual environment to position to acceleration, all in a package that could fit in your shirt pocket.

On December 3rd, O'Reilly will be offering a one-day online edition of the Where 2.0 conference, focusing on the iPhone sensors, and what you can do with them. Alasdair Allan (the University of Exeter and Babilim Light Industries) and Jeffrey Powers (Occipital) will be among the speakers, and I recently spoke with each of them about how the iPhone has evolved as a sensing platform and the new and interesting things being done with the device.

Occipital is probably best known for Red Laser, the iPhone scanning application that lets you point the camera at a UPC code and get shopping information about the product. With recent iPhone OS releases, applications can now overlay data on top of a real time camera display, which has led to the new augmented reality applications. But according to Powers, the ability to process the camera data is still not fully supported, which has left Red Laser in a bit of a limbo state. "What happened with the most recent update is that the APIs for changing the way the camera screen looks were opened up pretty much completely. So you can customize it to make it look any way you want. You can also programmatically engage photo capture, which is something you couldn't do before either. You could only send the UI up and the user would have to use the normal built-in iPhone UI to capture. So you can do this programmatic data capturing, and you can process those images that come in. But as it turns out, at the same time, shortly after 3.1, the method that a lot of people were using to get the raw data while it was streaming in became a blacklisted function for the review team. So we've actually had a lot of trouble as of late getting technology updates through the App Store because the function we're using is now on a blacklist. Whereas it wasn't on a blacklist for the last year."

Powers is hopeful that the next release of the OS will bring official support for the API calls that Red Laser uses, based on the fact that the App Store screeners aren't taking down existing apps that use the banned APIs. Issues with the iPhone camera sensors pose more of a problem for him. "In terms of science, it's definitely a really bad sensor, especially if you look at the older iPhone sensor, because it has what's

called a rolling shutter. A rolling shutter means that as you press capture or rather as the camera is capturing video frames or as you capture a frame, the camera then begins to take an image. And it takes a finite number of milliseconds, maybe 50 or so, before it is actually exposed to the entire frame and stored that off into a sensor. Because it's doing something that's more like a serial data transfer instead of this all at once parallel capture of the entire frame, what that causes is weird tearing and odd effects like that. For photography, as long as it's not too dramatic, it's not a huge deal. For vision processing, it's a huge deal because it breaks a lot of assumptions that we typically make about the camera. That has gotten better in the 3GS camera, but it's still not perfect. It is getting better, especially when the camera's turned on the video mode."

One thing that has significantly improved with the iPhone 3GS is the actual camera optics. Most people know that the 3G and the first gen phone don't have autofocus at all. So their optics is just a fixed-focus simple plastic lens that doesn't allow you to focus up close. For anybody trying to do macro imagery, something up close, you're just not going to be able to do it on the 3G or the first gen phone. When we set out to build our application, we specifically had to work around that problem. A lot of why our application was successful was because we did focus on that problem. Then in the 3GS, the autofocus mode was enabled which is actually a motor-based autofocus system that can autofocus not only on the center of the image, but also somewhere that you pick specifically. And one more thing is that the autofocus system doesn't just change the focus, it also changes the exposure, which is something a lot of people don't notice. "

Another benefit the 3GS has brought to the table for vision processing is the dramatically increased processor speed. "With the 3GS, it's actually an incredibly powerful device," says Powers. "So we think right now that there's actually a lot of power there that hasn't been exposed. So I mean, there obviously are limits. But I don't think we've seen software that really hits those limits. Honestly, the limits that we're seeing right now are just in the SDK and what you can and can't do. One of the things about the iPhone is, as I was alluding to earlier when I talked about previous problems with the Android which are now being addressed, is that you could code at the lowest level on the iPhone, whereas you could not code at the lowest level on the Android. What that means to the iPhone is that you can actually write on ARM assembly if you want.

Almost everyone who's doing any sort of image processing today on the iPhone isn't taking advantage of that. We are to a very small extent in

Red Laser, but there's certainly juice that can be extracted by just spending time optimizing for the platform, which is something that the iPhone lets you do. And the other thing to add to that is there are new instructions enabled by the ARM 7 Instruction Set which is used on the 3GS, which wasn't available previously. And, again, I actually haven't heard of anyone utilizing those functions yet. So there's a lot of power there that is yet to be exposed."

Although the iPhone has been an interesting platform for Powers, he is turning his attention toward the Droid at the moment. "From our perspective, we would love to keep developing our vision software on the iPhone, but because of the fact that the APIs are so restrictive right now and we have no ETA on when that'll be fixed, we're actually looking to the Android now, specifically, the new Droid, as an interesting platform for computer vision and image processing in real-time. Again, if it's not a real-time task, the iPhone's a great platform. If you can just snap an image, process it, you can do anything on the iPhone that has that characteristic. But if you want to process in real-time, Android is really your best bet right now because of the fact that A, the APIs do let you access the video frames and B, you can now actually write on the metal of the device and write things in C and C++ with the new Android OS which, again, you couldn't do before. "

Alasdair Allan is approaching the iPhone from a different direction, using it as a way for astronomers to control their telescopes remotely while "sitting in a pub." While he's seen some primitive scientific applications of the iPhone for things such as distributed earthquake monitoring, he thinks that the real benefit of the iPhone over the next few years will be as a visualization tool using AR.

That isn't to say that he isn't impressed with the wide variety of sensors available on the iPhone. "You have cellular for the phones. All of the devices have wifi. And most of the devices, apart from the first gen iPod Touch have Bluetooth. You, of course, have audio-in and speaker. The audio-in is actually quite interesting because you can hack that around and actually use it for other purposes. You can use the audio-in as an acoustic modem into an external keyboard for the iPhone, I think that's in iPhone Hacks, the book. It's quite interesting. Then on the main sensor side, you've got the accelerometer, the magnetometer, the digital compass. It's got an ambient light sensor, a proximity sensor, a camera, and it's also got the ability to vibrate. "

According to Allan, the iPhone sensor that the least people know about is the proximity sensor. "The proximity sensor is an infrared diode. I think it's actually now a pair of infrared diodes in the iPhone 3G. It's the reason why when you put your iPhone to your head, the screen goes blank. It basically just uses this infrared LED near the earpiece to detect reflections from large objects, like your head. If you actually take a picture of the iPhone when it's in call mode, with a normal web cam, you'd actually be able to see right next to the earpiece a sort of glowing red dot which is the proximity sensor. Because, of course, web cam CCDs are sensitive in the infrared so it would actually show up. This was a bit of a scandal early on in the iPhone's life. The original Google Search app used undocumented SDK call to use this so you could actually speak into the speech search, and Apple and everyone really was very annoyed about this. So they actually enabled it for everyone in the 3.0 SDK."

Unfortunately, Allan doesn't know of anyone who has been able to make practical use of the prox sensor, partially because it has such a short range. On the other hand, the newly added magnetometer in the 3GS has opened the door to a host of AR applications. But Allan points out that like any magnetic compass, it can be very sensitive to metal and other magnetic interference in the surrounding environment. "It is very susceptible to local changing magnetic field monitors, CPUs, TVs, anything like that will affect it quite badly."

Also, he adds, to do any really accurate AR applications, you need to use the sensors in concert. "By default, what you're measuring, of course, is the ambient magnetic field of the Earth. And that's how you can use it as a digital compass, because there are tables that will show you how to do deviations from magnetic north to true north, depending on your latitude and longitude. Which is why to do augmented reality apps, you need both the accelerometer and the magnetometer, so it can get your pitch and roll to the device and the GPS to get the latitude and longitude so you know the deviation from true north."

Allan thinks that although the current sensor suite has limited uses for scientific data capture, things will improve quickly. "I think the science usage is definitely going to grow. When the sensor get slightly more sophisticated than they are today, for instance gyros or you can imagine slightly better accelerometers or light sensors or sort of other things. You could even put LPG or methane gas sensors in there very easily. They're both sensors that are very small now. You could certainly get going in science doing environmental monitoring, all of that sort of stuff going

very easily. And it would quite easily piggyback off sort of social networking ideas as well. I do see the very high-end smartphones contributing to growth in citizen-level science and people in the street getting out to do science and help people build large datasets that can actually be used to predict long-term trends and that sort of thing."

Powers concurs. "It behaves more like a tricorder than a communicator, right, because certainly voice communicating isn't all we're doing anymore. And I think if you take voice communication as a fraction of the utilization of a phone, you're going to see that there's definitely a trend that goes down all the time. I don't think it'll ever go to zero, but it'll certainly go to a smaller fraction. At the same time, the sensors are increasing. I would like to see not necessarily barometric or environment measurement sensors, but things like solid-state gyroscopes on phones and maybe a pair of cameras and maybe even different sensors that can allow us to read credit cards and do transactions on the device. I think there's even some talk of that appearing in the next gen iPhone so you can actually do transactions just by swiping your phone into a register. So I would agree with the assessment that they're becoming more like tricorder."

What Does Innovative Social Engagement Look Like For Businesses and Governments?

I've been thinking about the topic of Government 2.0 a lot lately. Part of this topic deals with the multi-directional engagement between government and citizens. This is what the White House and others have termed a more transparent, collaborative, and participatory government.

Unfortunately, the engagement for the most part is not very authentic nor meaningful. Boring "fan pages" on Facebook are one example I've written about, but there are many others. Often, engagement, when it does happen has so many rules associated with it, or such a high barrier to entry, or such a limited window as to be practically meaningless.

