Another week of being a Human in IT Infrastructure. Are you still alive to talk about it?

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*IN THIS WEEK'S ISSUE: Vendor Tech Support Is Broken, Why Internet Governance Matters, Confrontation Can Build Bridges, and Is Your Fetus Falling Behind? Make sure you enable the images; the magazine looks a whole lot better that way!*


**Table of Contents**
**(aka The Project Plan)**




**Issue Number 22**

**01/12/2016**


Predictions for 2016? Most of you will spend a large part of 2016 looking at your smartphones and computers.

## Thought For The Week:

**Carpentry:** Measure twice, cut once.

**Technology:** Think twice, speak once.

# 1. Vendor Techincal Support Is Broken

## By Greg Ferro

Imagine buying a brand new car for $100,000. Now, imagine the maintenance cost for that car is $20,000 per year.

And the **only** way you can be sure your car will work reliably is to have the service package--otherwise the dealer offers zero guarantees that the car will operate.

You can upgrade the package to $35,000 to get replacement parts and updates, but you still have to pay for labor to fit those parts.

That's a rough analogy of vendor technical support in enterprise IT. We pay a fixed annual rate of 20-40% of the purchase price to get some guarantee that an expensive product will actually work for a few years.

Is this reasonable?

## Who Really Benefits From Tech Support?

Tech support is cheap marketing for vendors. If a customer feels like he or she is being cared for by a tech support contract, that person is likely to become a repeat customer. But is tech support actually a customer benefit?

1. Tech Support is a primary method for vendors to shift bug-finding to customers. It reduces the vendors' testing costs and transfers the risk of bad software development to the customer. Remember, less testing = more profit.
2. Giving customers the chance to report bugs makes customers feel like they are being cared for.
3. The reality is that bugs takes months or years to repair.
4. Many customers don't have the knowledge or expertise to design or operate their network, so Tech Support becomes a replacement (up to a point) for resellers or consultants.
5. Hardware support has value. Holding stock in a global network of distribution centers has a genuine dollar value attached to it. In 2016, it's cheap to manufacture the parts, expensive to distribute them.

If you follow the logic here, Tech Support should be free because it ensures that customers are happy with their products and will return to buy more in the future.

> *Keep in mind that IT vendors average more than 60% gross margin on the products that they sell, while the cost of manufacturing the hardware and developing the software is getting cheaper. Service revenue isn't critical to survival, but it sure is profitable.*

## Product Bugs

Vendors tell us that bugs are a fact of life. They tell us software is so complicated and processes so vast that its is impossible to test completely, so that customer networks are the only true test for their products.

Apparently, manufacturing computer hardware is some mystical process that, in spite of spending tens of millions of dollars and years in development, it is unreasonable to expect any hardware product to be stable.

For both software and hardware, vendors insist it is mandatory that customers have paid contracts to rectify the defects that vendors have created.

## Are There Any Solutions?

So what are some possible solutions here?

1. Pay bug bounties to customers who discover and reports bugs
2. Unbundle support contracts into separate elements
3. Customers should expect technology products to work

## Bug Bounties In The Enterprise Network

Imagine that when you locate a bug, you/your employer would be paid a bounty. This bounty would be in recognition of the time and resources you spent finding, diagnosing, reporting and communicating to the vendor about defects in their products.

I would use the model that has been developed in IT Security for notification and payment of bounties, where vendors accept reports, classify their severity against baseline conditions, and pay a bounty accordingly.

This concept of paying a bounty would have a positive impact on vendor development cycles.

# Interesting Aside of Customer Feedback

Today, any bug reports or feedback you give to a vendor become the vendor's property, and are often never published for customers to see. In fact, any feedback you provide to a vendor becomes its property as per the legal agreement. To whit, an extract from Cisco's legal agreement:

> d. Customer grants to Cisco a perpetual, irrevocable, royalty free, worldwide right and license to all Intellectual Property in the Customer Feedback (as defined below) to use and incorporate into any or all Services, Products, Deliverables, Data Collection Tools, Reports, Scripts and Cisco Pre- Existing Technology, and to use, make, have made, offer to sell, sell, copy, distribute, and create derivative works of such Intellectual Property for any and all purposes whatsoever, and Customer acknowledges that it will have no rights in or to any Services, Products, Deliverables, Data Collection Tools, Reports, Scripts or Cisco Pre- Existing Technology as a result of Cisco's use of any such Intellectual Property - LINK

The problem with bug reporting is asymmetric pain. I feel all the pain, and the vendor gets a free bug service: detection, collection, fix implementation and then validation that the fix actually works.

