

IN THIS WEEK'S ISSUE: Beware Emotional Attachments To Old Tech; What A Changing Cisco Means To You; A Disingenuous AI Partnership. Please remember to enable the images; the magazine looks a lot better that way!



PACKETPUSHERS

Human Infrastructure Magazine

A Newsletter About a Life in Networking

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The "Changes" issue.

Thought For The Week:
Turn and face the strange - David Bowie

1. Beware Emotional Attachments To Old Tech

by Keith Townsend

Coming out of AWS Re:invent and HPE Discover I have a familiar feeling in my stomach: Big changes are coming, and I have to be prepared to let go of technologies and skill sets I've grown attached to.

I had the same feeling in 2000 and 2001. I started my IT career as a Novell NetWare administrator, and as I gained competency, I also gained a sense of pride for the technology and my work. The job lifted my family into the middle class. I felt loyal to NetWare.

However, the market signs were clear: Windows 2000 Server and Active Directory were going to sweep aside the technology I spent the past few years mastering. And even though I knew logically that it was time to move on, I was taken aback at how emotionally attached I'd grown to a product.

Here We Go Again

The current shift in technology is similar.

Greg Ferro likes to tell us that enterprise technology, especially data networking, hasn't changed in 15 years. Enterprises take the same physical approach to networking. We wait on our favorite vendor to provide a roadmap to the products that meet our business requirements.

But today's shift isn't being driven by one enterprise vendor overcoming another. It's that business users are getting smarter about

technology.

The height of the bookkeeper profession was the 1970's. The process of tabulating financial models was extremely manual. If a small business wanted to perform a what-if calculation, it might take days or weeks for a bookkeeper to create a manual spreadsheet showing the answer to the business question.

Then PCs and bookkeeping software supplanted the bookkeeper. Bookkeepers had to move up the stack and grow the trade of accounting or be out of a job.

Today, businesses are bypassing their IT departments and moving to public cloud providers. Giants like Amazon and Facebook are driving innovations that will create new infrastructure options for everyone else. Automation is pushing up hard against hand-curated operations.

Like my situation in 2001, it's time to realize the shift is occurring. Enterprise IT is changing, and we can't write it off or ignore it because of emotional attachments to the products, processes, and skill that have made us successful for the past 15 years.

IT people are smart and capable, and should be able to see what's coming. But don't discount the power of the emotional attachment to obscure your clarity.



Maybe if I just stay under here, it will all go away.

2. What A Changing Cisco Means For You

by Greg Ferro

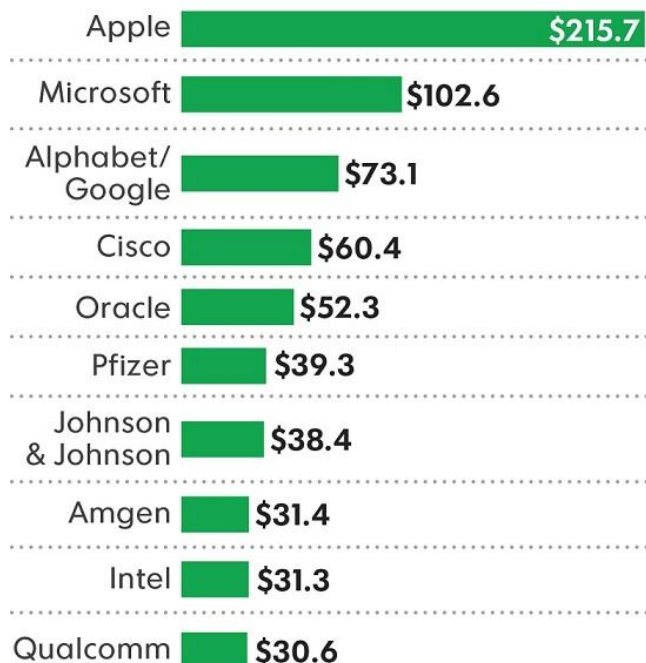
Cisco's switch and router businesses are shrinking. What might this mean for you?

Big, Dancing Elephant

Let's get this out of the way early.

COMPANIES WITH THE MOST CASH

The top 10 companies by cash and cash equivalents held¹ (in billions):



¹ — as of end of 2015

SOURCE Moody's Investor Service
George Petras, USA TODAY



Cisco Systems, as a company, is in fine health with \$70B in the bank, steady profits, and slow growth. The share price has been fairly flat for a decade, but it pays a nice dividend to its shareholders and huge bonuses to its executives. Overall, the money market analysts are pretty happy with the company.