It seems to me that everyone can celebrate the fact that government entities merely have a YouTube channel here, a Twitter account there, or a Blogger profile some other place (the so-called "TGIF revolution"), or we can think a little harder about what the goals of citizen engagement really might be, and how to go about achieving them. But first, a personal example of responsiveness and engagement from the private sector.

On the evening of Nov 2nd, I tweeted from my phone about a local DC restaurant, Co Co Sala, just as I was leaving. We had a nice experience, but the hostess had been a little, shall we say, disinterested in helping us? So I commented as much.

Less than a week later, the co-owner of Co Co Sala sent me an email and cc'd his general manager. He apologized for the treatment I experienced, assured me it was not policy, introduced me to the manager, and said he'd talk to his staff. It was a four-paragraph email. I've never met him before, and furthermore, my personal email is discoverable but not the most easy thing to find.

This is what real social innovation looks like. This is what customer service looks like. This is what true engagement with stakeholders looks like. I want to give this great lounge Co Co Sala a hearty shout-out for not only having a great product, but also really caring about their customers.

Now, imagine we weren't talking about a restaurant here. Imagine we are talking about the Department of Motor Vehicles, or the Patent and Trademark Office, or your Congressman. If you tweeted, would they see it? Would they care? Would they react in any way? I think the answer in

many cases is no. And when was the last time you gave the DMV a shout-out for a job well done?

Let's look at a sliver of data. According to [TweetStats.com](#), the people behind the White House Twitter account reply to individuals less than 2% of the time, and seem to have never @ replied to any single more than once (i.e., they have never come close to a conversation). They re-tweet others' tweets about 6.5% of the time, but they only seem to re-tweet other government accounts and the New York Times. Granted, there are more people tweeting about White House issues than Co Co Sala, but does the above data represent any caring in any way, shape or form?

The terrific techPresident blog recently noted that actor Vin Diesel is the single most followed living person on Facebook - and that he recently passed up President Obama. Perhaps that's because Vin Diesel's Facebook fan page is awesome. He is engaged, his fans are engaged, and the tone is informal and fun. There are also many other high-profile people who have taken the plunge into innovative social engagement; my favorite at the moment is Alyssa Milano.

So when exactly did "serious and formal" become a substitute for "informative and meaningful" in government circles? And why is everyone scared of letting their guard down in public? People and entities that innovate and use new social networking tools to engage with stakeholders will be winners. The ones that don't will be losers in the long run. It's that simple.

If a goal of Government 2.0 is to provide citizens better services, and a strategy towards reaching that goal is to use social media tools to communicate better with citizens on multiple channels, it seems to me that listening and responding better to comments and complaints would be a great tactic.

The reason why people still cite the TSA's blog as a good example of citizen engagement is because few other outstanding examples of federal government social media engagement seem to have emerged in 2009. What does 2010 have in store?

It is somewhat outside the scope of this post, but my guess is that more and more local government responsiveness and engagement is happening. We heard some of those stories at the Gov 2.0 Expo Showcase in September. What are some new ones that the feds should hear about?

Four short links: 17 November 2009

1. Digital Natives (Ze Frank) -- *digital natives have grown up in a landscape where access to information and influence has been flattened. they have watched media distribution bottlenecks in the form of networks and studios lose influence to youtube and independent production houses. They have watched companies bow down to viral video critiques, and watched political systems get hacked by social networks. this is a generation that doesn't understand restrictions on access to media if those restrictions are inefficient or obviously detrimental to the system as a whole. this is a generation that has been at war with DRM and copyright right from the start. it is a generation awash with free tutorials and download-able source code.* When is a conversation with a precocious 17 year old a glimpse into an inter-generational gulf with implications for the role and status of formal education, and when is it just an encounter with a brat? Ze's piece is worth reading, whichever way it comes out.
2. ICU64 -- an open source Commodore 64 emulator (Frodo) hacked to visually and textually display memory. Watch the video embedded below, it's hypnotic and seductive. It immediately made me want one for my programs (without having to port my code back to 6502 assembler). (via waxy whose return from pneumonia is greatly welcomed)
3. Me and Belle du Jour -- interesting story from a UK blog master who guessed her identity but kept it secret, creating a googlehacked page as a tripwire to let him know when someone else guessed. He tipped her off that her cover was blown. (via waxy again)
4. The Hail Mary Cloud -- the world's slowest yet effective brute force attack. *If you publish your user name and password, somebody who is not you will use it, sooner or later.* A botnet is brute-force trying every known username and password combination against every known ssh server. *Each attempt in theory has monumental odds against succeeding, but occasionally the guess will be right and they have scored a login. As far as we know, this is at least the third round of password guessing from the Hail Mary Cloud (see the archives for earlier postings about slow bruteforcers), but there could have been earlier rounds that escaped our attention.*

Turning Predictions into Opportunities

The view from the eye of a recession isn't great. When companies are going bust, unemployment growing, and everyone's scouring their budgets for costs to cut, it can be hard to see opportunities. However, when Tim pointed to [Stephen O'Grady's fine set of 2010 predictions](#) I found myself popping with "oh, so naturally this will happen next ..." thoughts. Think of this as a glimpse of the blue sky after the economic funnelspout that's demolished our economy. (Continuations of the tornado metaphor with "being sucked into the cloud", or "trailer park economics", or "we're not in Kansas any more, Tantek" left as an exercise to the reader)

1. As every cloud provider creates their own "open API" (itself a [fraught term](#)), look to see the rise of brokers who can migrate you from one cloud to another. [Deltacloud](#) is an early free project here from RedHat, but there are many business opportunities waiting. It's possible that companies will pay for assurance (you've tested your migration tool, you know it works on corner cases), service vs product (they don't want tools to run, they want to pay you to install and maintain the tools accessible through a web console), or premium services so that you're a partner helping them get the most from the cloud and not simply a vendor.
2. We're a long way from sated in the world of collaboration tools. The current rage is mail learning, applying machine learning techniques to email so as to better understand social networks and prioritise incoming email messages and these are largely server-based solutions because it's so hard to get access to the desktop/web clients. Should Google Mail create an app store environment with hooks into the backend, the game could be on for consumer plays around email analytics, prediction, and simply smarter behaviour (why does my email client still not tell me when I say "see attached" yet don't have an attachment in the message?).
3. Beyond email, many interesting tools have sprung up around the Gov 2.0 space that have applicability within organisations. [Yammer](#) has done well to bring Twitter to large companies, but there are still opportunities around simple document markup and suggestion gathering and filtering. Solve a real problem and there's money waiting.
4. Google's low overhead management is made possible by its automated intranet and the visibility into projects from public

code repositories, public smoke builds, and public status blogs. The opportunities to sell this into large companies looking to be "more like Google" are huge.

5. If Stephen's right that datasets are increasingly viewed as "serious, balance sheet-worthy assets" then the world is going to need some serious balance sheet-worthy help in valuing those assets.
6. Big data is being democratised, but there's a lot of unmet need in businesses around data warehousing. The typical solution is to build a data warehouse team around a product like Oracle, but I've heard plenty of business people grizzling about the result. They want answers, they don't want the headaches and lag that a data warehouse involve. Big Data (or Cloud Analytics or whatever) may be the opportunity to figure out a new minimum viable product for these folks, and offer it without the "data warehouse" baggage. This might be back end, might be UIs, might be visualisation, but all of these have a lot of room for improvement.
7. The proliferation of developer targets immediately makes me think of the early PC era. It makes sense to proliferate: let the most useful ("successful") bubble to the top and survive naturally. At this point in the evolution of the scaleout of massively multiplayer online programming languages, we don't know exactly what winning looks like: it's a big feedback loop between the people who build the programming languages and the people with problems to solve (there are always more of the latter than former) and each time we go around it we know more about what is and isn't useful in this brave new world of coding for other people's data centres. Opportunity? Join the mob and write your own programming language, or simply take your commercial opportunity for a spin around the many different languages out there and be the first in your niche to find a good fit between problem space and solution tool.
8. Stephen's throwaway comment "I've never subscribed to the idea that only what can be measured can be managed - open source, in particular, belies that claim" seems like a thrown gauntlet on open source analytics. In particular, I suspect there's a tools opportunity around the nebulous "community manager" role that every company seems to need. It's part CRM, it's part developer tool, it's part tech support, and part camp mother. Usefully quantify

aspects of open source development and help companies that are doing it to know how they're doing and what they could do better.

9. Marketplaces are big in mobile, but I look to other areas as ripe for the picking. For example, if Google Apps are catching on in many companies then a plugin marketplace is a natural extension. It would build out the Apps suite faster than Google can, would enable the tight loop between demand and supply that will drive the product along, and make Google's offering very different from other parties. This is also true of Microsoft and others, but I feel like momentum is more with Google's product than the others. (A feature can push a leader further in front, but rarely helps a laggard leapfrog to the lead)
10. Every marketplace thus far has been flawed. Apple's famously annoys many developers and blocks huge categories of product (the "don't be better than we are" rule, which is hard to justify as being in the customer's interest), but don't forget Palm's impedance mismatch with jwz's open source code. I think the final chapter on how marketplaces work is far from written.
11. NoSQL tools remain in their infancy and so there are huge opportunities here. Identify a niche ("fast accurate and timely web metrics for decision-making"), a tool that can solve it (MongoDB), and build the deployment, scaling, administration, reporting tools so you can sell a complete package into that niche. Rinse, lather, repeat.

The War For the Web

On Friday, my latest tweet was automatically posted to my Facebook news feed, as always. But this time, Tom Scoville noticed a difference: the link in the posting was no longer active.