# Contract Unbundling

Today's service contracts burden customers with unwanted features and functions. I shouldn't need a support contract to ask questions about software licensing (right?!).

Support contracts for operation or configuration are a problem too, because they partially incentivise vendors to produce hard-to-use products.

And bad product design can be safely ignored during product development because "tech support".

Customers should be able to buy only what they need. We shouldn't have a socialist-style 'one size fits all' service contract any more. That was the way we did things in the 1980s.

# It Should Work

It's 2016. Vendors have had decades to get basic functionality correct. Is it reasonable for vendors to sell products with zero guarantees that they will function?

The exclusion of legal liability in sale agreements is a form of moral hazard. That is, vendors are free to make unreliable products because there is no legal recourse for customers.

Customers must demand that vendors accept responsibility for their products. As a model, we should at least have the same rights as car owners who are protected from lemons.

## Closing Thoughts

**I don't expect anything to change.** There is some truth in the following statement: *Technology makers have convinced consumers that faulty, buggy, and unreliable products are normal.*

**Companies can prevent bugs**. Look at Apple and think how few major issues its products have had over the last five years.

**Vendors are driven by dollars.** Until customers make demands on vendors that products should have zero bugs, nothing is going to change because it's more profitable to ship bugs and let customers pay to find them.

**Service contracts are a primary source of profits.** Vendors have told shareholders that they will increase services by as much as 10% every year. Vendors want to sell more of them.

**The incentives are all wrong.** Enterprise IT vendors reap the most reward from producing poor-quality products that have bugs, are hard to use, and shift work to customers.

What do you think?

# 2. Internet Governance Is Worth Your Attention

## by Russ White

Have you ever wondered about Internet governance? Have you ever asked yourself why you should care? After all, who really wants to think about global

forums, international law, and multi-stakeholder mechanisms? Actually, you should.

First, because governance has a direct impact on privacy, and privacy is important for you as a person. You have family and friends who care about their privacy (whether or not they think they do). The better informed you are on these issues, the more effective you'll be as an advocate and explainer.

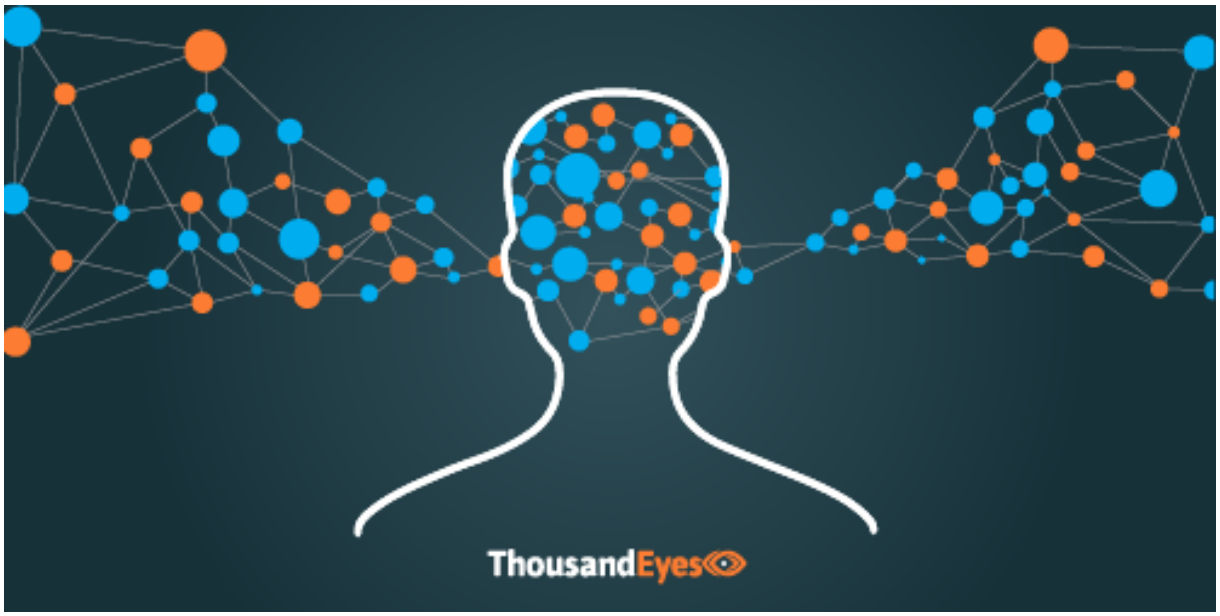
Beyond this, you have customers, people you run a network for, and you should care about how to handle their information in a way that keeps their privacy intact.

