

About Ipanema Technologies (www.ipanematech.com)

Ipanema develops next-generation solutions for enabling large enterprises to have full control over their global network. Ipanema's unique patented technology guarantees business application performance and continuity in a cloud computing world no matter where or when. With solutions used extensively by many of the world's largest telecom providers and enterprises across business and public sectors, Ipanema controls and optimizes close to 100,000 sites among 1,000 customers.

What are the most critical issues for large scale enterprise networks?

Enterprises need perfect application performance and nonstop business continuity, while also decreasing their IT costs at the same time. Until now, there were constant – and painful – choices among performance, continuity and cost.

The additional bandwidth required to support all applications and back-up lines to match reliability targets wreak havoc on IT budgets as enterprises strive to control costs. In addition, the increasing use of public cloud and SaaS (Software-as-a-Service) applications, as well as social networking and other less business-oriented online usage, require more bandwidth.

What are hybrid networks?

Hybrid networking is the simultaneous usage of different networks— MPLS and Internet VPN—to interconnect an enterprise's headquarters, data centers and remote sites. Effective network management ultimately extends the hybrid to multiple elements to also encompass the following in a true "any-to-any" model:

- Different telecom operators in an (MPLS + MPLS) model
- Different transport technologies: MPLS and carrier Ethernet services
- Different application delivery models: private data center and public cloud

What's driving the need for unified hybrid networks?

The need for hybrid networking today has many business drivers: better enterprise application performance, faster deployment of applications and upgrades, more reliable business communication continuity, lower IT costs and network access in locations where MPLS is unavailable.

Hybrid networking is not a new concept, but has been complex and difficult to implement. Until now, performance and continuity have been less than optimal, mitigating the expected business benefits.

With Ipanema's Hybrid Network Unification offering, companies can eliminate the trade-offs between the performance and quality of MPLS and lower-cost Internet VPN. This dynamic mix enables enterprises to get the best of both worlds in a unified network: significantly greater scalability and speed with 99.99% reliability.

What is Ipanema's solution?

Ipanema's Hybrid Network Unification is the newest offering in its "All in One" system, encompassing Application Visibility, Quality of Service (QoS) and Control, WAN Optimization, and now, Dynamic WAN Selection, for all network traffic.

This holistic approach starts with an enterprise's business objectives and dynamically aligns application performance accordingly through its patented Autonomic Networking technology. It instantaneously takes into account current end-to-end network performance and load, while recognizing each application's business criticality, performance objective and information sensitivity for guaranteed and optimized delivery – on multiple networks concurrently.

Using "sense and respond" intelligence, Ipanema automatically monitors, controls, accelerates and selects the best path among the hybrid networks for each individual user's traffic. Ipanema's Autonomic Networking enables high-speed, second-by-second decision making through distributed components that can exchange information quickly and accurately.

Ipanema combines this intelligent network automation software with physical devices that interact collaboratively and constantly to dynamically match hybrid network capacity with application demand. Together, they ensure that pre-defined global application performance objectives are always reached over wide area networks.

What's the problem with the typical approach?

Enterprises that implement non-unified hybrid networking have to manage multiple network types separately and manually. This is cumbersome, reactive and costly, requiring experts to monitor and intervene, while also limiting performance and capacity.

Traditional hybrid network configurations include:

- **Hot/standby** — In this approach, only one network is used at a time, regardless of the capacity and performance of the other network. While this configuration addresses business continuity (blackout), it neither maximizes the delivered application performance (brownout) nor takes advantage of available capacity. In short, **enterprises are paying for a resource that remains unused 99.9% of the time.**
- **Static load sharing** (frequently based on router-based Policy Based Routing) — In this situation, an enterprise might implement a rule that ERP traffic utilizes the typically fast MPLS access, while email uses the larger Internet-based network. While this situation might be more efficient than the hot/standby approach, it is far from optimal. For example, what would happen in case of performance degradation of the MPLS (or Internet)? What occurs if one of the links is saturated or if the two networks are equivalent MPLS (or Internet) to one? **Application traffic is highly dynamic and network performances changes constantly; therefore, static traffic management is ineffective.**

Moreover, neither approach can handle the increased complexity of managing more than two network types at a time. The effects of such static approaches are:

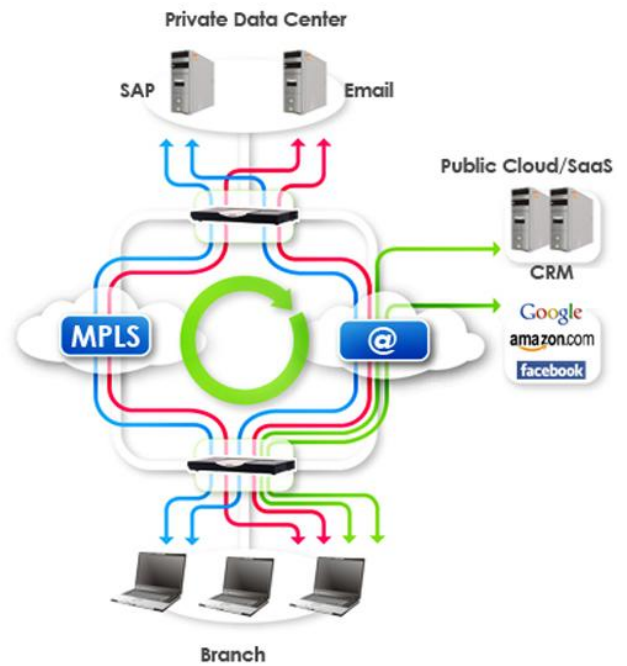
- 1) Unpredictable application performance and end-user experience
- 2) A network resource that is not appropriately supporting business processes as necessary

3) Diminished value of the network budget

How does Ipanema unify hybrid networks?

With the Ipanema solution, best network selection is performed in real-time, automatically, taking into account three fundamental criteria:

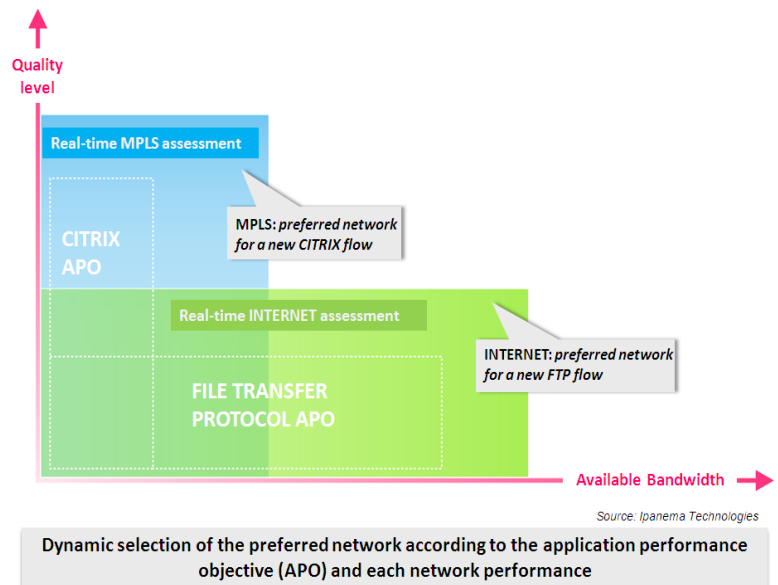
- 1. **The real-time end-to-end performance of each available network.** This allows, for example, selection of the fastest network to guarantee performance for voice traffic and the largest network for large file transfers.
- 2. **The real-time load—weighted according to business criticality of application flows—for each end-to-end path across networks.** This provides very efficient network load balancing among all possible paths for maximizing the amount and the value of information that can be sent between sites.
- 3. **The characteristics of each application.** This can include the type of traffic (real-time, transactional, background), the performance objectives (delay, jitter, bandwidth), the business criticality and the information sensitivity (level of privacy to apply).



Using these criteria, the Ipanema solution globally defines a high-level Application Performance Objective (APO) for each important application. For each user application flow, “score” is computed in real time, taking into account the corresponding APOs, as well as the quality and load of each possible site-to-site path.

The best possible path is then automatically deduced and applied in order to: 1) match, at a minimum, the desired performance objective and 2) maximize network resource usage.

