White Paper

WAN Governance Executive Primer

How WAN Governance improves business performance

After budget cuts during the global recession, many enterprises in 2010 will operate with IT spending at 2005 budget levels. Given the dependence on wide area networks for operational performance and enterprise growth, WAN Governance, a strategic and business - driven approach to network management within IT Governance, will become even more critical for executives to achieve business goals.

Using WAN Governance, organizations have been able to:

- Roll out business applications across their enterprise without long, costly network reconfigurations - accelerating application time to value and ROI while saving millions in IT costs
- Increase their global WAN capacity by 3x to 4x with no additional network investment - reducing costs for expensive bandwidth and delaying need for network upgrades
- Improve the performance of business applications over their corporate network - eliminating up to 90% of network - related application performance incidents and reducing time - to - repair incidents by 80%
- Increase availability and response times of business applications –improving workforce productivity, customer service and relationships with partners who depend on network access
- Improve usage of software assets – optimizing hardware and license utilization while reducing maintenance expenses
- Reduce overall OPEX and CAPEX costs while achieving higher levels of business performance

"As the complexity of managing WAN traffic is increasing, organizations need more capabilities for optimizing application performance than just WAN acceleration. They are looking to couple application technologies with capabilities that would allow them to have full visibility and control over their WAN traffic. WAN Governance is an innovative concept that allows organizations to use a combination of traditional WAN optimization techniques and robust application performance management capabilities to ensure optimal speed and availability of business - critical applications. More importantly, WAN Governance allows organizations to use an integrated approach for managing application performance from a global perspective. This management concept goes beyond just a mix of technology capabilities and it allows organizations to align their IT and business goals."

Bojan Simic, Founder and Principal Analyst at TRAC Research

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Ipanema Technologies

Ipanema develops next-generation solutions enabling any large enterprise to have full control over their global network. Ipanema's unique patented technology guarantees business application performance for each user, no matter where or when. Ipanema is used extensively by many large telecom operators as well as by large multinationals across all market segments, including banking and finance, public sector, energy, pharmaceuticals, automotive, IT and others.

About This Publication

Ipanema has created this publication primarily as an educational resource for chief information officers (CIOs), senior management and IT management. The content of this publication is intended to inform, educate and introduce senior executives to the subject of WAN Governance and to enable further investigation for its application in large enterprise environments.

1. EXECUTIVES RAISE IT INFRASTRUCTURE FOCUS TO ACHIEVE BUSINESS GOALS

Recent surveys of senior executives from around the world reveal growing recognition of the importance of IT to improving business performance.

Even with the recent economic downturn, IT's role as a fundamental enabler of business strategy trumps its use as a cost - saving tool. According to a survey by Gartner Executive Programs of more than 1,500 corporate and public sector CIOs in 41 countries, business expectations are shifting from a focus on greater cost - based efficiencies to achieving better results based on enterprise and IT productivity.[1]

In a survey of 250 senior executives in 22 countries commissioned by the IT Governance Institute (ITGI), a research think tank and leading reference on IT governance for the global business community, more than half consider IT very important to their enterprise's ability to achieve its strategy or vision. They also believe, however, that there are barriers - led by the difficulty in implementing business applications - that prevent their enterprise from realizing the full value of its IT investments.[2]

Effective WAN Governance, a method of IT management developed by Ipanema Technologies, enables organizations to overcome such barriers to achieving critical business goals. This approach is especially important at a time when budget cuts implemented during the global recession force companies and public sector agencies to do more with less. In 2010, according to the Gartner survey, corporate IT departments will operate with basically the same level of resources as they had in 2005.

Using WAN Governance, organizations have proven to be able to manage their business networks at much higher levels of performance for lower costs, and dynamically align IT performance with ever - changing business needs. The following pages provide the basic concepts of WAN Governance from a senior executive's perspective and the clear business value it brings to results - oriented enterprise.