Second, the output of these governance organizations will affect you in the form of regulations and technology changes, so you might as well get a handle on Internet governance issues before they get a handle on you.

Where to start? A good place is with the Internet Society policy briefs. You could also look through the web page of the Center for Democracy and Technology, which has sections for individual issues as well as a regular blog.

Just remember: you might not be interested in Internet governance, but it's certainly interested in you.

# Sponsor: ThousandEyes




## Get A Clear Understanding of Chaotic Networks

Managing networks isn't new. You've been trying to keep complex networks under control for a long time. The fact is, networks are far more mission critical, far more hidden and far more vulnerable than ever before. They're also far more complicated. ThousandEyes arms network engineers, operations teams, support/service desk staff and developers with an accurate, up-to-the-moment understanding of what's happening in the network – both inside and outside the organization.

How do we do it? Smart agents deployed across the Internet, and those you deploy within your organization, deliver unique data about your network—and with it comes complete understanding of network topology, dependencies and behavior.

Now you can quickly and precisely pinpoint the root cause of problems, from DDoS attacks and DNS hijacks to intermittent ISP hiccups. In addition to highlighting troublesome links and interfaces, get a precise understanding of MPLS links, Path MTU failures and DSCP re-markings.

With ThousandEyes, you'll be able to find all sorts of network snafus:

- Device faults and congestion (see Tata's undersea cable cut)
- Routing and ISP failures (such as this route leak that took down AWS)
- Service provider screw ups (like this month's UltraDNS outage)

And do it all with speed and accuracy. Once you discover the issue, you're armed to share your data and insights with vendors and customers to resolve problems faster. With everybody on the same page, there's less finger pointing and more fist bumping.

With ThousandEyes, you'll respond to issues before they impact customers, services and revenue—and ensure your business runs smoothly. Improve performance and availability of your business-critical applications and network infrastructure. See how ThousandEyes can make your life easier. Monitor from three offices or data centers for free with ThousandEyes Lite.

# 3. Building Bridges With Confrontation

## by Ethan Banks

There's a need for gentle confrontation when it comes to dealing with provisioning requests that don't have any context.

Too often, engineering teams work in the dark, knowing little about the projects for which they build infrastructure. Team leaders or managers likely possess the big picture, and they send requests down to the minions.

Oftentimes, projects managed this way are only partially successful -- the basic ideas might be right, but the infrastructure configurations are not optimized for the application being deployed, which can degrade performance or availability.

The key to an optimal deployment may be a little bit of confrontation.

Confrontation is not comfortable, especially for introverts. But building infrastructure to support a business is a serious matter. Therefore, why not speak up, educate, and then collaborate, with the goal of overall project

improvement in mind?

When you confront, confront gently. Chat politely with the person who made the request, the project leader, your IT manager, and anyone else willing to share context with you. Be clear that you are trying to achieve the best possible result and not obstruct or procrastinate. Try to find some common ground early in the conversation, too.