Cisco, along with other technology companies, also has a monster pile of cash stored off shore.

Cisco has a number of opportunities to grow its business, including IOT, Security, Servers, and Hybrid Cloud. But mostly, Cisco is defending its existing customers and working to refresh the installed base and protect its business. Cisco is a big, happy dancing elephant that can crush competitors.

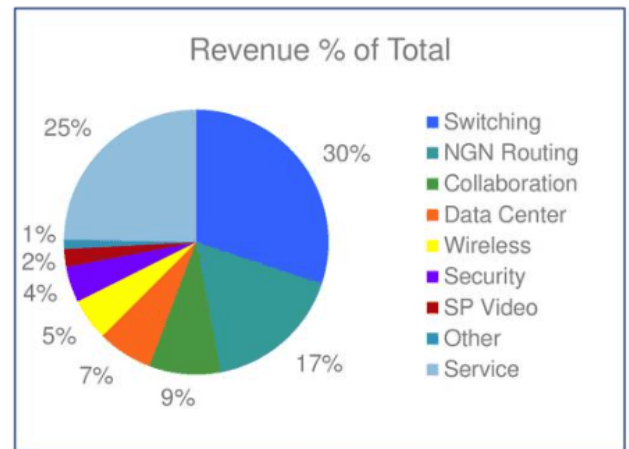
Legacy Networking

If you're a customer, the story is somewhat different. Cisco built its current business on switching and routing, which has been shrinking gradually for a couple of years now. In both service provider and enterprise markets, revenues are slowly decreasing as the impact of a maturing market takes hold.

Mainframe-style network hardware with nuts-to-guts integration doesn't fit the new market. Disaggregation allows competitors to enter the market and stop an incumbent's growth. If you are a dominant supplier, then competitors start eating into your revenue and profits. Here is Cisco's results for the last quarter showing the decrease:

Q1 FY 2017 – Revenue Highlights

	\$M	Y/Y % Change*
Switching	\$3,716	(7%)
NGN Routing	2,089	6%
Collaboration	1,081	(3%)
Data Center	834	(3%)
Wireless	632	(2%)
Security	540	11%
Service Provider Video	271	(2%)
Other Products	139	88%
Service	3,050	7%
Total Cisco	\$12,352	1%



Percentages may not sum to 100% due to rounding

* Year-over-year change normalized to exclude the SP Video CPE Business for Q1 FY 2016, which was divested during Q2 FY 2016 on November 20, 2015. SP Video CPE Business revenue was \$411M for Q1 FY 2016.



Certain reclassifications have been made to the amounts for prior periods in order to conform to the current period's presentation. Historical revenue by product category and service is available on our website at <http://investor.cisco.com> under "Financial Info" in the "Investor Relations" section.

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The future of private cloud will be determined by rapid change in 'applications'. The last 30 years of widespread use of OSPF, STP, and SNMP applications is over. The first generation of new applications is led by Ansible, NETCONF, gRPC and many others. The second generation, sometimes called NFV, uses virtual appliances running on x86 servers. It is well advanced and further undermines the single-vendor strategy.

These are some of the reasons that revenue in core routing & switching is shrinking, and why Cisco is working hard to defend its installed base against startups and new competitors such as Huawei and ZTE.

Reduce Costs in a Shrinking Market

What do companies do to stay profitable in a shrinking market?

1. Reduce sales costs by reducing field staff or forming sales partnerships (*resellers, vendor integrations, product cooperation*)
2. Reduce the cost of making products (*merchant silicon, open source software*)
3. Reduce or rationalize diversity of products
4. Increase price, increase marketing efforts to grow market share (*no market share to gain, pricing already premium*)

These options are standard business practice. It's not rocket science. The only item that I feel Cisco hasn't yet tried is Rationalization.

So What?

If you follow my logic then Cisco may start to reduce the number of products it sells. This will:

1. Cut R&D, support, stock, service, and maintenance costs
2. Reduce head count
3. Focus sales team on successful remaining products
4. Reduce burden on executive team to focus on new markets

If you are considering a purchase of Cisco Enterprise products, and expecting to own them for more than three years, take time to consider the products' longevity. Some questions:

1. Is the product old and based on legacy technology?
2. Is the product successful in the market?
3. Is the product hard to support?

Not easy questions to answer, but that's what you are there for.



3. New AI Consortium Sounds Comically Disingenuous

by Drew Conry-Murray

A few months ago, a handful of corporations with a vested interest in gathering and analyzing as much personal information as possible founded an industry consortium with the laughably insincere name “[Partnership on Artificial Intelligence to Benefit People and Society](#).”