[1] Gartner Executive Programs (EXP), 2010 CIO Survey, www.gartner.com/it/page.jsp?id=1283413
[2] IT Governance Institute (ITGI), An Executive View of IT Governance, 2009, www.itgi.org

2. WHAT IS WAN GOVERNANCE?

Corporate governance - a set of processes, policies and laws that determine how an enterprise is directed and controlled - is in the spotlight once again. While the concept emerged in the 20th century, there has been renewed interest due first, in part, to the high - profile collapse of significant corporations and organizations around the world, and now for the need for better oversight in changing economic conditions.

Effective corporate governance relies substantially on the advantages of information technology. Organizations depend on IT - driven processes not only to operate more profitably, but also to gain the information visibility for decision making. In today's rapidly changing industries, executives need more and faster insight into markets, strategic options, costs, risks, etc. to constantly adapt enterprise performance to market conditions and innovations that create new business opportunities – and to foresee the business and financial implications of today's decisions.

In most organizations today, IT is so fundamental to operations, business performance and growth, that IT governance has come into its own as a critical element of corporate governance. ITGI defines IT governance as "*an integral part of enterprise governance and consists of the leadership and organizational structures and processes that ensure that the organization's IT sustains and extends the organization's strategies and objectives*."

Overall, IT governance lets you:

- Align IT strategy with business strategy
- Cascade strategy and goals down into the enterprise
- Organize the means to execute the strategy
- Implement a global control framework (e.g. COBIT[3])
- Measure the performance of IT systems

Now consider the complexity of the global enterprise, whether business or public sector administration, spread over increasingly broader geographies – and its required infrastructure. Physical distances between customers, workforces, business partners, factories, offices, etc are

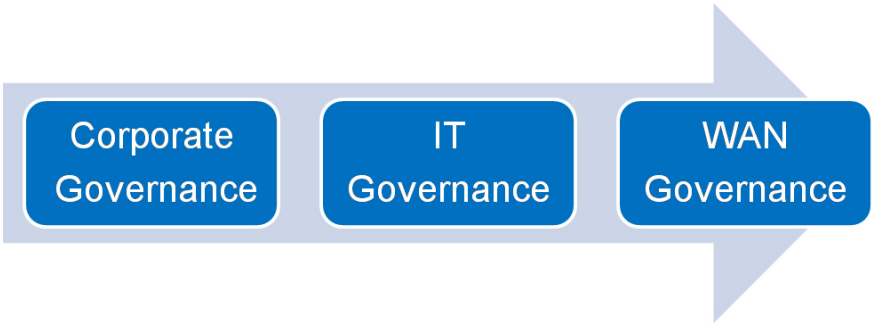
[3] *Control Objectives for Information and related Technology* is an IT governance framework and supporting toolset that provides a common language for understanding and communicating on the governance of Information systems while integrating other frames of reference such as ISO 9000 or ITIL.

greater than ever. Massive quantities of information must be exchanged daily between enterprise locations, remote workers and the public. The network has become such a vital enabler for enterprise performance that when the network goes down, it all goes down.

With today's sophisticated customer relationships, speed alone is not enough as a measure of effective network performance. As noted in an article published by *Network World, "Who cares that servers are responding quickly if users complain their applications are slow? And so what if a Web page loads in less than 2 seconds if it delivers the wrong content to the visitor? The user experience - employee or customer - with any given application now is the standard against which an IT department must measure itself."*[4]

Only a network that is rock - solid yet flexible enough to meet ever - changing operational requirements can support higher levels of enterprise performance. If the network isn't efficient, business isn't efficient, which makes the need for WAN Governance a very critical subject.

WAN Governance is a unique way of approaching the management of a wide - area network from the viewpoint of enterprise performance. Within IT governance, WAN Governance aligns network performance directly with IT performance in enabling corporate goals.



