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# Dyn's Top Internet Providers: 2016 Baker's Dozen

by Earl Zmijewski *for Dyn Research*

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## Introduction

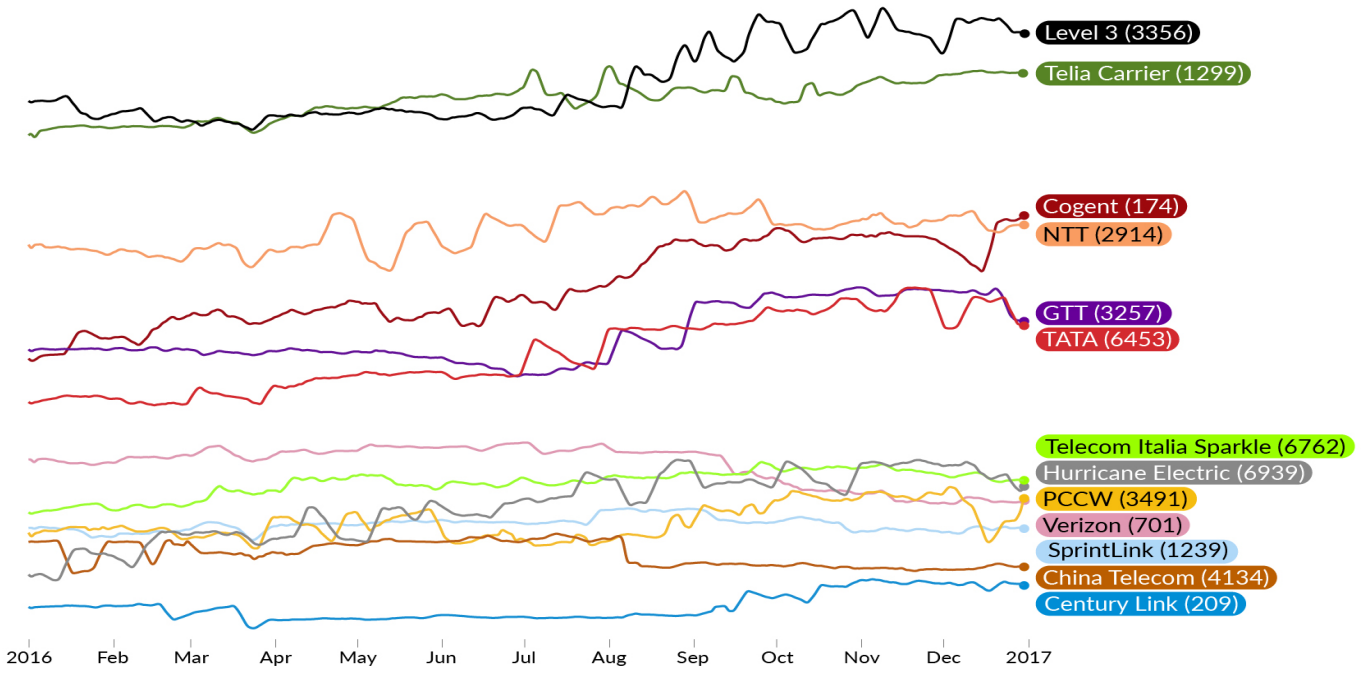
As is our annual tradition, this blog provides a year-end review of how the Internet providers at the top of our Internet Intelligence – Transit global rankings fared over the previous year. The structure, performance and security of the Internet remains a huge blind spot for most enterprises, even those critically dependent on it for business operations. These are familiar topics that we've covered over the years in this blog and our Twitter feed, and 2016 was no different. We saw bogus routing and subsequent grossly misdirected traffic from Ukraine and Iran, for just two examples. We saw cable breaks, new cable activations, censorship and crippling attacks. And much, much more. Dyn provides such critical insight into the structure and performance of the Internet, both real-time and historical, and uses this data set to make 40 billion traffic steering decisions daily for customers.

Back in 2008, we chose to look at the 13 providers that spent at least some time in the Top Ten that year, hence the name "Baker's Dozen". We repeated that exercise in 2009, 2010, 2011, 2012, 2013, 2014, and 2015. And for the first time in 2015, we even provided a regional Baker's Dozen blog, illustrating how substantially the provider rankings vary by continent. During these past 9 years, I've really wanted to retire this story line, since these rankings cover such a very small slice of our data and we have many more interesting things to talk about. But each year this time, the clamor starts to grow from our dedicated fan base, and I dust off this data set yet again. As in the past, I'll focus on global IPv4 rankings, given the lack of IPv6 adoption at the Internet's edge, where most IP space is allocated. Anyone wishing to explore our IPv6 rankings or further investigate our IPv4 rankings should subscribe to our Internet Intelligence – Transit product. This application provides full details of every AS on the global Internet, overall and by market, along with news events of interest concerning changes in transit and customer wins and losses.