Consumers and citizens should start to pay attention when an industry consortium feels compelled to tell them that something is harmless and good.

The founding members of the partnership are Facebook, Google, Microsoft, Amazon, and IBM. These companies are keenly aware of the profits to be made from advances in machine learning and AI, and have voracious appetites for human-generated data across a variety of fields including commerce, social interaction, and health care.

The aims of the partnership, [as noted in the press release](#), are to partner with academics, researchers and ethicists to “recommend best practices, and publish research under an open license in areas such as ethics, fairness, and inclusivity; transparency, privacy, and interoperability.”

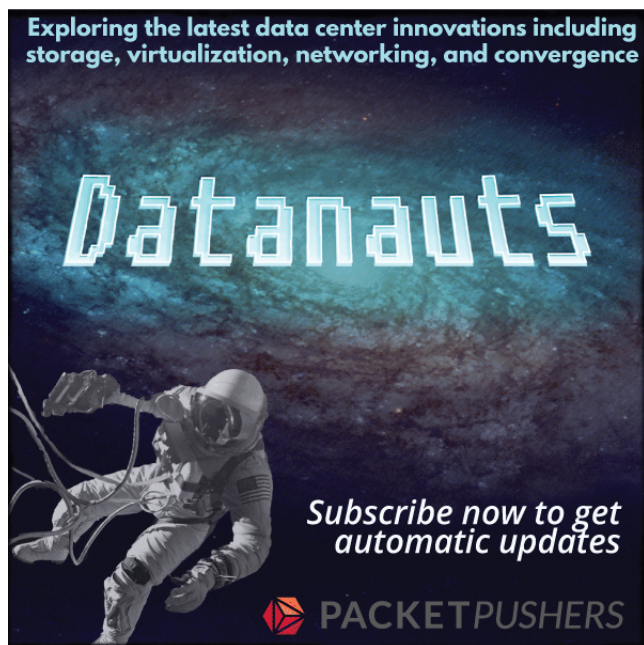
Those are laudable goals. But does anyone believe that a recommendation or best practice that emerges from this body will have any impact on the behavior of these corporations when real money is at stake?

I read this partnership as a sop to public concerns over serious issues like privacy and transparency, and an effort to get out in front of government regulations.

It's the kind of thing corporations can point to and say "We as an industry take your concerns seriously, and we've set up a toothless, non-binding organization into which we can chuck those concerns."

In the spirit of more accurate labeling, here's a few other names the partnership might want to consider:

1. Smart Computers Are Totally Nice And Not At All Something To Fear Or Question
2. Please Don't Ask To Look Inside The Blackbox Algorithms that Will Make Major Decisions About Your Life
3. An Industry Consortium That Can Be Safely Ignored When Profits, Market Dominance, And Citizens' Privacy Are At Stake



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The Network Break



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



Internets Of Interest

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

By Greg Ferro and Drew Conry-Murray

No More On-Call Martyrs

Alice Goldfuss [critiques the 'cult of masochism'](#) that has grown up around ops teams who are on call to troubleshoot problems after hours.

"On-call is glorified when it's all you're allowed to have. And, historically, ops folk are allowed to have very little. Developers are empowered to create and build, while ops engineers are only allowed to maintain and patch."

But besides critiquing this culture, she offers sensible fixes, including having rules in place around worker fatigue, and shifting some responsibility to developers.

Automating Cisco Nexus Switches with Ansible

Jason Edelman [shares a couple of different options for automating tasks on Cisco Nexus switches](#) using Ansible. He walks step by step through an example of managing a VLAN, and includes both code examples and commentary.

"Just over a year ago, Ansible recognized the importance of embracing the network community and since then, has made significant additions to offer network automation out of the box."

2016 Jealousy List


Several years ago, Bloomberg BusinessWeek started publishing a list of stories that it wished its reporters and writers had written. [The tradition continues in 2016](#), in which the Web site assembles over 40 excellent works from a variety of publications. There's several tech-related stories, as well as pop culture, politics, investigative reporting, sports, and more.

This is one to bookmark and come back to, particularly if you need reading over the upcoming holiday break.

And in keeping with the theme, I'm jealous of Bloomberg for thinking up this great idea!

New Microsoft Azure training and discounted certifications

Microsoft is announcing [new training and certification options for Azure](#), including access to several free Massively Open Online Courses (MOOCs). The MOOCs include videos, demos, and labs, so if Azure is on your radar for the new year, this may be a free and interesting opportunity to get up to speed.