For example:

“Hey, Susan. You put in this request for a new VLAN and an IP block. We can definitely do that, but I was thinking that if this is for Project Eagle, there might be some better alternatives. Got a few minutes so that I can bounce some ideas off of you?”

Educate. Chatting with an IT manager, project lead, or peer in another silo is an opportunity to share options. You’re not there to lord your superior knowledge, demean, or ridicule -- not even subtly. You are there to present possible alternatives, along with pros and cons, to help make an informed decision.

“Well, yes. Last year we absolutely would have built the virtual IP on the Killer Monkey ADC cluster as you requested, but since then we’ve standardized on a new virtual ADC design with more compute power and stronger security. Project Eagle is a great opportunity to leverage the new design. Are there any objections to doing that instead?”

Collaborate. Confrontation and education are tools that build a bridge to collaboration. What any organization really wants is for their IT silos to work together when building business applications.

“Susan, is it okay if we bring Patel in to chat? He asked me to do some Project Eagle-related network provisioning for the Magnetic Mountain storage array. But...I have a feeling if the three of us talk this through with a whiteboard, we can tweak the design for lower latency and better resilience in case of a network failure.”

When handled properly, confrontation can lead to better peer relationships as well as better designs to support. Better designs should lead to better production environments, and that's good for your employer.

You'll also discover that the better you are at contributing thoughtful, non-competitive input to the conversation, the more likely it is that you'll be included up front the next time a big project comes around.

# Sponsor: Sonus Networks

Sonus Networks wants you to know that there is a better way to address business continuity with less cost, more flexibility, and increased management efficiency – a Software-Defined WAN (SD-WAN) powered by Sonus' VellOS. Ensure you know the differences between SD-WAN business connectivity and SD-WAN business continuity; visit Sonus online or reach them at 1-855-GO-SONUS and tell them you heard about them on PacketPushers.


# 4. Is Your Fetus Falling Behind?

# by Drew Conry-Murray

Everybody's looking for an edge: some exercise, supplement, or software to help us boost our productivity and enhance our performance so we can get ahead at work or school.

And there's no shortage of companies willing to take our money in exchange for dubious high-tech elixirs.

Consider Lumos Labs, creator of the Lumosity "brain training" program. Last week it agreed to pay $2 million to the Federal Trade Commission for deceptive advertising.

The FTC alleged that the company misled customers with "unfounded claims that Lumosity games can help users perform better at work and in school, and reduce or delay cognitive impairment..."

According to the FTC, "Lumosity simply did not have the science to back up its ads."

Then there's the Babypod—a music device designed to be inserted into the vagina of a pregnant woman to play music for the fetus.

The Babypod Website touts the benefits of music on the mind, including "acting as a stimulus for learning" and "positive effects on brain development."

The makers of Babypod cite research from the Institut Marques, a gynecology and obstetrics clinic in Barcelona, to back up its claims.

Whether or not Babypod can prove any benefit from its device, both it and Lumosity are two of many companies that prey on the anxieties of our modern, performance-driven age.

These anxieties tell us that if we aren't maximizing our efficiency, boosting our productivity, and constantly stimulating our brains, we—or our children—will be bulldozed by the relentless forces of competition.

IT certainly isn't immune to these pressures. Some days it seems like if you aren't a full-stack engineer who can DevOps the crap out of an OpenStack distro in GitHub, you might as well curl up and die.

A little anxiety can be a good thing. It can spur us to greater effort, or provide incentive to get creative.

But if we've reached the point where parents feel compelled to maximize fetal vocalization in the womb with an inter-vaginal iPod, perhaps we've gone too far.

# Internets Of Interest

**A collection of pre-loved links that might interest you. "Pre-loved" because we liked them enough to put into this newsletter. It's not *true* love.**

## DNS over TLS: Initiation and Performance Considerations

I think this is an IETF RFC to follow. Currently, DNS requests leak substantial metadata information for a persistent attacker. Today, service providers/carriers collect and analyze DNS and HTTP data that crosses their backbones and sells it in a $24 billion market. I'm pretty sure that most companies want to prevent their Internet metadata being sold.