It turns out that a lot of other people had noticed this too. Mashable wrote about the problem on Saturday morning: Facebook Unlinks Your Twitter Links.

if you're posting web links (Bit.ly, TinyURL) to your Twitter feed and using the Twitter Facebook app to share those updates on Facebook too, none of those links are hyperlinked. Your friends will need to copy and paste the links into a browser to make them work.

If this is a design decision on Facebook's part, it's an extremely odd one: we'd like to think it's an inconvenient bug, and we have a mail in to Facebook to check. Suffice to say, the issue is site-wide: it's not just you.

As it turns out, it wasn't just links imported from Twitter. All outbound links were temporarily disabled, unless users explicitly added them as links via an "attach" dialogue. I went to Facebook, and tried posting a link to this blog directly in my status feed, and saw the same behavior: links were no longer automatically made clickable. You can see that in the image that is the destination of the first link in this piece.

The problem was quickly fixed, with URLs in status updates automatically now linkified again. The consensus was that it was in fact a bug, but it's little surprise that people suspected otherwise, given the increasing amount of effort Facebook puts into warning people that they are leaving Facebook for the big bad unsafe Internet:

All of this is well-intentioned, I'm sure. After all, Facebook is attempting to put in place privacy controls that allow its users to manage the visibility of their information -- and the Web's expectation of universal visibility is not necessarily the best default for much of the information posted on Facebook. But let's not kid ourselves: Facebook is a new kind of web site (or an old kind redux), a world of its own, playing by different rules.

But this isn't just about Facebook.

The Apple iPhone is the hottest web access device around, and like Facebook, while it connects to the web, it plays by a different set of rules. Anyone can put up a website, or launch a new Windows or Mac OS X or Linux application, without anyone's permission. But put an app onto the iPhone? That requires Apple's blessing.

There is one glaring loophole: anyone can create a web application, which any user can save as clickable application on their phone. But these web applications have limits - there are key capabilities of the phone that are not accessible to web applications. HTML 5 can introduce all the new application-like features it wants, but they will work only for web applications, and can't access key aspects of the phone with Apple's permission. And as we saw earlier this year with Apple's rejection of the Google Voice application, Apple isn't shy about blocking applications that it considers threatening to their core business, or that of their partners.

And now, of course, we see the latest salvo in the war against the accepted rules of interoperability on the web: Rupert Murdoch's threat to take the Wall Street Journal out of the Google search index. While most people have repeated the existing wisdom that to do so would be suicide for the Journal, a few contrarian observers have noted the leverage Murdoch holds. Mark Cuban argues that Twitter now trumps search engines when it comes to breaking news. Even more provocatively, Jason Calacanis suggested, a few weeks before Murdoch's announcement, that all big media companies need to do to cut Google off at the knees would be to block Google, while cutting an exclusive deal with Bing to be found only in Microsoft's search index.

Of course, Google wouldn't take that lying down, and would likely make its own exclusive deals, leading to a showdown that would make the browser wars of the 90s seem tame.

I'm not saying that News Corp and other mainstream media publications would adopt Jason's suggested strategy, or that it would work if they did, but it is becoming clear to me that we are heading into a bloody period of competition that could be extremely unfriendly to the interoperable web as we know it today.

If you've followed my thinking about Web 2.0 from the beginning, you know that I believe we are engaged in a long term project to build an internet operating system. (Check out the program for the first O'Reilly Emerging Technology Conference in 2002 (pdf).) In my talks over the years, I've argued that there are two models of operating system, which I have characterized as "One Ring to Rule Them All" and "Small Pieces Loosely Joined," with the latter represented by a routing map of the Internet.

The first is the winner-takes-all world that we saw with Microsoft Windows on the PC, a world that promises simplicity and ease of use, but ends up diminishing user and developer choice as the operating system provider.

The second is an operating system that works like the Internet itself, like the web, and like open source operating systems like Linux: a world that is admittedly less polished, less controlled, but one that is profoundly generative of new innovations because anyone can bring new ideas to the market without having to ask permission of anyone.

I've outlined a few of the ways that big players like Facebook, Apple, and News Corp are potentially breaking the "small pieces loosely joined" model of the Internet. But perhaps most threatening of all are the natural monopolies created by Web 2.0 network effects.

One of the points I've made repeatedly about Web 2.0 is that it is the

design of systems that get better the more people use them, and that over time, such systems have a natural tendency towards monopoly.

And so we've grown used to a world with one dominant search engine, one dominant online encyclopedia, one dominant online retailer, one dominant auction site, one dominant online classified site, and we've been readying ourselves for one dominant social network.

But what happens when a company with one of these natural monopolies uses it to gain dominance in other, adjacent areas? I've been watching with a mixture of admiration and alarm as Google has taken their dominance in search and used it to take control of other, adjacent data-driven applications. I noted this first with speech recognition, but it's had the biggest business impact so far in location-based services.

A few weeks ago, Google offered free turn-by-turn directions for Android phones. This is awesome news for consumers, who previously could get this only in dedicated GPS devices or with high-priced iPhone apps. But it's also a sign just how competitive the web is getting, and just how powerful Google is getting, *because they understand that "data is the Intel Inside" of the next generation of computer applications*.

Nokia paid \$8 billion for NavTeq, the leading provider of such turn-by-turn directions. GPS-maker TomTom paid \$3.7 billion for TeleAtlas, the #2 provider in the market. Google quietly built an equivalent service, and is now giving it away for free -- but only to their own business partners. Everyone else still has to pay high fees to NavTeq and TeleAtlas. What's more, Google upped the ante by adding in such features as Street View.

Most interestingly, this move sets the stage for the future competition between Google and Apple. (Bill Gurley's analysis is an essential read.) Apple controls access to the dominant device of the mobile web; Google controls access to one of the most important mobile applications, and so far, is making it available for free only on Android. Google's prowess is not just in search, but in mapping, speech recognition, automated translation, and other applications driven by huge, intelligent databases that only a few providers can offer. Microsoft and Nokia control comparable assets, but they too are Apple competitors, and unlike

Google, their business model depends on selling access to those assets, not giving them away for free.

It could be that everyone will figure out how to play nicely with each other, and we'll see a continuation of the interoperable web model we've enjoyed for the past two decades. But I'm betting that things are going to get ugly. We're heading into a war for control of the web. And in the end, it's more than that, it's a war *against* the web as an interoperable platform. Instead, we're facing the prospect of Facebook as the platform, Apple as the platform, Google as the platform, Amazon as the platform, where big companies slug it out until one is king of the hill.

And it's time for developers to take a stand. If you don't want a repeat of the PC era, place your bets now on open systems. Don't wait till it's too late.

P.S. One prediction: Microsoft will emerge as a champion of the open web platform, supporting interoperable web services from many independent players, much as IBM emerged as the leading enterprise backer of Linux.

I'll be speaking on this topic in my keynote at the Web 2.0 Expo in New York on Tuesday. I'll look forward to seeing many of you there.

Four short links: 16 November 2009

1. Choose Your Own Adventure -- numerical and visual analysis of the Choose Your Own Adventure novels. The distinguishing characteristic of My Kind Of People is that they appreciate the quantitative study of the commonplace. (via Bryan O'Sullivan)
2. Tracking Droid Numbers -- uLocate, the makers of the Where app for Android, have been tracking the growth of the Droid phone using the data they get from the Android app store. (via BoyGenius Report)
3. Fly Eyes Makes Better Robot Vision -- *to make smaller flying robots, researchers would like to find a simpler way of processing motion. Inspiration has come from the lowly fly, which uses just a relative handful of neurons to maneuver with extraordinary dexterity. And for more than a decade, O'Carroll and other researchers have painstakingly studied the optical flight circuits of flies, measuring their cell-by-cell activity and turning evolution's solutions into a set of computational principles. [...] Intriguingly, the algorithm doesn't work nearly as well if any one operation is omitted. The sum is greater than the whole, and O'Carroll and Brinkworth don't know why. Because the parameters are in constant feedback-driven flux, it produces a cascade of non-linear equations that are difficult to untangle in retrospect, and almost impossible to predict.* (via Slashdot)
4. Meat Band Aids and Mass Production of Living Tissue -- *Apligraf is a matrix of cow collagen, human fibroblasts and keratinocyte stem cells (from discarded circumcisions), that, when applied to chronic wounds (particularly nasty problems like diabetic sores), can seed healing and regeneration.* This Gizmodo Q&A is informative.

Ignite NYC on 11/16: Gov 2.0, Body Hacks, and Hi-Tech Craft

The Web 2.0 Expo starts tomorrow, 11/16, in NYC. We're kicking off the conference with an Ignite featuring 14 great speakers. The event is at the New World Stages. I'll be co-hosting with Ignite NYC organizer Tikva Morowati.