[4] Denise Dubie, "Performance management from the client's point of view," Network World, 11/11/2006, www.networkworld.com

The purpose of WAN Governance, then, is to:

- Implement IT aligned with business goals at the network level, making applications and data more effectively and easily available throughout the global enterprise
- Organize and manage resources to execute synchronized IT and WAN strategies
- Gain full control of network behavior
- Measure and monitor the performance of network applications
- Minimize network OPEX and CAPEX costs

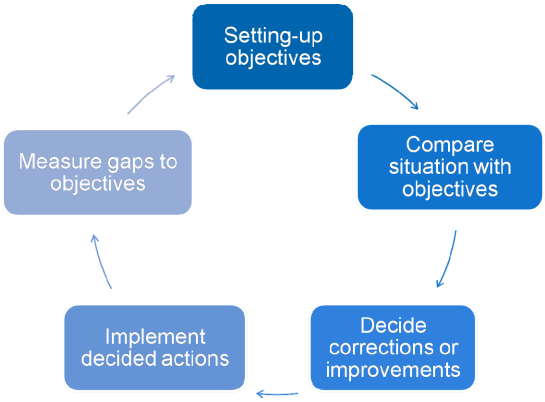
3. Principles of WAN Governance

WAN Governance lets you:

- Understand the nature of application traffic on the network
- Optimize and accelerate this traffic
- Manage application performance
- Simplify network operations
- Control network costs and leverage savings

Since the overall purpose is to fine - tune the WAN in a dynamic environment, WAN Governance is implemented as a closed - loop system where you can:

- Define goals (SLAs, budgets, etc.)
- Audit network performance to assess the current situation in comparison with goals
- Identify and take decisions on needed corrections or improvements
- Implement corrective measures and enhancements
- Measure network performance after corrections and enhancements to compare with goals



And, while WAN Governance is a closed-loop system, it requires regular maintenance in order to remain aligned. (Experience shows that a period of three months is appropriate for most organizations.)

4. How does WAN Governance improve business performance?

Effective IT systems enable innovation, collaboration, productivity, business processes and financial performance. Poor network performance hinders these functions — increasing business costs and forfeiting revenue opportunities. For example, consider how applications that are difficult to access or slow to respond hinder the objectives of an e - commerce website or a call center that handles thousands of customer service calls every day.

The ultimate goal of your IT function is to make business processes and workforces more efficient — to maximize their respective business value. WAN Governance creates the visibility and control of enterprise applications and usage to achieve this ultimate goal.

Consider how all employees are stakeholders in improving business performance – *and how effective WAN Governance contributes directly to meeting stakeholder needs*:

- **End Users** expect applications to be up and running 24/7 and responsive — as if they were the only user on the network.

  By guaranteeing application availability and responsiveness, WAN Governance improves worker productivity, customer satisfaction and relationships with partners who depend on access to your network.

- **Application managers** want to be sure that applications are their personal responsibility will be allocated the necessary resources at all times under all circumstances.

  WAN Governance ensures "rightsizing" of network bandwidth for applications to deliver intended performance objectives under any conditions.

- The **CIO** needs visibility into network traffic to understand how applications are actually used, their contributions to enterprise productivity and to plan projects for greatest business value.

  WAN Governance monitors applications performance and usage and dynamically manages availability. A wide range of customizable analytics - from executive dashboards to drilldowns into the underlying details of network performance at enterprise and site levels - guide decisions for creating greater value.

- **The CFO, COO, CEO and Board of Directors** need to understand the relationships and overall performance of business applications on networks to assess business value and how future IT investments will actually improve business results.

  WAN Governance provides analytics on current network performance and projected benefits of new network projects to speed issue/solution understanding and decision making at the highest levels.

THE TANGIBLE BENEFITS OF A STRATEGIC APPROACH

Beyond the value and productivity benefits to various stakeholders, WAN Governance delivers substantial OPEX and CAPEX cost benefits:

- **Reduced hardware and software costs:** Enterprises can consolidate their application servers or virtualize their desktop, enabling a more intensive usage of central hardware and licenses.

  WAN Governance guarantees excellent application performance to remote users, even with a complex application traffic mix and when users are far away from central sites.

- **Reduced telecommunications costs:** Bandwidth to run applications over networks is expensive. Simply adding bandwidth to increase network throughput for new applications is costly, time - consuming and often inefficient. Enterprises typically do not use business - relevant metrics to determine the need for bandwidth upgrades, and upgrades can be delivered without any alignment with enterprise - critical application requirements.

  WAN Governance provides unique network rightsizing views to determine the bandwidth levels required to fulfill a company's business performance objectives. This capability expands network capacity without having to add bandwidth. For many organizations, it enables an immediate network downsizing while still guaranteeing critical application performance or to postpone upgrades by a few additional years.