While the specific details of ranking changes differ from year to year, my overall story line is often the same, namely, traditional US carriers continue to fade from view, while providers more focused on emerging markets continue to climb in our rankings. In fact, last year, I wrote: "Back in 2008, our rankings were dominated by traditional US carriers, many of which have exited the Baker's Dozen entirely or dropped significantly in their global rankings." But businesses can grow either organically or by acquisition, and several US firms have announced buyouts that should shake up the rankings once completed. In fact, US carriers now take 3 of the top 5 spots in our global rankings with Level 3 once again in a seemingly unassailable position.

In what follows, we'll briefly review some of the trends and changes we observed in 2016 relative to the top global Internet providers, and then we'll dive into what a post-acquisition world might look like over the next couple of years.

## 2016 BAKER'S DOZEN





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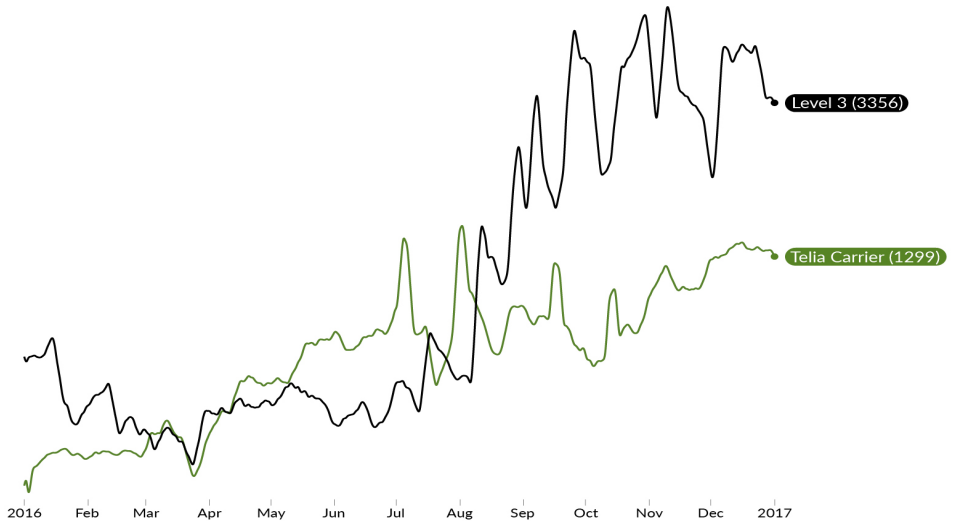
The above graph shows our global scores for the Baker's Dozen over the past year. As always, the absolute scores (computed from the quantity of transited IP space) are not meaningful in this context, so we omit the scale. At this high level, we see more or less steady growth for all of the players and some seemingly minor jockeying for position throughout 2016. However, our final annual rankings are anything but predictable, as 2016 saw some significant changes.

Last year, we saw Level 3 (#1) dramatically pull away from Telia Carrier (#2), after Level 3 had briefly given up its roughly eight year run at the top of the heap. And as we will see below, this margin is only likely to increase in the coming years. Cogent represents another big win for US carriers, surging from #5 to #3 (by a hair) in a single year's time. Last year saw NTT drop from its long held #3 position to #4, while Tata made steady gains and fought GTT for the #5 spot, before (barely) ending the year at #6, the same spot as last year. Another US carrier, Hurricane Electric, also saw impressive gains, moving all the way from #12 to #8. The more traditional US carriers, namely, Verizon, Sprint and Century Link, languished near the bottom of our rankings. However, as we will see, merger activity stands to improve the lot of at least two of these entities. In short, US carriers are beginning to reassert themselves on the global stage after a long period of stagnation or decline.

To make more sense of the tangled graphic above and this year's changes, we'll divide up the players into three tiers and zoom in on each in turn. Then we'll discuss the proposed mergers and how they might shake up our rankings.