From the **RFC:**

*"This document describes the use of TLS to provide privacy for DNS. Encryption provided by TLS eliminates opportunities for eavesdropping and on-path tampering with DNS queries in the network, such as discussed in RFC 7258. In addition, this document specifies two usage profiles for DNS-over-TLS and provides advice on performance considerations to minimize overhead from using TCP and TLS with DNS."*

LINK

## Dutch Government Says No To Crypto Backdoors

This article shows that not all governments are like  US or UK. The Dutch government donated ~$540K to OpenSSL to put their money where their mouths are.

From **The Register**:

*"Although the Dutch position is nuanced and firm, the government also has the luxury of not having real impact on the real world. As the paper notes, "the Dutch situation cannot be seen in isolation from the international context. Strong encryption software is increasingly available worldwide or already integrated into products or services."*

LINK

## Running An Email Server At US$4 Per User Per Month?

If you haven't heard about Amazon Workmail, here are the key factoids:

- Costs $4 per user per month, which includes 50GB of storage per user
- Works with Outlook clients
- Has Active Directory integration with existing credentials
- If you are migrating from an on-premises Microsoft Exchange server, your users' mobile devices can automatically connect to WorkMail with no end-user reconfiguration required, and no change in user experience
- A feature-rich web client is available for users to access their email, calendar, and contacts

In my experience, 50GB email STORAGE alone costs more than US4$ per

month, not to mention ppam filtering, malware scanning and Microsoft licensing.

The days of running your email server will be a privilege that very few people enjoy in the future.

LINK

## Support For Older Versions Of Internet Explorer Ends On January 12, 2016

Network Management vendors can no longer use the excuse that they have to support older browsers instead of updating their apps. Also, vendor websites that use Java will be in trouble as the modern browsers are removing support for plugins because of the weak security for sandboxing (this also includes the security risk that is Adobe  Flash).

From **Microsoft:**

*"Beginning January 12, 2016, only the most current version of Internet Explorer available for a supported operating system will receive technical supports and security updates. Internet Explorer 11 is the last version of Internet Explorer, and will continue to receive security updates, compatibility fixes, and technical support on Windows 7, Windows 8.1, and Windows 10.*"

My view is that the productivity benefits of new web browsers are enormous. They are faster and render modern content correctly.

LINK

## Has Dell Computers Been Hacked?

This blog is from a person who received a call from a scammer who, the blogger discovered, had actual Dell data about his hardware, etc.

From **10ZenMonkeys:**

*"Scammers pretending to be from Dell computers phoned me in November — but these scammers knew things about me. They identified the model number for both my Dell computers, and knew every problem that I'd ever called Dell about. None of this information was ever posted online, so it's not available anywhere except Dell's own customer service records. (Even my e-mail account is secured with "two-step verification"...)"*

This could be a real problem in big companies if scammers get hold of your employee information.

LINK

## Automate adding nodes to Solarwinds with Puppet

From **Nathan Powell:**

*"Since Solarwinds has an API, it made sense to use a Puppet Custom Function to reach out to Solarwinds and ask if the node was present. If it wasn't, go ahead and add it. This would also lay the groundwork for expanding on that capability such as a reconciliation of partitions to add new ones automatically without intervention from the Operations folks."*

LINK

## The Transatlantic Data War

The premise of this article seems to be that the EU government is moving to block data from residing in the United States because US companies and the US government are demanding asymmetric privileges to access data but refusing to give reciprocal privileges:

From **Foreign Affairs:**

*"But the main reason that U.S. companies and officials are flustered is that they*

*are used to being the ones who make the rules. Over the past 70 years, the United States has built a global system in which information, investment, and trade move quickly and easily across borders. That openness has created an interdependent world in which the national rules and preferences of one country can shape the rules and preferences of others. The outsized power of the U.S. economy usually gives that role to the United States.*"

The conclusion highlights that the current stance of unilateral obligation in the United States' favor will cause problem for US companies:

*"The United States faces a profound choice. It can continue to work in a world of blurred lines and unilateral demands, making no concessions on surveillance and denouncing privacy rights as protectionism in disguise. Yet if it does so, it is U.S. companies that will suffer.*"

**WHY THIS MATTERS:** Carrier backbones and CDNs are built to certain design assumptions. Today, data gravity means that there are a few massive locations where networks must connect, aka "tree networks". This suits the current point-to-point/circuit model of TCP/IP.