- **Agile, cost - effective IT transformations:** Data center consolation, desktop virtualization, cloud computing and SaaS, video conferencing and telepresence, video streaming and e - learning are examples of new IT projects that enterprises are looking to deploy for better employee and IT productivity and cost advantages. All impact network capacity and performance.

WAN Governance empowers such fundamental IT transformations to be implemented faster and more productively while guaranteeing end - user Quality of Experience (QoE). Benefits extend far beyond network costs. For example, a world - leading construction company consolidated data centers while guaranteeing network performance across its 1,000 world sites. The company eliminated substantial IT costs for servers, software licenses and maintenance without increasing network costs.

- **Reduced IT support costs:** Network changes typically require extensive manual labor to implement changes and deploy new business applications, as well as to maintain the network at a good level of performance.

  WAN Governance greatly reduces change management and global deployment costs. Ipanema's analyses of customer savings (Total Savings Impact – TSI) demonstrate that enterprises save at least one year of network budget for every three years of use (direct savings). Additionally, user productivity gain lead to even more impressive figures.

5. GUARANTEEING CRITICAL APPLICATION PERFORMANCE

Using the identification and classification capabilities of WAN Governance, any number of applications can be differentiated into application families and prioritized for a level of business criticality. For example:

- **TOP criticality:** SAP, Oracle, Citrix, VoIP, video conferencing
- **HIGH criticality:** LDAP, video streaming, SIEBEL, Salesforce, Intranet
- **MEDIUM criticality:** Lotus Notes, MS Exchange, Sharepoint, Internet
- **LOW criticality:** YouTube, FaceBook, Twitter

In a survey conducted by Ipanema Technologies of approximately 50 customers with a total of more than 10,000 network sites, organizations operate with an average of 69 applications on their networks. According to the Ipanema survey, which should be representative for most global organizations, TOP criticality applications account for only a small share of network usage - a mere 3% - whereas LOW criticality applications eat up more than half of network resources. WAN Governance should apply the

same granularity for network performance monitoring and analysis for each application to enable organizations to fully understand their applications traffic, however complex, and guarantee the availability of applications with greatest impact on business performance.

Network Applications by the Numbers
(Based on survey by Ipanema Technologies of approximately 50 customers)

69 Average applications per enterprise network

15 Families of applications for classification with each family containing 7 to 33 applications

4 Levels of application criticality: TOP, HIGH, MEDIUM and LOW

3% Network traffic VOLUME of CRITICAL applications

54% Network traffic VOLUME of LOW criticality applications, consuming most network resources

As delivered by Ipanema and its certified partners, WAN Governance guarantees availability of critical business applications within your enterprise. Support includes WAN/business alignment recommendations for WAN "rightsizing," which sets the appropriate bandwidths for each application SLA at each network site. It identifies servers that impair or could pose problems for optimal application performance across your network. This feature is of increasing importance due to the number of applications now used over corporate networks.

6. Setting Benchmarks: WAN Governance requires measurement of network and application performance

Whether implemented as an enterprise software solution or as a professional service, WAN Governance provides customers with C - level and detailed network and application dashboards and reporting that includes (but are not limited to):

- Top critical application analyses
- Top critical site analyses
- Service Level Management analysis against SLAs
- Key network performance indicators (KPIs), such as Application Quality Score (AQS) for data applications and Mean Opinion Score (MOS) for voice and video applications
- Other network metrics, such as bandwidth, delay, jitter, loss, round - trip transit time, server response time, etc.

C - level dashboards with streamlined metrics capture the network's business performance value and technical performance against SLAs. Just a small set of good KPIs is sufficient to give senior executives and managers an at - a - glance understanding of network performance to meet their respective decision - making needs. IT organizations also gain the detailed technical data on network and application performance to rapidly identify, analyze and correct issues.

Example KPIs

Data applications: Application Quality Score (AQS)

Application SLAs are enforced using global objectives.