As always each speaker gets just five minutes on stage. Their presentation will each be just 20 slides that each auto-advance every 15 seconds. The Speakers include:

- * Alison Lewis, <http://www.iheartswitch.com/> (high tech craft)
- * Brady Forrest, <http://radar.oreilly.com/brady/> (Burning Man as tech incubator)
- * Casey Pugh, <http://www.starwarsuncut.com/>
- * Hilary Mason, <http://www.hilarymason.com>
- * Jennifer Pahlka, <http://www.codeforamerica.org/> (Gov 2.0)
- * Jonathan Brill, <http://Productlust.com>,
<http://www.multitouchmaven.com>
- * Judy Shapiro, <http://trenchwars.wordpress.com>
- * Kevin Marks, <http://epeus.blogspot.com/>
- * Leesean Hepnova, <http://www.leesean.net>
- * Lauren Schmidt, <http://www.mit.edu/~lschmidt>
- * Molly Wright Steenson, <http://www.girlwonder.com>
- * Nora Abousteit, <http://www.burdastyle.com>
- * Patrick Davidson, <http://Whereikeepmythingsontheinternet.com>
- * Quinn Norton, <http://quinnnorton.com/> (body hacks)
- * Ray Beckerman, <http://recordingindustryvspeople.blogspot.com>
- * Tony Haille, <http://tonyhaille.com>

Here is a rough schedule for how the night will go:

- 7:00 pm - Doors Open for Conference & Expo Plus Pass holders
- 7:30 pm - Doors Open for Expo Plus Pass holders
- 7:45 pm - Doors Open for general public attendees (pending capacity)
- 8:00- 8:15 - Mobile Music Competition
- 8:15- 9:45PM - Ignite Talks
- 10PM -- Bar closes

We are going to start the evening off with an Ignite Mobile Music Competition, giving you a chance to win a FREE pass to Web 2.0! We will provide the mini cord, you provide the mobile instrument. Recommended apps include Sonifi, Drumbanger, and Bloom. Please fill

out this [entry form](#) if you'd like to show off your mobile music making skills!

We will also randomly choose one lucky Twitter user who tweets using <http://bit.ly/IgniteWeb20> to win a FREE pass to Web 2.0 Expo NY. You must show up at Ignite to win!

[RSVP on Facebook](#)

It's in the Bag! The Apple Tablet Computing Device

In the past 25 years, the personal computing revolution has evolved from tethered (desktop) to luggable (portable) to joined-at-the-hip (mobile).

Via the iPhone Platform (including iPod Touch), Apple has set the bar for mobile computing by seamlessly integrating computation, communications, and media across hardware, software, and service layers.

No less integral, Apple has significantly evolved ecosystem development models by cobbling together developer tools, media relationships, marketplace/e-wallet functions, one-click software distribution, explicit platform governance, and a simple, but compelling, approach to sharing revenue with developers.

But, the *pièce de résistance* has been a touch, tilt, sensor, and virtual keyboard-based user interaction model that has rendered the traditional physical keyboard plus WIMP-based model (i.e., windows, icons, menus, and pointing device) as so last century, the proverbial horse-and-buggy to Apple's Model T.

The end result is that the iPhone has become the first truly *personal* computer; more personal to its owners than the PC ever was, a truth that bubbles to the top again and again when you talk to the 50M (combined) iPhone and iPod Touch owners.

Thus, the core thesis of this article is two-fold. One, that while Apple remains committed to cultivating its position in the legacy desktop /portable segment via the Mac, they understand that they will never be the leader of the PC market.

Two, given their dominance in mobile computing platforms, Apple will expand upon their iPhone strategy by attacking an "undefended hill" (an HP axiom) that's less hospitable to desktops/portables; namely, the bag-carrying consumer (think: purses, backpacks, briefcases, and the like).

The Bag-able Device: from Living Room to Classroom, Café to Bus
First, a market-sizing question. How many tens of millions of people carry a bag wherever they go that is large enough to accommodate a bookish-sized device?

From a sniff test, would there be room for a really "phat" version of the iPod Touch in *your* backpack? Your kid's? Would you make room?

Before answering, imagine that you're kicking back on the couch, with a cappuccino in one hand and a Tablet in the other. After all, this is a device that is **recline-able** in the sense that you can comfortably use it from any position that suits you (it's neither overly bulky or hot, and input operations can be performed from any angle you desire).

Moreover, owing to its relative absence of moving parts and exposed interfaces, the Tablet is also **slob-friendly**, a euphemism for saying that it's not the end of the world if you are eating pizza while using it (less susceptibility to spills, sauces and greasy fingers).

In turn, this means that it's **kid-friendly** since the dearth of moving parts also means fewer to break. On top of this, Apple's governance model provides a more direct path for parental controls on what types of apps can be used, and for how long.

Taking the Tablet out of your bag, you instantly notice that this is a device that can support multiple modalities in a robust fashion. A bigger screen means truer multi-touch, richer interaction possibilities, and a *personal home theater* experience that simply rocks (especially, when wearing decent headphones). Plus, as iPhone has proven, this is no underpowered computing device. Skype me? Sure. Video chat? In a snap. Day planner? C'mon!

Now, imagine iPhone's current gaming support scaling up to this device (not to mention the other two thirds of the 100K-app-strong App Store).

(**Sidebar:** I expect a straightforward upgrade path for developers to port their iPhone Apps to also run on the Tablet, offering tremendous platform leverage to the estimated 120K iPhone App developers.)

Moreover, given their iTunes foothold, how much do you want to bet that, coincident to the Tablet launch, Apple pursues a TV 3.0 play (aka, TV Everywhere) powered by a subscription service for music, movies and TV programming? In one fell swoop, the leverage of a TV 3.0 play could be extended not only to the Tablet, but to the Mac, iPhone, iPod, and Apple TV as well.

Who else can match that kind of end-to-end firepower, especially in light of Apple's announcement that the iTunes/App Store Universe is backed by 100M active credit card-backed user accounts?

That's also why Apple rebooting the book marketplace is such a given from where I sit (i.e., look out, Kindle).

A final note: while businesses/enterprises have been less central to the iPhone story to date, I think that the Tablet is a device that is tailor-made for verticals and VAR (value added reseller) channels, with Education, Health Care, Retail, and Field Support as obvious beachheads.

Flies in the Ointment: Avoiding the Tyranny of the Either/Or

So what could go wrong? Apple's challenge is to ensure that consumers never feel like they are being forced to make a binary Either/Or decision between an iPhone, an iPod Touch, a Tablet, and of course, a MacBook.

Under the hood, managing this one touches upon core strategic decisions about form-factors, runtime capabilities, and functional symmetries/asymmetries between the different Apple device offerings ([read more](#) about Apple's coming Hardware/Software Matrix decisions).

At the same time, some of this is market segmentation thinking, and allowing consumers to choose the level of integration, the type of computing model, and the depth of Apple-centric leverage that makes most sense for them.

Why? Because Apple's overriding goal is to grow their portion of the consumer's communications, media, entertainment, and **Engagement Time** online, and in concert, their **Portion of Spend** for those services.

To be clear, though, Apple has already proven that they can navigate this one with the release of iPhone, and the related segmenting decisions relative to iPod Touch and iPod (if anything, the net-out has been a total Halo Effect). Hence, I am optimistic that not only will they successfully navigate this path with the Tablet, but that they have been planning for this transition for a long, long time.

As such, for Apple, a successful Tablet launch is not merely a fuzzy ambition, but rather, it's in the bag.

Related Posts:

- 1.
2. [Rebooting the Book: One Apple iPad Tablet at a Time](#)
3. [Apple, the 'Boomer' Tablet and the Matrix](#)
4. [Touch Traveler: London, Paris and only an iPod Touch](#)

Four short links: 13 November 2009

1. [Open Source Enters The World of Atoms](#) -- an academic statistical analysis of open design. *We indicated that, in open design communities, tangible objects can be developed in very similar fashion to software; one could even say that people treat a design as source code to a physical object and change the object via changing the source.*
2. [Why I Like Redis](#) (Simon Willison) -- coherent explanation of why Simon likes and uses a particular nosql system. *I can run a long running batch job in one Python interpreter (say loading a few million lines of CSV in to a Redis key/value lookup table) and run another interpreter to play with the data that's already been collected, even as the first process is streaming data in. I can quit and restart my interpreters without losing any data. And because Redis semantics map closely to Python native data types, I don't have to think for more than a few seconds about how I'm going to represent my data.*
3. [© kiwiright](#) (Vimeo) -- short documentary about copyright, made to raise awareness of the issues in New Zealand. (just as applicable to the rest of the world)
4. [Your Movements Speak For Themselves](#) (Jeff Jonas) -- *Mobile devices in America are generating something like 600 billion geospatially tagged transactions per day. Every call, text message, email and data transfer handled by your mobile device creates a transaction with your space-time coordinate (to roughly 60 meters accuracy if there are three cell towers in range), whether you have GPS or not. Got a Blackberry? Every few minutes, it sends a heartbeat, creating a transaction whether you are using the phone or not. If the device is GPS-enabled and you're using a location-based service your location is accurate to somewhere between 10 and 30 meters. Using Wi-Fi? It is accurate below 10 meters. A thought-provoking roundup of the information leakage with modern locative systems. (via [TomC on Twitter](#))*

Hack a Day

Build a camera boom at less than a grand

The folks at The Geek Group built a camera crane for less than \$1000. In the video embedded after the break a presenter takes you through the different parts that make up the boom and how it is operated. This feels like something from a Junkyard Wars challenge as most of the parts are scavenged or from an industrial surplus store. Don't let that sour your opinion, what they've ended up with is amazingly functional.

The base of the unit is a rolling tripod used for television cameras from around the 1960's. The aluminum boom attaches to the base with a few large bearings and features a fine tuning balance system. The camera mount is motorized and can be moved using a joystick or set to scan automatically. It's nice to see more examples of custom camera mounts. Obviously this isn't a build for everyone, but as cameras and camera equipment become more readily available it makes high quality video production available for the masses, not just the networks.

Camera crane walkthrough.

Camera crane shot demo.