If data localization becomes politically mandatory then the network becomes much more geographically distributed. We will be building mesh networks across the world. This is much more suited to **Named Data Networking.**

It's the little things that count.

LINK

## Really No Child Left Behind

Japanese culture values education so highly that institutions will keep a train running for a high schooler that lives in a remote location until she finishes this year.

From **The Atlantic CityLab:**

*"At that time, ridership at the Kami-Shirataki station had dramatically fallen because of its remote location, and freight service had ended there as well.*

*Japan Railways was getting ready to shut the station down for good—until they noticed that it was still being used every day by the high-schooler. So they decided to keep the station open for her until she graduates. The company's even adjusted the train's timetable according to the girl's schedule. The unnamed girl is expected to graduate this March, which is when the station will finally be closed."*

LINK

PACKET PUSHERS
Priority Queue
Where Too Much Networking Would **NEVER** Be Enough

[This channel](#) has our nerdiest shows on data networking technologies and products.

The Network Break

PACKET PUSHERS
Where Too Much Networking Would **NEVER** Be Enough

[Network Break is a weekly podcast](#) that delivers news & analysis on the networking industry in a fun, fast-paced style.

# Sponsor: Interop

Join the Packet Pushers at [Interop Las Vegas](#) for the Future of Networking Summit, May 2nd and 3rd. It's a deep dive into the technologies and trends that will affect the next five to ten years of networking.

We'll talk about the changing state of network operations, advances in network hardware and silicon, open networking, SD-WAN, containers and more. You can join us for live podcast recordings and an after-hours hangout too.

And don't forget that Interop offers 5 full days of independent technical content, via workshops and sessions, on networking, SDN, storage, security, virtualization, IT leadership, and more.

Use the code **PPUSHERS** in the "Marketing Code" field when you register and get 25% off 5-Day, 3-Day, and 2-Day conference passes.

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# Research Papers

**Research and technology papers that provide deep insight or expertise.**

## Cisco - The Digital Manufacturer - Resolving the Service Dilemma

Cisco is attempting to grow into manufacturing markets and this whitepaper discusses the need to measure everything in factories, buildings, and plants. It outlines that new revenue for services is possible if you enable sensors, monitors, and software and sell them as services to the customer.

Cisco calls this "digital transformation" and quotes lots of analysts and provides numbers. It's well worth reading if you keep your marketing goggles firmly in place.

From **Cisco:**

*"As a result, more and more companies are being challenged to move from*

*once-successful product-centric strategies to approaches that are more service-oriented.1 When successful, the results include significant, new revenue streams; increased customer engagement and delight (not just satisfaction); greater efficiency and cost savings; and value-added offerings. Companies that successfully leverage services are using them to drive disruptive new business models that, in effect, enable them to charge for business outcomes—for performance rather than physical assets."*

LINK - (Direct Link to PDF download)

## Send Us Product News And Announcements

We are finding it difficult to track down announcements of the latest products with vendors, especially the really big vendors, because each Business Unit announces products differently.

If you see a product announcement or get a reseller update, could you forward those to humaninfrastructure@packetpushers.net so that we can share them with everyone? Or you could drop by our Slack group to tell us there. Email us if you'd like to join the Slack group; everyone's welcome.