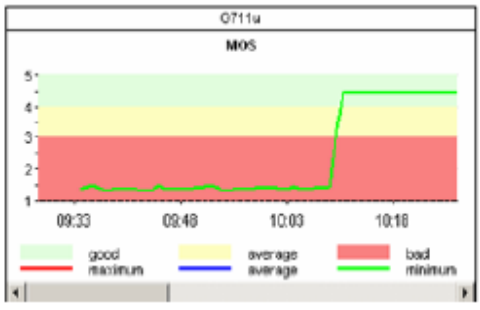
Service Levels are constantly monitored by comparing achieved end-to-end performance with objectives.

AQS is dynamically calculated using information on whether or not objectives for the delivered application have been reached.

Voice: Mean Opinion Score (MOS)

Calculates the network contribution to voice quality.

Service Levels are constantly measured by comparing the MOS end-to-end performance achieved against VoIP SLAs.



Source: Ipanema Technologies

7. Autonomic Networking: the technical foundation for automated WAN Governance

A global network must adapt to new business applications. This historically involves static, policy - based technologies and costly, manual network reconfigurations. Autonomic Networking is a patented, objective - driven technology developed by Ipanema Technologies that dynamically and automatically adapts to network changes. This global, automated WAN optimization and application performance management system enables high - speed, second - by - second decision making by distributed components that can exchange information quickly and accurately.

Most new IT projects do not require manual network reconfiguration with Autonomic Networking. For example, an enterprise rollout of Oracle Financials over an 80 - site network can be supported with one mouse click instead of a six - month network reconfiguration and troubleshooting project, dramatically reducing deployment time and cost.[5]

WAN Governance with Autonomic Networking is based on global network performance. Unlike WAN optimization technologies that require a physical appliance at each network location for local policy enforcement, Autonomic Networking uses physical devices at only a few strategic sites, such as datacenters and network locations which host servers, for global policy enforcement. These site components interact collaboratively and constantly to dynamically match network capacity with application demand. They ensure that pre - defined global network performance objectives are always reached.

Source: Ipanema Technologies

For example, all 1,500+ locations of a large European car rental company are managed (with excellent application performance) from devices at only 15 network sites using Autonomic Networking.

[5] *Compared to traditional solutions, Autonomic Networking delivers the lowest Total Cost of Ownership (TCO) for global WAN optimization.*

Source: Ipanema Technologies

WAN Governance with Autonomic Networking provides full control of a corporate network

WAN Governance with Autonomic Networking:

- Enables all network sites to operate as one
- Provides visibility for a clear understanding of application traffic on the network
- Guarantees the availability of applications to end users
- Optimizes and accelerates application traffic
- Simplifies monitoring and managing network operations for optimal performance
- Improves control of network costs

8. THE POTENTIAL OF WAN GOVERNANCE IN *YOUR* ORGANIZATION

Ipanema Technologies (www.ipanematech.com) offers unique tools to help organizations investigate the value of WAN Governance with Autonomic Networking for their enterprise:

- **SWAN** (Strategic WAN Acceleration Navigator), which is available online at www.swan-report.com, is an interactive web-based questionnaire that in minutes produces a customized analysis report for WAN optimization and acceleration.
- **Total Savings Impact** white paper available at www.ipanematech.com provides more insight into the ROI and TCO advantages that WAN Governance brings to network management.
- **TSI** (Total Savings Impact Estimator) provides a detailed assessment of the different economic aspects of WAN Governance at the enterprise-level. TSI supports both Ipanema as a Product and Ipanema as a Service implementation options. Customized studies are performed by Ipanema on simple demand at www.ipanematech.com.
- Ipanema's **WAN Governance blog** with up-to-date, non-promotional discussions about network optimization, acceleration and management topics is available at www.wan-governance.com

ABOUT IPANEMA TECHNOLOGIES

Ipanema develops solutions enabling any large enterprise to have **complete control of their global network.**

Our unique patented technology guarantees business application performance for each user, no matter where or when. It simplifies network operations. It reduces costs.

In a nutshell, we guarantee critical application performance and **make a 1,000 site network feel like one.**

For more information, www.ipanematech.com | Wan governance (blog) | Users Group (Linkedin) | Follow Ipanema (Twitter)