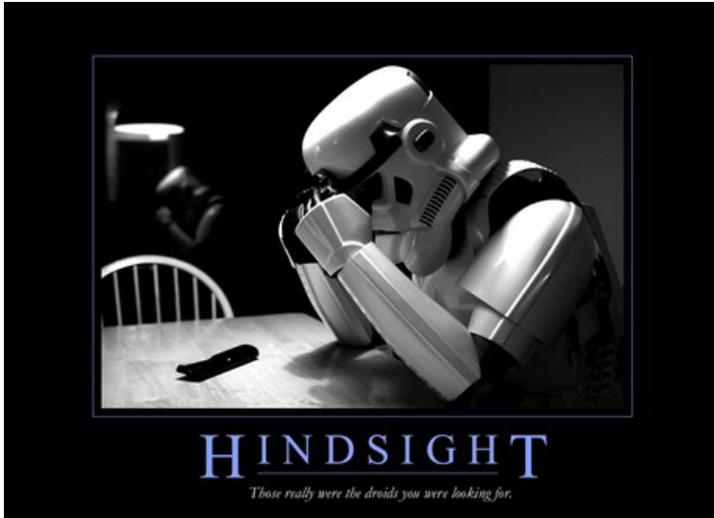


Hindsight is Always Twenty-Twenty



Lori MacVittie, 2010-23-04

There have been many significant events over the past decade, but looking back these are still having a significant impact on the industry.



Next week is [Interop](#). Again. This year it's significant in that it's my tenth anniversary attending Interop. It's also the end of a decade's worth of technological change in the application delivery industry, the repercussions and impact of which in some cases are just beginning to be felt. We called it [load balancing](#) back in the day, but it's grown considerably since then and now encompasses a wide variety of application-focused concerns: security, optimization, acceleration, and instrumentation to name a few. And it's importance to cloud computing and dynamic infrastructure is only now beginning to be understood, which means the next ten years ought to be one heck of a

blast.

Over these past ten years there's been a lot of changes and movement and events that have caused quite the stir. But reflecting on those ten years and all those events and changes brings to the fore a very small subset of events that, in hindsight, have shaped application delivery and set the stage for the next ten years. I'm going to list these events in order of appearance, and to do that we're going to have to go all the way back to the turn of the century (doesn't that sound awful?).

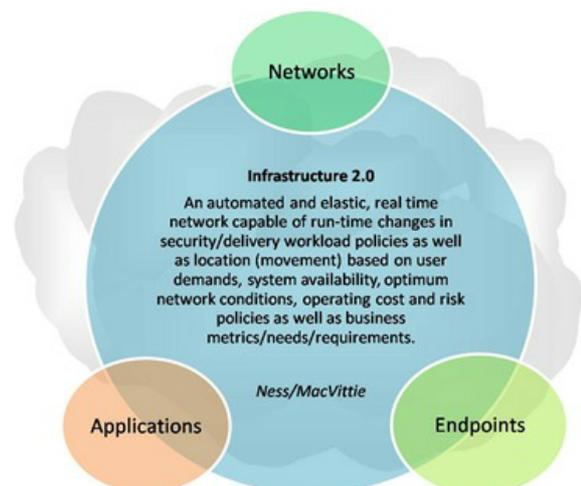
1. THE BIRTH of INFRASTRUCTURE 2.0

In 2001 [F5](#) introduced [iControl](#), a standards-based API that allowed customers, partners, and third-party developers to control BIG-IP programmatically. Being a developer by trade and a network jockey by experience, this concept blew my mind. Control the network? Programmatically? How awesome was that? Turns out more awesome than even I could realize, because it wasn't long before [other application delivery focused vendors were doing the same](#) and from this has grown the foundations for Infrastructure 2.0. The new network. The dynamic infrastructure necessary for cloud computing and the answer to the myriad challenges raised by virtualization in the data center. Like most Web 2.0 applications today, an API is nearly considered "table stakes" for new or updated products; a must-have if a solution is going to be able to fit in with the increasingly integrated networks that drive data center and, in particular, network automation.

Looking ahead [Infrastructure 2.0](#) and these control planes are increasingly important to service-based cloud computing offerings and to organizations desiring to automate and orchestrate their virtualized data center for maximum efficiency. These APIs are the means by which the "new network" will be implemented, how the "network" will be integrated with cloud frameworks.

2. THE DEATH of NAUTICUS NETWORKS

[Nauticus Networks](#) had a dream; a dream of a virtualized layer 7 switch. Not the veneer kind of virtualization but real, honest-to-goodness virtualization of the entire



hardware. It was amazing. And in 2004 [Sun](#)

[Microsystems' acquired the company](#) and promptly let starve to death a solution that might have had a very bright future reign in the virtualized data center. I won't go into the details of how Sun killed the platform; suffice to say no-one saw then that it was a multi-tenant load balancing king waiting for its (cloud) kingdom to ascend the throne.

The death of Nauticus impacted the market primarily because it never had a chance to grow into its legs and show the value of a virtualized hardware platform. It was way, way before its time which, in the case of a start-up, can be deadly. Its subsequent death at the hands of Sun made it appear that no one was interested in virtualized hardware platforms, which ultimately led to no one else really picking up on the concept. (Cisco's virtualization is not nearly as thorough as Nauticus' implementation, I assure you.) The lack of truly virtualized hardware platforms has led instead to architectural infrastructure virtualization, which is almost certainly the future of cloud computing infrastructure for a variety of reasons with portability and architectural homogeneity being at the top of the list.

3. **THE NETWORK AS A SERVICE**

The introduction of [Cisco's SONA in 2005 was the talk of the tech industry](#) for months thereafter. Despite the fact that it never really gained traction outside of Cisco (and the press) it did kick-start interest in what might be called today "Network as a Service."

The idea that network functionality might be available to developers and applications "as a service" is one that extends naturally today into IaaS offerings. Where [F5](#) introduced the concept of the control-plane necessary to implement dynamic cloud computing infrastructure, Cisco introduced the concept of applying that infrastructure functionality in a service-oriented manner. As a service, like cloud computing.

Looking into the next decade you can probably see that this concept is one that must be embraced by cloud computing providers in order to differentiate their offerings. By packaging up and serving "application acceleration" or "protocol security" or "web application firewall" as a service, applications in cloud computing environments will eventually experience unprecedented control and integration over and with the network.

There were many, many other acquisitions ([Citrix](#) → Netscaler, Nortel → Alteon and then [Radware](#) → Nortel to name a few) and many other innovations in the past ten years but these three stand out as influencing where we stand today and, perhaps, where we're going tomorrow. We'll see what the playing field looks like ten years from now, when hindsight again rears its mocking head and clearly shows what was and was not influential.

This Interop proves to be another good one. Not because of all the new products (always cool of course and I'm looking forward to being able to talk about them!) but, like these events, because it's [focusing more on how than what](#). *It's a new decade and with it comes a new era of application delivery. This one looks to be another that raises the bar in terms of the importance of architecture and the network to the next generation of applications and data center models.*

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