Success in the digital economy relies on being connected – to customers, business partners, the cloud, data centers, mobile devices, applications, smart objects, and more. And the network connection upon which most businesses invariably rely is the Internet.

Given the critical importance of the Internet to modern global businesses, it is imperative that IT professionals are able to ensure optimal performance and reliability of applications from endpoint to endpoint. Yet the tools available for performance monitoring to date have been limited to applications and internal performance within the organization’s infrastructure.

Application performance management (APM) and network performance monitoring (NPM) platforms give IT professionals valuable information about internal assets within their control such as servers, apps, and websites. And while these tools are useful in monitoring and controlling World Wide Web-related resources – the applications, web pages, and browsers used by the enterprise to interact with customers, employees, and partners – their usefulness ends where they connect to the public Internet.

What IT professionals have been lacking is a performance management platform that delivers real-time visibility into traffic patterns across the public Internet - a complex infrastructure of digital pathways, routers, cloud hosting, and service providers that connect everything to everything – including a business to its customers.

Internet Performance Management (IPM) gives IT professionals visibility into Internet traffic patterns that can impact a sophisticated online infrastructure including ISPs, cloud hosts, content delivery networks (CDNs), web pages, apps – and, ultimately, customers, employees, and all other end users.
By leveraging an intelligent Internet Performance Management platform, businesses can now complement their existing APM and NPM systems. They can collect and act on real-time information to steer traffic to less congested Internet pathways, thus taking advantage of the Internet’s dynamic nature and gaining an edge over competitors who only see two-thirds of the performance management picture.

**Internet or bust**

The Internet provides a network infrastructure capable of reaching more customers than ever before, anywhere and at any time. Billions of people around the world today are connected to the Internet, but the Internet revolution is far from over. More than half of the people in the world today are offline, according to a September 2015 report by the United Nations Broadband Commission.

The Internet of Things, the continued growth of mobile applications, cloud computing, and the increasing reliance on online marketing and commerce make the Internet a more essential factor than ever for enterprises by enabling:

- Customers to interact with enterprise resources such as email, websites, payment platforms, service desk, and mobile app backend services
- Employees to reach cloud apps and developers to access cloud-based development platforms
- Collaboration and information-sharing with enterprise partners, suppliers, and distribution channels

The Internet also is the vehicle that enables tech-savvy organizations to provide customers with a personalized experience designed to build brand loyalty and drive revenue. According to Forrester Research, 69% of the U.S. online population “regularly buys products online, with clothing, consumer electronics, and computers generating about a third of all online shopping dollars in the U.S.”

Merely being online, however, isn’t enough; speed, agility, and flexibility are essential for survival. Slow-loading web pages, buffering videos, and balky mobile apps cost even the most reputable brands a hefty price in the form of dissatisfied customers, frustrated employees, lost advertising revenue, sales opportunities, and diminished brand value.

Studies by major Internet companies in recent years underscore the impact of poor performance on the bottom line:

- Experiments by online retail giant Amazon showed that sales decrease by 1% for every 100 milliseconds of latency
- Search portal Yahoo found that a server delay of just 1 second leads to a 2.8% drop in revenue

Conversely, Microsoft experiments show that every increase in speed of 100 milliseconds translates into a revenue increase of 0.6%.

**Search for full transparency**

Clearly performance matters – across public and private networks. Until now, though, IT departments and their respective organizations have lacked full transparency into performance beyond their network perimeters.

Data center monitoring and network performance monitoring tools evolved in the early days of the commercial Internet, enabling IT to measure internal infrastructure performance. But as traditional infrastructures have become more dynamic and many of its components such as data storage and backend services have moved to the cloud, NPM has become less effective as a performance monitoring tool simply because there are fewer internal network components to monitor.

The explosive growth of web-based core business applications and mobile apps led to the development of application performance monitoring software. Using APM tools, developers can embed code in business-critical apps to monitor the performance of application components. Knowing why an app is underperforming can allow developers to update and upgrade code.

Unfortunately, APM tools offer limited visibility into the details of performance of the connecting Internet infrastructure. They can measure overall performance in terms of page loads and other metrics, but can’t identify the source or impact of performance occurring within the Internet. This is true whether businesses use data centers, cloud providers, CDNs, or combinations of these web assets. That’s a significant shortcoming. And since more organizations are moving apps to the cloud, APM solutions, like NPM, have a diminishing ability to monitor and manage the performance of business applications.

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Enter Internet Performance Management
In the digital economy, IT’s inability to monitor the performance of the various Internet connections delivering data, applications, and services to customers, business partners, and employees creates an increasingly unnecessary business risk. This is particularly true as more apps and infrastructure components are migrated from the network infrastructure to the Internet-connected cloud. New tools are needed to provide transparency into real-time Internet performance dynamics in a way that generates actionable data for IT to optimize and adapt the Internet pathways on which enterprises run their businesses.

Internet Performance Management platforms collect raw data from all major network service providers (NSPs) and cloud service providers, using analytics to identify traffic bottlenecks, outages, and the best routes around those issues. This information can be used by IT professionals to redirect traffic to pathways that are less congested and more responsive.

IPM fills the holes missed by NPM and APM solutions, allowing IT to:
- Decide where to host content and applications for top performance
- Determine the impact of website partners, like cloud providers and ISPs, on web responsiveness
- Identify the optimal cloud hosts, NSPs, CDNs, and SaaS providers for Internet traffic, by region to ensure optimization of infrastructure spend
- Monitor and measure service provider performance and SLA compliance

The Dyn data difference
Internet Performance Management, executed properly, provides a compelling competitive advantage. It supplies or details dynamic, actionable data to fuel performance-based business decisions that can dramatically improve the customer experience. Every second counts in this digital economy. The ability to quickly identify—and more importantly—act on an issue that is causing delays will save precious seconds, leading to serious savings.

Dyn’s IPM platform offers IT professionals unparalleled transparency across the Internet, as well as traffic management tools that allow them to reroute their Internet-based assets as necessary, improving response time and availability.

Dyn’s IPM platform delivers immediate Internet traffic alerts, enabling IT professionals to take a proactive role in ensuring optimal performance of apps and web assets. Dyn’s IPM solution also provides customers with high-quality data analytics through pre-packaged visualizations or the delivery of raw data for customers to run through their own analytics platforms.

The IPM platform also:
- Drills down to look specifically at Internet performance between Dyn customers and their Internet assets (such as cloud-based apps)
- Provides a consolidated, objective view across all Internet assets
- Measures availability from customers to cloud assets as well as reachability from cloud assets to key markets
- Applies appropriate metrics to specific performance factors such as traceroutes for latency and bit loss for quality
- Requires neither hardware/software installations nor changes to the network
- Offers insight with the ability to implement changes through Traffic Director, Active Failover (in case a data center or cloud host goes offline), and Managed DNS

The Internet has created unprecedented opportunities to leverage networking technology. Yet while the ubiquity of the Internet and the low cost of being connected level the playing field, they also create potentially dangerous disadvantages for organizations that lack the vision to see the bigger picture, and the tools to fully optimize Internet performance.

To learn more about intelligent Internet Performance Management, visit this resource page.