WEEKLY SHOW

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Product News

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

Big Switch's BigSecure Architecture

Big Switch Networks is introducing a new use case for its technology, called BigSecure Architecture. The top-level takeaway is that by combining Big Switch's Big Monitoring Fabric and service nodes (x86 servers boosted by DPDK to accelerate networking capabilities and packet processing), Big Switch lets operators monitor traffic for security issues. If an attack is directed, traffic can be filtered to third-party remediation tools.

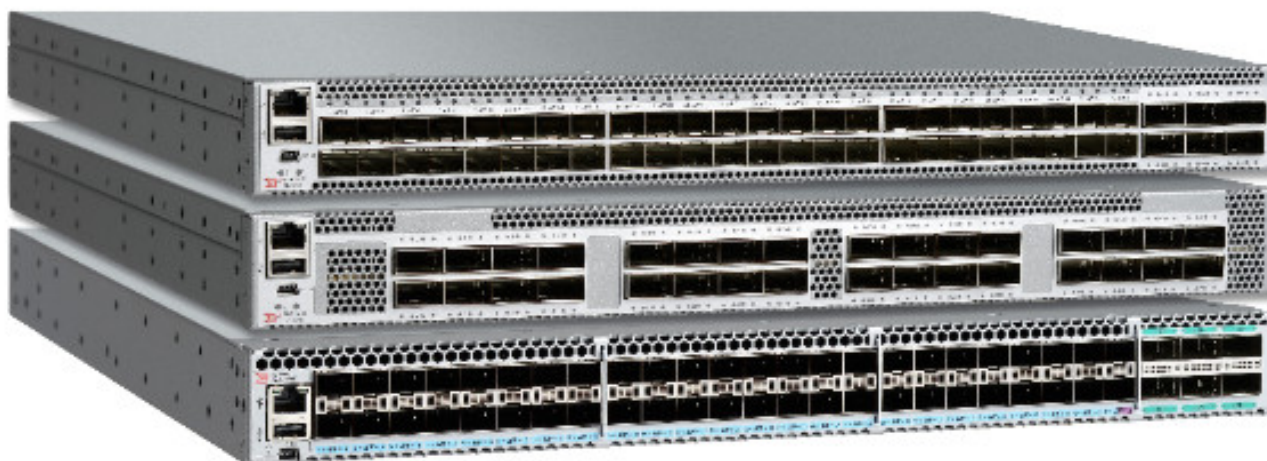
Ethan Banks has a detailed write-up, with diagrams, that gets into the nitty gritty.

[LINK](#)

Brocade Announces New Switches & Automation Software

Brocade has announced three new switches in its SLX line. It also announced three Automation Suites that target common networking tasks. The suites are part of Brocade's Workflow Composer, its cross-domain automation platform. Feeds and speeds and other details are available by clicking the link.

[LINK](#)



Recent Articles

The last five articles published on Packet Pushers

[PacketPushers.net - The Last Five](#)

[PQ Show 102: Sonus Networks & Migrating To Microsoft Cloud PBX \(Sponsored\)](#)

[Datanauts 063: Unikernels Vs. Containers](#)

[Network Break 115: Avaya Considers Bankruptcy; AWS Reinvents](#)

[Show 317: Nuage Networks' Virtualized Security Services \(Sponsored\)](#)

[PQ Show 101: Kentik NPM For Cloud & DDoS Detection \(Sponsored\)](#)

Watch This!

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





The Packet Pushers are experimenting with video as a way to share content. Greg kicks off the experiment with commentary on a presentation by James Hamilton at AWS re:Invent. Check it out and let us know what you think.



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Quick Survey: 2017 Predictions

In the spirit of looking ahead to the new year, which of the following predictions seems possible in 2017?

A. Amazon becomes so huge that it collapses in on itself and creates a wormhole in the fabric of reality. Luckily, most workloads get migrated to an AZ that still exists within our own coordinates on the space/time continuum.

B. IoT devices achieve sentience via a wireless neural network. But instead of trying to overthrow humans, they spend most of their time blogging about HBO's "Westworld."

C. Weaponized Facebook news feed algorithms create a Matrix-like alternative reality, minus the cool outfits and kung fu.

D. George R.R. Martin *still* hasn't finished the next installment of Game Of Thrones.

Did We Miss Something?

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

The End Bit

Sponsorship and Advertising - Send an email to humaninfrastructure@packetpushers.net for more information. You could reach 5,013 people.

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.

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