# Product News

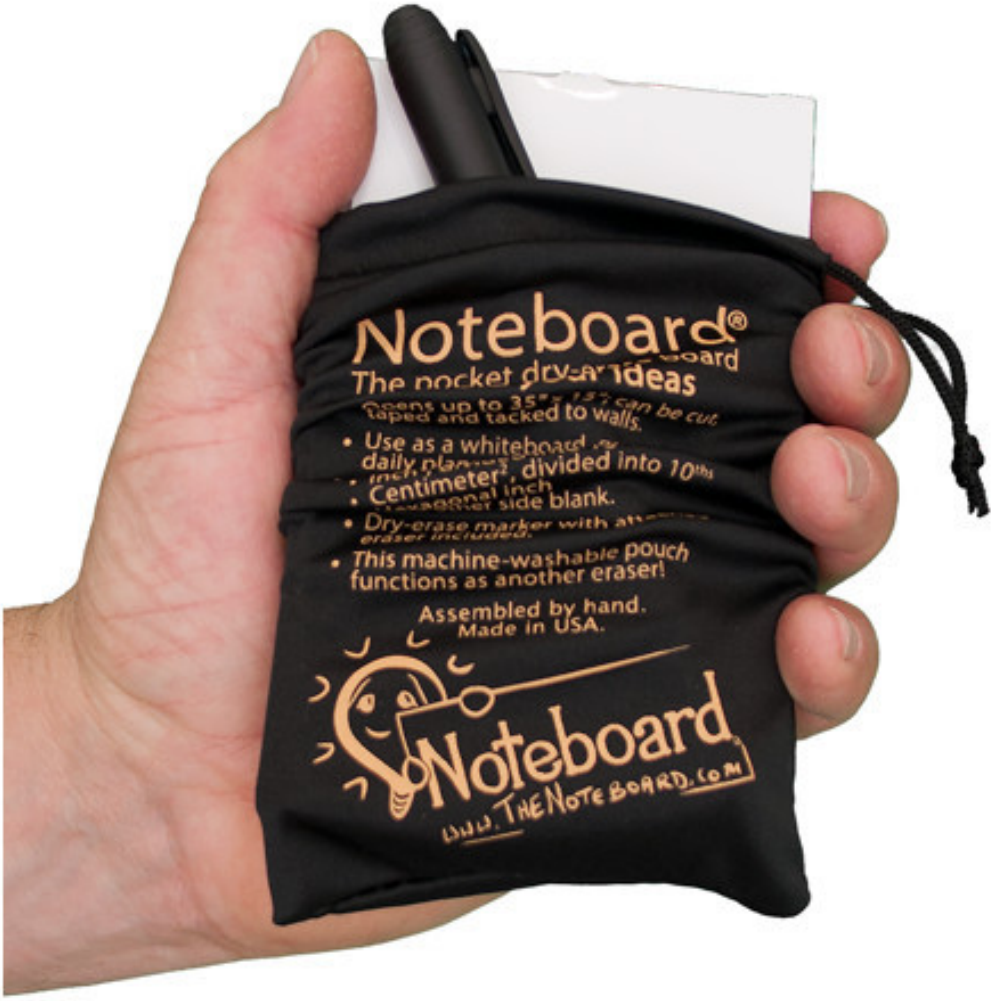
**We don't often get new products worth talking about, so that makes it nice to have something to say.**

## Portable Whiteboard

Network people love whiteboards so a portable, fold-up whiteboard sounds pretty good, right? I don't use whiteboards much these days, but when I was a consulting network architect working at multiple customers I know I would have bought one of these.