[Thanks Will]

LED PDF from TI (KUWTA)

[Satiagraha] let us know that Texas Instruments(TI) has given out a neat "LED Reference Design Cookbook" PDF. The document contains 17 some odd little projects featuring different TI ICs and ways of using them to control LEDs in things from backlights to torches to solar lanterns to advanced PWM control! Sure the document is biased towards using TI equipment, but that shouldn't stop you from recreating, modifying, and generally just having fun with their designs in your own productions.

Review: mbed NXP LPC1768 microcontroller

mbed is a next-generation 32-bit microcontroller platform. It's a prototyping and teaching tool somewhat along the lines of Arduino. On steroids. With claws and fangs. Other contenders in this class include the MAKE Controller, STM32 Primer and Primer 2, Freescale Tower, and Microchip's PIC32 Starter Kit. The mbed hardware has a number of advantages (and a few disadvantages) compared to these other platforms, but what really sets it apart is the development environment: the entire system — editor, compiler, libraries and reference materials — are completely web-based. There is no software to install or maintain on the host system.

The Hardware

The mbed board is sensibly priced at \$60; about middle of the road among its peers. mbed's size (or lack thereof) is among its greatest assets, measuring only about 1" by 2" (26 x 52mm) in a stout 40-pin DIP package that just barely manages to fit in a breadboard...a major win.

The top of the board is dominated by the microcontroller itself: a 60MHz NXP LPC1768 based on the eminently capable 32-bit ARM Cortex-M3 core, sporting 64K of RAM and 512K flash, and rounded out with an embarrassment of peripheral riches: Ethernet, USB (host, device, and to-go), CAN bus, multiple serial, I2C and SPI buses, 12-bit A/D and even a 10-bit D/A converter and realtime clock/calendar. Also on top is the USB connector (mini-B), some power regulation circuitry (operating on 4.5 to 9 volts DC, or USB power), several indicator LEDs, and the reset button (a plain vanilla tactile switch on our purchased unit, not the candy-like blue button seen in product shots).

The underside conceals an Ethernet transceiver chip (requiring only the addition of an RJ45 jack to get the board on a network) and a DiskOnChip-style component that provides a small (about 2MB) FAT filesystem when attached to a host system through USB, much like a thumb drive.

This latter feature — the FAT filesystem — is half of the key to mbed’s software-free, cross-platform magic. Getting new code onto the device is simply a matter of copying the compiled program (as a .bin file) to this drive. Press the reset button, and the new code is copied to the MCU’s internal flash and run. No special programming hardware dongle, no special bootloader software, just drag and drop. This has some serious implications. Pretty much *any* system these days can mount a FAT filesystem. We’re not just talking about getting Mac and Linux users into the fold alongside Windows...there’s also the impending wave of featherweight netbooks with ARM and VIA chips running peculiar, instant-on operating systems. Or the OLPC XO-1. Or older PowerPC Macs. The computers in the school’s lab that you’re not allowed to install any software on. Game consoles.

The Software

“Cloud computing” is still the hot buzzword this week, and the mbed project has adopted the concept wholeheartedly, comprising the other half of their softwareless strategy. Everything with mbed — *everything*, even your own source code — resides on their servers and is accessed through a web browser. This carries with it all of the good and bad points of any other network-based service such as Google Docs. There’s the potential for this to be a fantastic tool for teaching and collaboration, and in fact they’ve created such an online community for mbed, with forums and publicly-shareable code libraries. One can move between home and office, or travel around the world, and resume editing code on any system with a solid ‘net connection. No need to check for software updates; the server will always be current.

mbed programs are written in C++ (yes, thankfully it’s “programs” and “C++,” not “sketches” or “the mbed language”) using their JavaScript-based online editor. When ready, click the *Compile* button. The compiler and linker run on the back end, on the server at the other end of the network connection. Provided your code is all syntactically valid, a compiled .bin file will then be downloaded to your computer...save this to the mbed USB disk, press the reset button, and you’re good to go. In Arduino-like fashion, the mbed device also appears as a virtual COM port, so you can monitor a program’s serial output using any terminal program.

The Good

We were taught that you should always say something kind before criticizing, so we'll point out that the above process does, in fact, work exceedingly well, and has proved to be both quick and reliable. Once you get into the groove, the sequence of operations is no more onerous than with Arduino or any other microcontroller-specific programmer dongle.

To their credit, unlike some microcontroller evaluation kits, there are no artificial limitations to the mbed compiler; the full code and memory space of the processor is available to your code. The editor has realtime syntax coloring and multiple undo levels. And double-clicking on an error message in the compiler output will take you directly to the offending line, as in any decent IDE. You can import existing code from your local system to the mbed "cloud," or likewise export individual files or an entire project. All good stuff.

The real saving grace of this setup is the libraries, both the official functions in what they call the "Handbook," and community-contributed code in the "Cookbook." A tremendous amount of functionality has been implemented in a concise and usually object-oriented manner. It's almost comical sometimes, after having worked with other microcontrollers and girding for some expected coding nightmare, only to find that the corresponding library handles a task in a couple of lines (browse through the Handbook and Cookbook for examples). There's a tendency also to follow `stdlib` or "UNIX-like" conventions for file access, character I/O, realtime clock access, etc., so existing systems programmers new to microcontrollers will feel right at home, no weird function names or syntaxes.

The mbed's FAT filesystem is also accessible to the microcontroller, making it useful for more than just program storage. Web pages can be served from this space, or a data logging program can store results here. If the two megabyte capacity is too limiting for your needs, have a look at the SDCard library in the Cookbook — it's almost trivial to wire up and use. Pretty much *all* of the libraries are like that!

The Bad and the Ugly

Hardware-wise, there are just a few minor nitpicks:

First is with the local FAT filesystem. Even though this is one of the device's most unique features, and the very thing that enables its platform neutrality, the implementation just seems a bit anachronistic. The aforementioned SDCard library demonstrates how readily that format can be used. It's faster, with the potential for far greater capacity, and cards could be easily swapped out for different code or data files. Not a major disappointment, just seems like an opportunity was missed to make this product even better.

Second is with the indicator LEDs on the board. Four of them, scant millimeters apart, *all blue*...making them pretty much worthless as status indicators from across the room, where they all blur into a singular blob. Ten years ago, blue LEDs were *novel*. Five years ago, they were *mainstream*, festooning every last USB hub, mouse, flash drive and imported piece of crap. Today they're just *tired*, let's get over it. Different colors would indicate status at a distant glance.

Finally, not a problem with the mbed board itself, but it would be nice to see one of the Cookbook projects, the "BoB2" breakout board, made into an available product. The blank board can be ordered through [BatchPCB](#), but after postage and handling the price for just the empty board — no components — is \$33. Have this populated and mass-produced, bundle it with the mbed in a \$100 package, and it sounds like a winning setup, ready to go head-to-head with the MAKE Controller.

But really, those are just nitpicks. Our *real* beef is with the software...the code editor specifically. If you find the Arduino editor aggravating, the mbed editor will have you seeing red (or maybe purple if you factor in all those blue LEDs). Like Arduino, there's no true tab formatting; everything's expanded to spaces, like it or not. Auto-indent cannot be disabled, and there's seemingly no command to increase or decrease the indentation of a block of code. If you're accustomed to anything more than arrow keys to move and click-and-drag to highlight text, the editor disregards a lot of system-native editing behaviors that may be deeply ingrained in your muscle memory (such as shift-clicking to select a range of text, or triple-click-and-drag for multiple contiguous lines). What's more, the quirky behaviors are a little different across each

browser and operating system. Don't even *try* that triple-click-and-drag in Firefox for Mac...you won't get your text cursor back without a complete reboot (seriously, just restarting the browser isn't sufficient). And at present, only the most common browsers are supported; all others are currently shut out.

The closed-source nature of the tools may also be off-putting to some. If one finds the Arduino editor distasteful, there are options: get in there and change the code, or simply use a different editor and link with the Arduino libraries manually...it's all legal and encouraged. With mbed, there are no alternatives. Access to the compiler and libraries is "free as in beer," but not "free as in speech." There's little recourse should the service ever be taken down, or if they should suddenly start charging a subscription fee (there's no indication this is planned, just a hypothetical scenario).

The good news, at least with regard to the former, is that software is of course infinitely more malleable than hardware, and it's almost certain the tools will improve with time. The site is under active development...new "Home" and "Notebook" features were added for registered users just yesterday. Perhaps, given time, they'll get the Command key working properly on the Mac. The selection of user-submitted code will expand regardless, making it progressively easier to do more and different things with this board.

In Summary

The [mbed Tour page](#) is frank about what the platform is good for, and what it's not. mbed was intended as a quick prototyping and educational tool, and at that it excels. A lack of features such as a debugger or offline compiler keep this from being a professional-strength development platform, which is okay. Think of it as Arduino: The Next Generation. Although the mbed board costs more up front than Arduino, there are capabilities here that would otherwise require costly "shields" and strain every last byte and CPU cycle of the 8-bit ATmega328 processor: Ethernet, USB, SD cards...mbed handles these tasks with aplomb.

mbed is not without its flaws, and the "cloud" development approach may never sit right with some. For a product that's just weeks out of beta

testing, the results thus far are extremely encouraging. There's immense potential here: a seriously powerful chip, easy to interface and to program. If the online tools can be improved, or if open source alternatives become available, mbed could be a major player. We expect to be seeing a lot more of this device in future hacks.