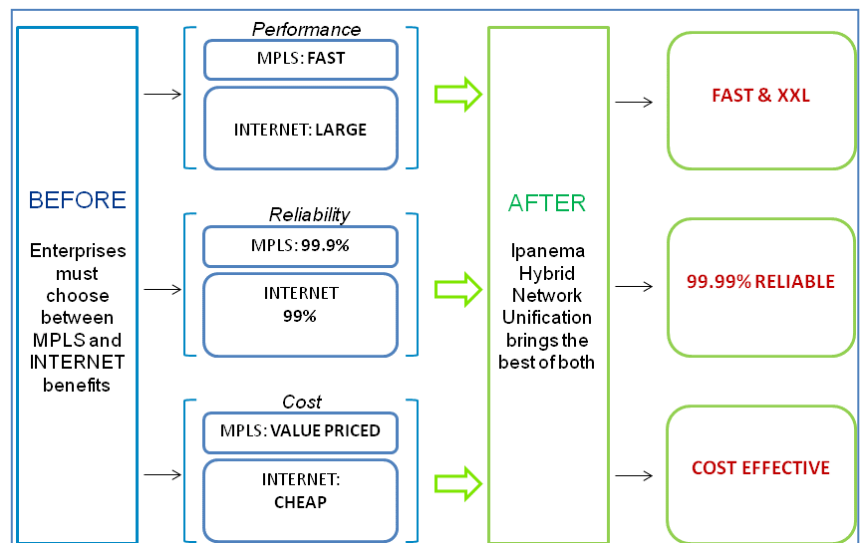
Ipanema’s Hybrid Network Unification solution is the newest component in its automated, integrated management system for large scale, enterprise WANs. Also covering application visibility, QoS & control and WAN optimization, Ipanema’s All in One solution addresses all possible application performance issues over networks, with exceptional simplicity and guaranteed high performance.



What are the bottom-line benefits of Ipanema's solution?

Ipanema's Hybrid Network Unification solution ensures maximum application performance and business continuity—improving productivity, customer satisfaction and profitability—by automatically selecting the best paths for applications according to criticality.

- **Lower overall IT costs:** While exact figures depend on deployment characteristics and geography, customers using Ipanema's solution have shown a net cost decrease of 50-80% per transferred Gbyte for a hybrid [MPLS + Internet] unified network compared to full MPLS.



- **Optimized application performance:** Instead of reacting to application availability and performance issues as they are reported, Ipanema automatically and proactively suppresses blackouts and brownouts – especially critical in e-commerce and call-center dependent enterprises. Enterprises also fully benefit from a high-capacity Internet experience.
- **Seamless hybrid IT platforms:** Ipanema's Hybrid Networking enables enterprises to consolidate data centers and adopt new computing platforms faster, including complete visibility and management of external or private cloud networks.
- **Reduced time to deploy:** For enterprises that need to quickly deploy or modify their infrastructure, Ipanema enables everywhere and anytime access to the Internet, even where MPLS networks are out of reach.
- **Improved user satisfaction:** Whether end users or service provider's customers, the ability to guarantee application SLAs, improve overall Quality of Experience (QoE) ratings and lower IT costs all translate to increased satisfaction.

What's different and better about Ipanema compared to the alternatives?

All in One Enterprise WAN Management System:

Ipanema's Hybrid Network Unification is the newest part of its "All in One" solution. Ipanema is the industry's first and only network management vendor to encompass Application Visibility, QoS and Control, WAN Optimization, and now Dynamic WAN Selection, in one, integrated solution. Based on Autonomic Networking, Ipanema's patented, automated technology, the result is adaptive, globally coordinated, automated processing of all application flows on the network.

Ipanema brings automated intelligence to the constantly evolving complexity of enterprise network and application environments. The Ipanema system includes unique functionality to manage enterprise WANs, including:

- **Carrier-class central management software** allied to distributed cooperative devices
- **Global performance management** based on high-level application performance objectives

- **Complete visibility** of network traffic and application performance—from global to fully detailed views
- A very **cost effective deployment** scheme that does not require technology deployment at each and every site

Sense and Respond, Application-Aware Automation:

Traditional traffic management tools—so-called “policy-based management”—are not able to cope with the increasing complexity and reality of today’s enterprise WAN environments. They rely on partial information collected site-by-site from local devices (routers, probes), which is manually processed by engineers who then must make their best guesses for appropriate policies for each device. The tools are cumbersome to configure and not agile enough to address the required level of flexibility. As a result, configurations are not optimal or dynamic, as they cannot adapt to the ever changing traffic patterns that flow over the network. The performance delivered to end users does not match expectations.

Ipanema’s “sense and respond” intelligence dynamically monitors end-to-end network performance and load, while recognizing each application’s business criticality, performance objective, and information sensitivity, and shifts and optimizes traffic accordingly – all in real time.

Ipanema combines this intelligent network automation software with physical devices that interact collaboratively and constantly to dynamically match hybrid network capacity with application demand. They ensure that pre-defined global network performance objectives are always reached.

For More Information on Ipanema’s Hybrid Network Unification solution:

[Link to Hybrid Network Unification White Paper](#)

[Link to Hybrid Network Unification website section](#)

[Link to Hybrid Network Unification video](#)