## Providers 1 and 2





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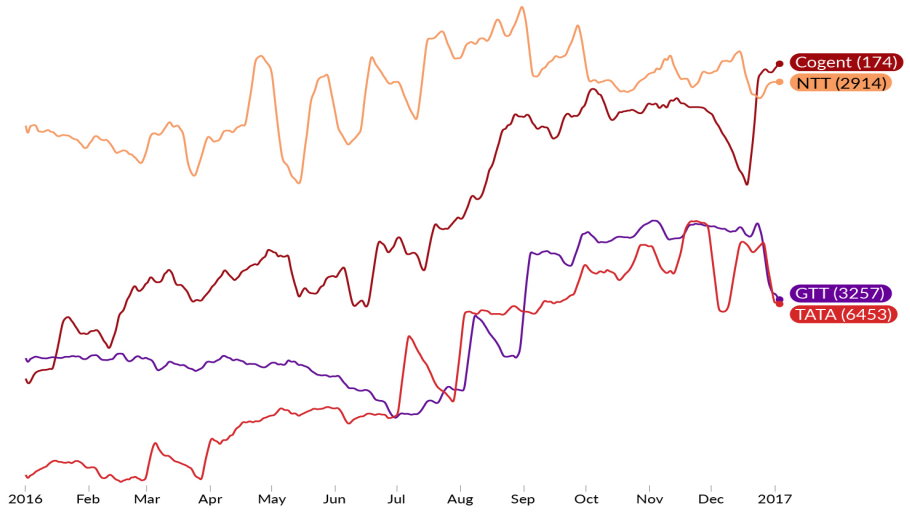
The beginning of last year saw Telia Carrier and Level 3 in a close fight for #1, with Telia opening up a sizable lead by mid-year. Although Level 3 (AS3356) completed their acquisition of Global Crossing (AS3549) back in October of 2011, over the intervening years, Level 3 continued to treat Global Crossing more like a peer (with respect to routing), since their networks had not yet been fully merged. And we continued to show them as separate entities. That changed in mid-2016 and Level 3 picked up credit for all of Global Crossing's downstream customers, accounting for Level 3's surge back to #1 in August.

When we first wrote about the Level 3 merger with Global Crossing in early 2011, we called the new entity a "global colossus" and stated that "the next five global providers would have to merge to rival the new Level 3's score!" Telia Carrier's steady growth since then has given Level 3 a serious challenger and 2016 ended with Telia's score just 5% below that of Level 3's, despite Level 3 finally getting full credit for Global Crossing by our scoring algorithm. However, CenturyLink's proposal to buy Level 3 (expected to close in late 2017) should ultimately give the combined new entity another huge boost in our global rankings, perhaps allowing it to remain at the top of the leader board for many more years.

## Providers 3 through 6




Last year saw consistent and solid gains for all the carriers in this group. But the true star of the show was Cogent, surging all the way from #5 to #3 in twelve short months. Cogent's rise was in no small part due to broad-based gains from Asian carriers. Cogent's substantial end-of-year drop was the result of losing Apple (AS714) as a customer. But they quickly began to recover with more gains in Asia, such as increased transit from PT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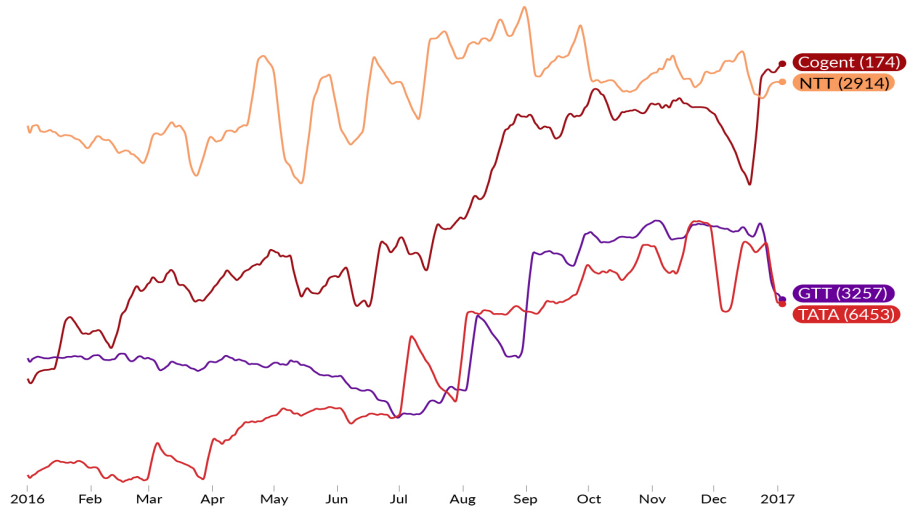
Telekomunikasi Indonesia (AS7713), Rostelecom (AS12389) and Pacnet (AS10026) to name a few, ending the year just ahead of NTT. NTT's growth was a bit more erratic, but still about 4% over where they started the year and just a hair below Cogent at year end.

The other US carrier in this group is GTT. While 2016 saw GTT drop from #4 to #5 in our global rankings, due to Cogent's rise, they still saw some impressive gains in the second half of the year after lackluster first half. GTT's gains were due in part to increased transit in Asia, such as increases from strong regional players like Korea Telecom (AS4766) and Japan's KDDI (AS2516). Tata was a much more consistent performer throughout the year with solid transit gains in Asia from the likes of SingTel (AS7473), SK Broadband (Hanaro) (AS9318), LG Uplus (LG DACOM) (AS3786), and Vietnam Posts and Telecommunications (AS45899). Only year-end declines by both GTT and Tata kept GTT ahead of Tata by the narrowest of margins. Tata lost some transit from Vietnam's Viettel (AS7552) and Singtel, while GTT gave up some of its earlier gains from KDDI.