Multixylophoniomnibus

[Ania] wrote in to let us know her team had finished the Multixylophoniomnibus and that they have posted an extensive writeup about it. We covered this augmented xylophone when it was still in development at the beginning of this month. Originally they wanted to use mallets wrapped in tinfoil as switches that close when they contact the metal keys, something akin to matchbox cars as a switch. This plan was thwarted when they realized the paint surface insulated the metal keys. At this point they switched to piezo sensors which turned into an odyssey of trial and error to achieve a reliable input for the Arduino to monitor. In the end they got it working with around forty lines of code, interfacing six boxes containing a different type of noisemaker.

See the finished instrument played in the video after the break. Alas, the addition of the piezo sensors do impede the resonance of the xylophone keys, but we still like it! There's something reminiscent of the beginning of Pink Floyd's Money when this is played.

Tube prototyping station

[Gio] enjoys using vacuum tubes in his projects. He designs the circuits using a CAD program but was finding that there is no substitute for actually building a prototype before heading to a final design. To make this process easier, he built his own tube prototyping station.

At the top of the board he's got three different sizes of tube sockets with the pins from each wired as common. The nine pins from the sockets break out to a terminal strip where they can be interfaced with a solderless breadboard. For added versatility he's included terminals to tap into some RCA jacks, as well as a 100 kOhm variable resistor. We'd bet this is not something that you can find ready-made, but it sure does look a whole lot better than a workbench full of components alligator-clipped together.

Remote uses no batteries

How often do you change the batteries in your television remote control? Yeah, basically never. But that's a tribute to how efficient the device is and not a reason to overlook this development. NEC is showing off a remote control that uses no batteries. Power is generated using the piezo effect that occurs when a button is pushed. That is to say, when a crystal is compressed it emits a tiny bit of electricity which is harnessed and used to power this device. This is the same principle that is used in the electricity producing sidewalks tested in Japan.

It's pretty phenomenal that they can run the device using this method. Right now there's only a handful of buttons but we're sure there'll be advances in the technology. There's a ton of use for this if it can be miniaturized. It is using radio frequency instead of infrared, making it a useful development in wireless doorbells, garage door openers, key-less entry fobs for your car, and many more applications.

[Thanks das_coach]

USB accelerometer controller

As you can see above, there is no wiimote in that accessory steering wheel. There is, instead, a home-made accelerometer controller that connects to the pc via USB. Based around a PIC 18F2550 and a 2 axis accelerometer, this device is detected by windows as a standard controller. The schematic and source code are available on his website. He says it can also be used as a “motion mouse”. You can see a video of that after the break.

When we first saw the video, we thought it might be the same person as the accelerometer controlled maze project, due to the wiimote steering wheel casing.

[via make]

Axe your camera (again!)

[Maurice] let us know that his latest photography tool for hackers, the Camera Axe 3.0, is now available. The original allowed you to trigger a high-speed flash and camera from a multitude of sensors, including light and sound. The new one does all that, but also: allows multiple cameras or multiple flashes, clean up of software to make it more user adaptable, and the best (arguably the most important) part – cheaper components! All that and more under the Creative Commons that we do love so much. Keep up the amazingly detailed and just pure awesome work [Maurice].

Complete the maze, get a gumball

This neat accelerometer controlled marble maze adds a level of fun to retrieving a gum ball. You have to first navigate the maze using a controller that has a dual axis accelerometer in it to control the angle of the platform. Though that does look like a wii accessory, there is no wiimote in there. Only after you have completed it will the gum ball machine dispense the candy. [Dan] constructed everything himself, which might explain the lack of “pits” for the marble to fall into in the maze.

More details on the build and source code are available on his page.

[via hacked gadgets]

Another stationary bike VR rig

[Shingo] shared his implementation of a stationary bike as a virtual reality interface. This is similar to the Google Street View setup we covered a week ago but goes a few steps further. They patched into the bike computer to pick up rotation of the bicycle wheel and added an accelerometer for directional control. This setup can navigate through Street View but the video after the break also details an interface with Google Earth and even the ability to navigate through Second Life, following your avatar as it bikes along with you. The use of a wearable display is far superior to something like the SurfShelf and really gives you a goal other than just some cold-weather exercise. So take this idea, patch it into a wearable computer and you've got the exercise setup worthy of the future world we've been promised.

AVR8 virtual processor on FPGA

[Jack] wrote in to let us know about a project that creates a virtual microprocessor core based on the ATmega103 by using a Field-Programmable Gate Array. Great, we thought. Here's another rather esoteric project like the NES on a FPGA, but what's the motivation behind it? We asked [Jack] and he provided several scenarios where this is quite useful.

Implementing the AVR core allows code already written for the chips to be easily ported to an FPGA without a code rewrite. This way, if your needs outpaced the capabilities of the microcontroller long after the project has started, you can keep the code and move forward from that point with the added capabilities of the gate array. Having the core already implemented, you then only need to work with HDL for the parts of the project the AVR was unable to handle. He also makes the point that having an open source AVR core implementation provides a great tool for people already familiar with AVR to study when learning VHDL.

With products like the Butterfly that this project is based around, or the Maple we've seen in the past, programmable logic for the recreational hacker is starting to get a little easier.

When an axe isn't enough

[Chris] wanted a guitar with a keyboard but didn't want a keytar. Like any good hacker he took a cheap guitar and a small keyboard and introduced them to each other. He moved the control knobs to make room for the keyboard and added the control circuitry from the keyboard to the top of the guitar's body. A 9v battery is used to power the keys and something called "Chris Collins' transformer trick" is used to amplify its sound. If you know details on this transformer, leave a comment and we'll update the post. Take a look at the video after the break to see [Chris] perform the Final Countdown on keys and guitar.

The guitar is a Chinese made Telecaster clone and we think he's the first one to find a realistic use for keyboards that don't use full-sized keys. [Chris] apologizes for the lack of build photos but we give him a pass; he lost his phone while crowd-surfing and that's as good an excuse as any for losing some pictures. We can't wait to see another performance with this gnarly axe once he's had enough practice to pull everything together!

Uzebox in an NES controller

[David Cranor] has managed to fit a fully working Uzebox system into an old NES controller. Uzebox, an open source gaming platform based on the ATmega 644 and an AD725 NTSC encoder, is one of a couple systems that are becoming more and more widespread and accessible. There are a number of ready-to-go Uzebox kits available, but for the more hands-on types, [David] has been very generous with his schematics and step by step instructions. These schematics can all be readily reshaped, and would easily fit into controllers with less fun applications and sentimental value.

(Mini) Earthquake in your living room

Today we stumbled upon [jimthree's] Seismic Reflector while looking at projects that employ the Processing language we mentioned a few days ago. Utilizing a Boarduino and some vibration motors from a game controller, the Seismic Reflector does just as its name implies – rattles itself around whenever there is an earthquake. While this does seem a bit silly at first, we were fascinated to learn there have been 165 earthquakes just in the past week and almost no news reports, suddenly this device got a lot more interesting!

Outerspace: reactive robotics

While Outerspace may not have an extremely useful function, being an art installation, we really enjoyed reading through the build information. Basically, Outerspace is supposed to appear to be curious, exploring it's surroundings and reacting to your contact. We do enjoy a little bit of personality in robots, so this seems like it could be fun. The head has 5 photo sensors and each piece of the "arm" has capacitive sensors. This allows Outerspace to sense what is going on. The motion itself is controlled by 4 servos in the base pulling cables that run through the body.

The programming seems like it could use a little work to achieve the effect of being "curious", but we see potential here. You can see a video of it in action here.

[via today and tomorrow]

CNET Top Tech News

GrandCentral Web site to jump the tracks

Google on December 31 will shut down site for GrandCentral, which it acquired and reworked into Google Voice. Users should back up old messages now.

NASA signs 'The Rock' to make it seem cool

Dwayne "The Rock" Johnson, who plays an astronaut in the new movie "Planet 51," is NASA's latest endorser, reminding people just how useful space travel really is. The Rock? Really?

Another (loud, fuzzy) peek at Wired's tablet edition

What will Conde Nast magazines look like once they show up on tablet computers made by Apple, Hewlett-Packard, and others? This video gives you an idea.

McAfee warns about '12 Scams of Christmas'

Shoppers and retailers aren't the only ones gearing up for the holidays. Criminals are out in full force with plenty of scams to separate you and your money

Firefox: Heat and the CPU usage problem

Mozilla's browser does not efficiently use a computer's CPU and, consequently, can cause overheating problems in some laptops, particularly ultraportables.

Large Hadron Collider up and running again

The world's biggest particle accelerator is in full operation after a year of repairs.

Seize Seismic Twitter app on BlackBerry, Android

Twitter service Seismic expands from the desktop with two new apps for Google Android and BlackBerry phones.

Reporters' Roundtable Podcast: Tech biz turkeys

In the history of tech, some decisions stand out as truly awful. This week, Rafe Needleman, Charlie Cooper, and Jim Kerstetter go over some of the worst ever.

Game developer cuts back on Android in favor of iPhone

One game developer said it is cutting its investment in Android in favor of Apple's iPhone because it sells 400 times more games for the iPhone than it does for Android.

Can Facebook group change World Cup game result?

The World Cup elimination game between France and Ireland was decided by a piece of blatant cheating. A Facebook group, more than 250,000 strong, wants it replayed.

Techmeme Mobile launches for iPhone, Pre, Droid

Popular tech news aggregator Techmeme has launched a new mobile version of the site for the Apple iPhone, Palm Pre, and Motorola Droid.

How smoking can ruin your Mac

According to a report, AppleCare warranties can be voided if Apple deems the damage was caused by secondhand smoke. Appeals to Steve Jobs have, apparently, not succeeded.