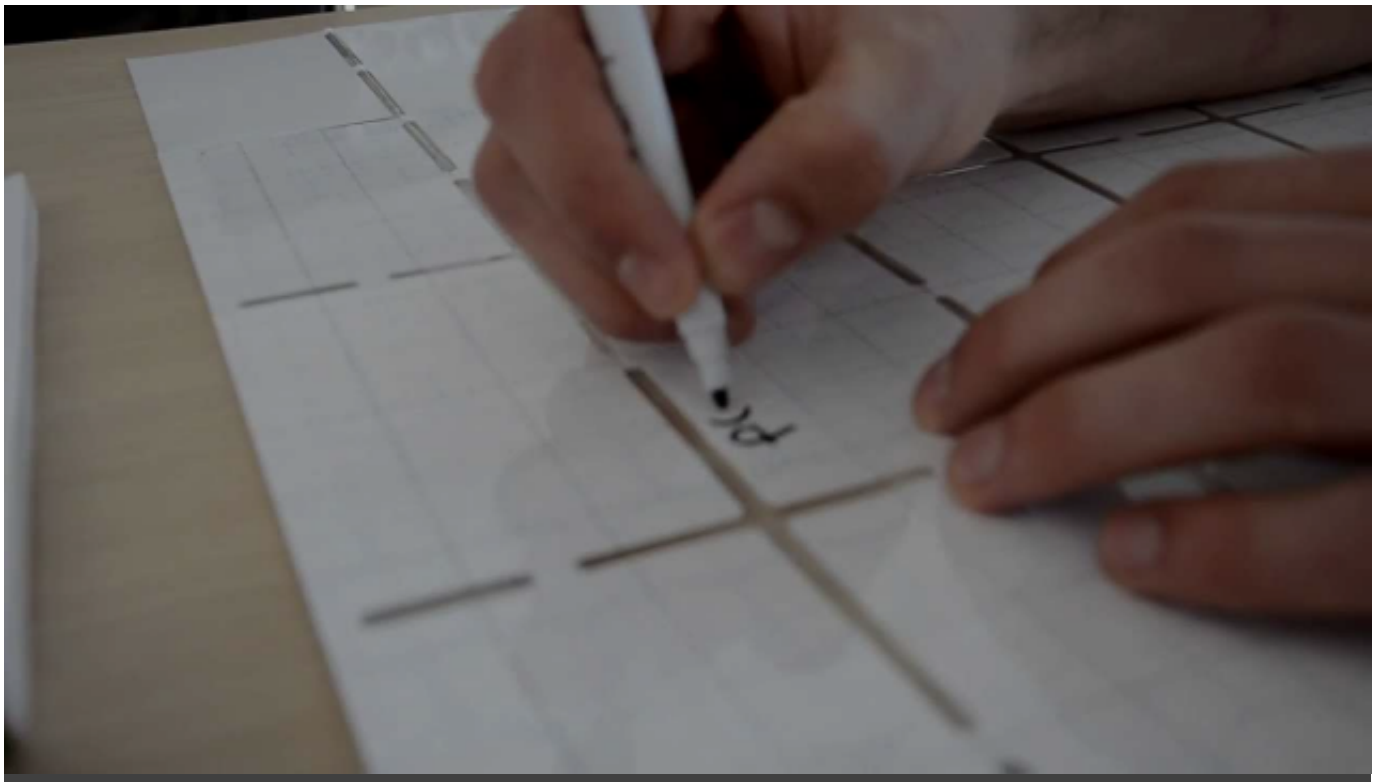
- It's durable, portable, and infinitely rewritable

- Folds up map-style from 35" x 15" to 5" x 3"
- It's made up of index card-sized rectangles in a 7 x 5 calendar grid




Cost is USD$10 each plus shipping.

LINK



2 min video about the portable whiteboard.

# Recent Articles

**The last five articles published on EtherealMind**

## EtherealMind.com Latest

Logical Razors Can Take on Corporate Babble - Link
Canned Response to BGP Networking Questions – Reddit - Link
IETF RFC 8374 BGPsec Design Choices and Summary of Supporting Discussions - Link
Net Neutrality Hasn't Ended, We Don't Know When - Link
Next Market Transition ? Cheaper Buying, Less Selling - Link

# Watch This!

Where we collect some videos that make us reflect, think about our inner lives, or just entertain us.

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Lets buy 10,000 sparklers and then burn them in a field.

Also, cats.

Can't get enough newsletters? Check out Link Propagation, our newest publication. We send you a free weekly digest with tech news, interesting blogs, and industry announcements, all curated by the Packet Pushers. It's an easy way to keep up and stay informed. Subscribe at packetpushers.net/link-propagation.

# Did We Miss Something?

Got an link or an article to share? Email it to humaninfrastructure@packetpushers.net

## The End Bit



**Human Infrastructure is bi-weekly newsletter with view, perspectives, and opinions. It is edited and published by Greg Ferro and Drew Conry-Murray from PacketPushers.net. If you'd like to contribute, email Drew at drew.conrymurray@packetpushers.net.**

*We don't give away your email address or personal details because that would suck.*