## Providers 7 through 13



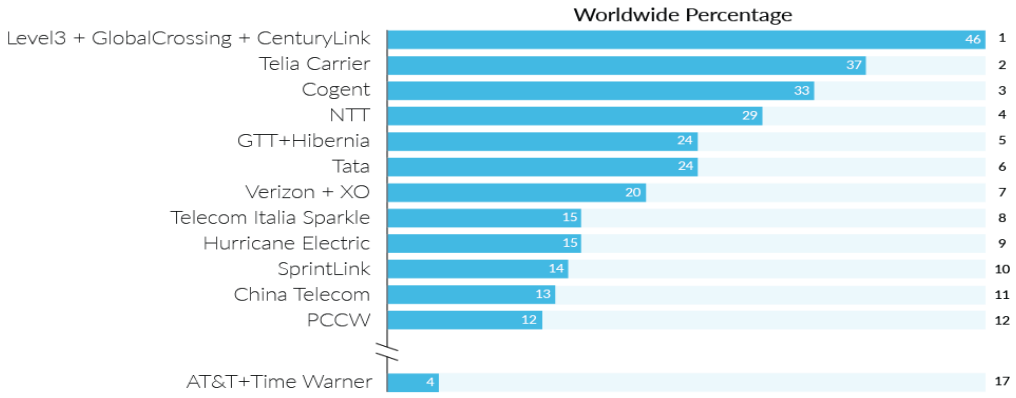

The biggest stories in our final tier again belong to American carriers with Hurricane Electric surging all the way from #12 to #8, while Verizon fell precipitously from #7 to #10. Hurricane Electric saw transit gains from Telstra Global (AS4637), Mexico's Uninet (AS8151) and China Railway (AS9394), among others. Verizon's second half of the year plunge was due in part to losing large customers such as LG Uplus, Bharti Airtel Ltd. (AS9498) and C&W Networks (AS23520). To round out the American carriers listed here, Sprint spend much of the year treading water, while Century Link's late year surge was due in part to a considerable increase in transit from Telstra Global.

## Conclusions and a Look to the Future

Traditionally, in this section, I talk about the decline of US carriers and the rise of those focused on the emerging world where there is still considerable growth in connecting up the rest of humanity. But something profound changed in 2016. For the first time since 2011, two American carriers were among the top three in our global rankings. And as we illustrated above, American carriers are making big gains in the emerging world, where Internet connectivity can still be considered a novelty.

Plus 2016 saw a wave of M&A announcements. CenturyLink, owners of Qwest and Savvis, announced plans to purchase Level 3, owners of Global Crossing. GTT said they'd acquire Hibernia, a deal that closed at start of 2017. Verizon laid claim to XO and even AT&T, which left our Baker's Dozen entirely in 2013, got into the act by announcing plans to acquire Time Warner. But our rankings are not based on acquisition announcements or even actual ownership. They are based on objective routing data, which definitively shows how networks are interconnected and from which you can infer real world dependencies. In other words, until two entities are routed as if they were a single business, we treat them separately.

But let's assume for a moment that all of these proposed acquisitions complete and all of the relevant networks are immediately merged. What would our global rankings look like then? Using their current customers, we performed our scoring calculations on all of the purposed mergers, resulting the following breakdown by global market share. The percentages add up to more than 100%, since any organization serious about its Internet presence is multi-homed, i.e., has more than one service provider for redundancy.




While the number one question you should ask a Managed DNS provider is if they run their own network, there are other things to look for when choosing a vendor. To help you make the most informed decision regarding managed services, cloud vs on-prem, read this DNS evaluation guide.

*Learn more:*

Read our
**Free DNS Evaluation Guide.**

Here we see Level 3, CenturyLink, et al. with 46% of the global market share, which is considerably less than the 55% a merged Level 3 and Global Crossing would have had back in 2011. The main effect of the current proposed merger is to extend Level 3's lead over Telia. A merged GTT and Hibernia keeps GTT at #5, but a merged Verizon and XO propels Verizon from #10 to #7. And a combined AT&T and Time Warner lifts AT&T from #25 all the way to #17, but still along way from regaining a place in our Baker's Dozen.

In conclusion, while our global rankings are more diversified then they were a decade ago, American carriers with a renewed focus on emerging markets and strategic acquisitions have definitively shown that they are not dead yet. It will be interesting to see if they can maintain this momentum. Stay tuned.

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