Windows 8 in 2012?

It's not clear what Microsoft's desktop plans are, but the Windows Server team included slides at PDC suggesting a new major release coming around 2012.

CNET News Daily Podcast: Nokia's layoffs and Skype's eBay adieu

Nokia is cutting its R&D workforce, while eBay says goodbye to Skype. Hear more about these stories and others in today's episode.

Electric-car maker Tesla preparing IPO

An IPO filing for the electric-car start-up is expected any day, according to sources. Public offering would be the first from a U.S. automaker since Ford Motor shares debuted in 1956.

Sony planning new online store

Taking a page from Apple's iTunes, Sony is devising an online store offering music, movies, books, and other downloadable content for its various devices.

Nook sold out for the holidays

Barnes & Noble has announced on its Web site that its much-anticipated e-book reader, the Nook, is sold out through 2009. Is that good news for Amazon?

Bedside vital signs monitor goes mobile

Drager's Infinity M540 displays a patient's real-time vital signs on the go. Designed to fit in the palm of a caregiver's hand, the display auto-rotates so that it is always upright.

Brin: Google's OSes likely to converge

Puzzled onlookers have wondered why Google is overseeing two separate operating-system projects. Co-founder Sergey Brin thinks that at some point the two will become one.

Week in review: Browser breakthroughs

From Azure to Windows 7 to Firefox, operating systems and browsers grabbed headlines this week as Google proved, with its unveiling of Chrome OS, how interrelated they are.

Unboxing the free PDC laptop (photos)

CNET has a look as one developer at the Microsoft PDC gathering in Los Angeles unboxes an Acer laptop, which were given to most attendees.

Slashdot

Brazilian Breaks Secrecy of Brazil's E-Voting Machines With Van Eck Phreaking

After the report last week that Brazil's e-voting machines had withstood the scrutiny of team of invited hackers, reader ateu writes with news that a hacker has shown that the Linux-based voting machines aren't perfectly safe; he was able to eavesdrop on them (translated from Portuguese) by means of Van Eck phreaking.

[Read more of this story](#) at Slashdot.

Ten Things Mobile Phones Will Make Obsolete

An anonymous reader writes "recombu.com has an article examining ten things mobile phones will make obsolete, including phone booths, wristwatches and handheld games consoles. It's interesting to see how many devices have been absorbed into mobile phone technology and it begs the question, are we better off having everything in one device? The author poignantly concludes that while it's great to have so much power at our fingertips it does mean that some of us will rely on mobile phones for even basic mental tasks, which is great until the battery runs out." See also Isaac Asimov's *The Feeling of Power*.

[Read more of this story](#) at Slashdot.

Best Practices For Infrastructure Upgrade?

An anonymous reader writes "I was put in charge of an aging IT infrastructure that needs a serious overhaul. Current services include the usual suspects, i.e. www, ftp, email, dns, firewall, dhcp — and some more. In most cases, each service runs on its own hardware, some of them for the last seven years straight. The machines still can (mostly) handle the load that ~150 people in multiple offices put on them, but there's hardly any fallback if any of the services dies or an office is disconnected. Now, as the hardware must be replaced, I'd like to buff things up a bit: distributed instances of services (at least one instance per office) and a fallback/load-balancing scheme (either to an instance in another office or a duplicated one within the same). Services running on virtualized servers hosted by a single reasonably sized machine per office (plus one for testing and a spare) seem to recommend themselves. What's your experience with virtualization of services and implementing fallback/load-balancing schemes? What's Best Practice for an update like this? I'm interested in your success stories, anecdotes but also pointers and (book) references. Thanks!"

[Read more of this story](#) at Slashdot.

Microsoft, Other Rivals Slam Google Chrome OS

CWmike writes "Microsoft is, predictably, not all that impressed by Google Inc.'s demonstration of its upcoming Chrome OS, saying 'From what was shared, it appears to be in the early stages of development,' a Microsoft spokeswoman said. 'From our perspective, however, our customers are already voicing their approval of the way Windows 7 just works — across the Web and on the desktop, and on all sizes and types of PCs — purchasing twice as many units of Windows 7 as we've sold of any other operating system over a comparable time.' But neither were potential rivals who make Linux and instant-on operating systems. Chrome OS claimed 7-second boot times, and an ability to run Web apps within another 3 seconds failed to impress Woody Hobbs, president and CEO of Phoenix Technologies, a long-time BIOS software maker that has re-invented itself with a Linux-based instant-on OS called HyperSpace. 'Instant-on is about being able to access your Internet applications in one second. Seven seconds is too long,' Hobbs said. 'There is no such thing as "cold boot" for today's mobile PCs such as netbooks and smartbooks. You should be able to use your netbook like you use your smartphone — a press of a button and you are "on."' Mark Lee, CEO of DeviceVM Inc., said Google's favoritism towards its own browser and Web apps could rub some users the wrong way, especially those outside of the US. 'In China, users prefer Baidu, not Google,' Lee said. DeviceVM's Splashtop platform boots into Firefox within seconds and uses Yahoo or Baidu as default search engines instead of Google."

[Read more of this story](#) at Slashdot.

First Malicious iPhone Worm In the Wild

An anonymous reader writes "After the ikee worm that displayed a picture of Rick Astley on jailbroken iPhones, the first malicious iPhone worm (Google translation; original, in Dutch) has now been discovered in the wild. Internet provider XS4ALL in the Netherlands encountered several of such devices (link in Dutch) on the wireless networks of their customers and put out a warning. After obtaining a copy of the malware it was discovered that the jailbroken phones, which are exploited through openSSH with a default password, scan IP ranges of mobile internet providers for other vulnerable iPhones, phone home to a C&C botnet server, are able to update themselves with additional malware and have the ability to dump the SMS database as well. Owners of a jailbroken iPhone with a default root password are advised to flash to the latest Apple firmware in order to ensure no malware is present."

[Read more of this story](#) at Slashdot.

Berkeley Engineers Have Some Bad News About Air Cars

cheeks5965 writes "We've argued before over compressed air vehicles, a.k.a. air cars. Air cars are an enchanting idea, providing mobility with zero fuel consumption or environmental impacts. The NYTimes' Green Inc. blog reports that the reality is less rosy. New research from UC Berkeley and ICF International puts a period at the end of the discussion, showing that compressed air is a very poor fuel, storing less than 1% of the energy in gasoline; air cars won't get you far, with a range of just 29 miles in typical city driving; and despite appearing green the vehicles are worse for the environment, with twice the carbon footprint as gasoline vehicles, from producing the electricity used to compress the air. Given these barriers, manufacturer claims should definitely be taken with a grain of salt."

[Read more of this story](#) at Slashdot.

Has Sci-Fi Run Out of Steam?

Barence writes "Science fiction has long inspired real-world technology, but are the authors of sci-fi stories finally running out of steam? PC Pro has traced the history of sci-fi's influence on real-world technology, from Jules Verne to Snow Crash, but suggests that writers have run out of ideas when it comes to inspiring tomorrow's products. 'Since Snow Crash, no novel has had quite the same impact on the computing world, and you might argue that sci-fi and hi-tech are drifting further apart,' PC Pro claims. Author Charles Stross tells the magazine that he began writing a sci-fi novel in 2005 and 'made some predictions, thinking that in ten years they'd either be laughable or they'd have come true. The weird bit? Most of them came true already, by 2009.'"

[Read more of this story](#) at Slashdot.

NIMF To Close Its Doors

eldavojohn writes "One of the driving forces behind the ESRB toughening its ratings is closing its doors on December 31st, 2009. The National Institute on Media and the Family was funded by Fairview Health Services, and simply could no longer justify the yearly \$750,000 price tag given today's economic climate. NIMF's reign of nagging has been pretty consistent since 1996, and was often indirectly featured on Slashdot. Don't worry, president and founder Dr. David Walsh promises to keep writing and giving speeches ... and imploring us all to think of the children."

[Read more of this story](#) at Slashdot.

WHO Says Swine Flu May Have Peaked In the US

Hugh Pickens writes "The World Health Organization says that there were 'early signs of a peak' in swine flu activity in parts of the Northern Hemisphere, including the US. The American College Health Association, which surveys more than 250 colleges with more than three million students, said new flu cases had dropped 27 percent in the week ending on November 13th from the week before, the first drop since school resumed in the fall. Nonetheless, Dr. Anne Schuchat, the director of vaccination and respiratory disease at the CDC, chose her words carefully. 'We are in better shape today than we were a couple of weeks ago,' she says. 'I wish I knew if we had hit the peak. Even if a peak has occurred, half the people who are going to get sick haven't gotten sick yet.' Privately, federal health officials say they fear that if they concede the flu has peaked, Americans will become complacent and lose interest in getting vaccinated, increasing the chances of another wave. However, Dr. Lone Simonsen, a former CDC epidemiologist, says she expects a third wave in December or January, possibly beginning in the South again. Based on death rates in New York City and in Scandinavia, Simonsen argues that both 1918 and 1957 had mild spring waves followed by two stronger waves, one in fall and one in midwinter, adding that in the pandemic of 1889, the bulk of the deaths occurred in the third wave. 'If people think it's going away, they can think again.'"

[Read more of this story](#) at Slashdot.

Apple Voiding Smokers' Warranties?

Mr2001 writes "Consumerist reports that Apple is refusing to work on computers that have been used in smoking households. 'The Apple store called and informed me that due to the computer having been used in a house where there was smoking, [the warranty has been voided] and they refuse to work on the machine "due to health risks of second hand smoke,'" wrote one customer. Another said, 'When I asked for an explanation, she said [the owner of the iMac is] a smoker and it's contaminated with cigarette smoke, which they consider a bio-hazard! I checked my Applecare warranty and it says nothing about not honoring warranties if the owner is a smoker.' Apple claims that honoring the warranty would be an OSHA violation. (Remember when they claimed enabling 802.11n for free would be a Sarbanes-Oxley violation?)"

[Read more of this story](#) at Slashdot.

Pittsburgh To Tax Students

societyofrobots writes "Pittsburgh Mayor Luke Ravenstahl has proposed taxing college and professional students for the privilege of receiving an education in the city. The proposed tax will charge students in the city at a rate of 1% of their yearly tuition — which, at Carnegie Mellon, would mean roughly a \$400 tax (PDF) on most students. As the tax proposal hit local media outlets this week, the mayor repeatedly emphasized the burden that college students have placed on city services, and the need for students to pay their 'fair share.'"

[Read more of this story](#) at Slashdot.

Major Electronics Firms Support Ending Use of "Conflict Minerals"

tburton writes "The US House of Representatives yesterday released the Conflict Minerals Trade Act (HR 4128) to try and end the international trade of tungsten, tantalum and col-tan, the mining of which is accused of fueling violent rape and murder in eastern Congo. Since the very same minerals power the most popular consumer electronics from HP, Verizon, Nokia, RIM and Intel, the Information Technology Industry Council has quickly signed a statement of support. Advocacy groups are hopeful these commitments prove to be meaningful as consumers begin to question the end result of the supply chains powering their favorite gadget."

[Read more of this story](#) at Slashdot.

Bing Censoring All Simplified Chinese Language Queries

boggis writes "Nicholas Kristof, a New York Times journalist, is calling for a boycott of Microsoft's Bing. They have censored search requests at the request of the Chinese Government (like certain others). The difference is that Bing has censored all searches done anywhere in simplified Chinese characters (the characters used in mainland China). This means that a Chinese speaker searching for Tiananmen anywhere in the world now gets the impression that it is just a lovely place to visit."

[Read more of this story](#) at Slashdot.

Cyber Attacks On US Military Jump Sharply In 2009

angry tapir writes "Cyber attacks on the US Department of Defense — many of them coming from China — have jumped sharply in 2009, a US congressional committee has reported. Citing data provided by the US Strategic Command, the US-China Economic and Security Review Commission said that there were 43,785 malicious cyber incidents targeting Defense systems in the first half of the year. That's a big jump. In all of 2008, there were 54,640 such incidents. If cyber attacks maintain this pace, the yearly increase will be around 60 percent. The full report (PDF) is available online."

[Read more of this story](#) at Slashdot.

RFID Fingerprints To Fight Tag Cloning

Bourdain writes with news out of the University of Arkansas, where researchers are looking for ways to combat counterfeit RFID tags. Passive tags typically wait for a reader to transmit a signal of the appropriate strength and frequency before sending their own transmission. The scientists found that the amount of power required to trigger this varies quite a bit from one tag to the next, especially when many different frequencies are sampled. This and other physical characteristics give the tag its own "fingerprint" that is independent of the signal information stored in its memory, which the researchers say will facilitate the detection of cloned tags.

[Read more of this story](#) at Slashdot.

Wired Top Stories

Vanish! How Wired Readers Caught Our Fugitive Writer

In an age when everyone is following everything, is it ever possible to disappear? On Aug. 13, one man drove out of San Francisco determined to stay hidden in plain sight and test this possibility.

Shaggy to Bald: Evan's Daily Costume Change

While on the run, Evan Ratliff snapped a self-portrait each day to document his constantly evolving appearance.

Stories From the Hunt for Evan Ratliff

After Evan Ratliff was captured, Wired asked the most active hunters to send in their stories. Why were they drawn to the hunt, what did they do and what did they learn?

Wired Tests Writer With Series of Bold Challenges

With a week remaining in the hunt for Evan Ratliff, Wired decided to up the stakes with of five challenges hidden in *New York Times* crossword puzzles.

Delete Browser Cookies, Clean Up Your Trail of Crumbs

The web is watching you, and it's doing it using browser cookies — small snippets of tracking code. Do away with them to be free of watchers, and annoy the heck out of Big Brother too.

YouTube Blocks Non-Partner Device Syabas as Allegations Fly

YouTube has begun enforcing a 16-month-old change in its terms of service that requires device manufacturers to become "strategy partners" in order to display YouTube videos on televisions.

Prosecutors Drop Plans to Appeal Lori Drew Cyberbullying Case

Prosecutors have dropped any plans to appeal the Lori Drew cyberbullying case, thus ending the controversial and lengthy criminal case.

World's Largest Earthquake-Safe Building

A new 2-million-square-foot terminal at an Istanbul airport is the largest building in the world to sit on high-tech seismic isolators designed to help the building survive earthquakes intact.

MPAA Says Copyright-Treaty Critics Hate Hollywood

Dan Glickman, the chairman of the Motion Picture Association of America, is complaining to Congress that those who don't support a proposed international intellectual-property treaty are "hostile toward efforts to improve copyright enforcement worldwide."

Review: Angst-and-Fangs Formula Lacks Bite in 'New Moon'

Action takes a back seat to moping in this *Twilight* sequel, a throwaway teen flick that gives vampire movies a bad name. Aside from the brooding bloodsuckers, *New Moon* also delivers a lousy message to fangirls swooning over the supernatural love story.

A Retro Design and Thoughtful Shots for Artsy Photographers

Packaged in a brushed and polished metal casing, the Olympus E-P1 camera screams both brawn and retro chic. Overlook the lo-res LCD and instead appreciate this cam's top-notch stabilization abilities and tidy images.

Why Google Should Cool It With Chrome OS

Google has some ambitious goals with its open source PC operating system Chrome OS. But we're not convinced consumers will be thrilled with the way the browser-based OS is being presented, so we make a modest proposal.

Make an Independent Movie on the Cheap

Anyone with a camera phone and poor impulse control can be a YouTube star for 15 seconds. But what does it take to make a feature film that will get noticed by Hollywood?

Listen to 'World's First Twitter Album'

Digital music students create a crowdsourced album within the 140-character confines of Twitter by writing short strings of code that can be translated into songs.

Malaria Gaining Resistance to Best Available Treatment

Malaria has begun showing troubling signs of developing resistance to artemisinin, which is currently the best available treatment for the disease.

VW Builds the World's Coolest SUV

You need a tough truck to take on Dakar. VW delivers.

Hacked E-Mails Fuel Global Warming Debate

A trove of e-mails stolen from a leading climate-research group in Britain has sparked an online debate over global warming data. Bloggers claim the e-mails reveal that scientists colluded and manipulated data to support global warming theories.

Sushi DNA Tests Reveal Fraud

Using DNA barcoding, scientists tested tuna at 31 sushi restaurants and discovered many of the restaurants were selling endangered species, or fish that wasn't tuna at all.

***Wired* Backs Internet for Nobel Peace Prize**

Nothing has done a better job of circumventing censorship, spreading democratic thought and promoting understanding between nations than the internet. Join *Wired*'s global campaign to award the 2010 Nobel Peace Prize to our beloved series of tubes.

IR Image Shows Ghostly Bones of Galactic Feast

Using new processing techniques in the near-infrared part of the spectrum, astronomers have peered through the thick dust of the Centaurus A galaxy to reveal the leftovers of another galaxy it consumed.

10 Geeky Things to Be Thankful For

While you are giving thanks for the important things in your life next Thursday, mull these 10 geeky things for which we all have reason to be grateful.

Military Video System Is Like YouTube With Artillery

Making footage shareable and searchable online has sparked a revolution in the cute animal, stupid human and delicious tamale communities. New software just might mean a similar upgrade for military video intelligence: Think of it as a real-time YouTube with heavy artillery.

Nov. 20: 1984: SETI Seekers Find a Home

The founding of the SETI Institute helps solidify the search for intelligent life in the universe.

How LED Tattoos Could Change Face of Humanity

In Ray Bradbury's book, *The Illustrated Man*, the title character is covered with moving, shifting tattoos. If you look at them, they will tell you a story. New LED tattoos from the University of Pennsylvania could make the Illustrated Man real (minus the creepy stories, of course).

When Good Rockets Go Bad

Watch video of six of the most spectacular and costly rocket explosions in history.

Microsoft Still Chasing the Competition With IE9

Microsoft is touting advances due in the next version of its Internet Explorer browser, answering the challenge of Firefox and Chrome. Sadly, IE9 doesn't look very competitive.

Flip Mino Wannabe Is a Catastrophe

Is imitation the sincerest form of flattery? Not when that imitation takes horrific video with terrible sound. Meet the Memorex Mini camcorder, a pale and warped copy of the Flip Mino.

Hi-Def DSLRs May Be Cheap, But Talent Is Priceless

Whatever happened to that indie film revolution the new generation of DSLRs was supposed to start? Turns out even cheap filmmaking isn't as easy as it looks.

Feds Charge 3 With Comcast.net Hijacking

Three alleged members of the hacker gang Kryogeniks were hit with a federal conspiracy charge Thursday for a 2008 stunt that replaced Comcast's homepage with a shout-out to other hackers. As one of the culprits said last year, "This is going to be really bad."

Dung Fungus Prompts Rethinking of Mammoth Extinction

Scientists studied a fungus that lived in the dung of mammoths and other large mammals to try to determine what caused them to go extinct 13,000 years ago.



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