

# Succeeding with Application Delivery: A Network Professional's Guide

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## Goals and Non-Goals

### -Goals

- To discuss application delivery and the factors that are causing it to become more difficult
- To describe a framework for successful application delivery

### -Non-Goal

- To be definitive – organizations are unique and this is a broad, complex topic!

## Jim Metzler's Premise

If you work in IT,  
you either  
develop  
applications or  
you deliver  
applications

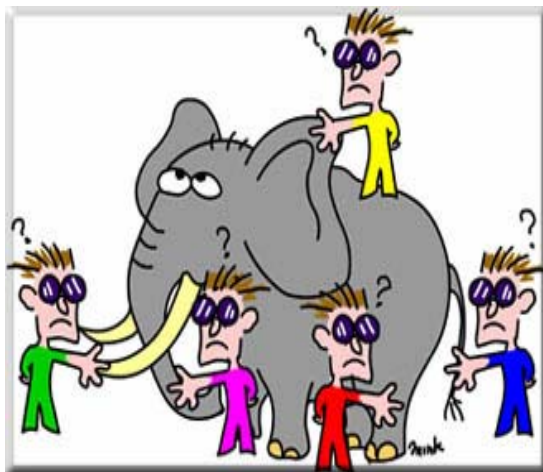


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## What is Application Delivery?

- In most of the articles in the trade journals, application delivery refers just to techniques to optimize the network and applications that transit the network



Graphic source: [http://www.pixelmonger.com/art\\_flavors.html](http://www.pixelmonger.com/art_flavors.html)

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## Application Delivery Framework

- There are four components of Application Delivery. They are:
  - Planning
  - Network and Application Optimization
  - Management
  - Control



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## The Applications Environment

- The CYA approach to application delivery is to focus on showing that it is not your fault that the application is performing badly. The CIO approach is to fix the problem.
- Successful application delivery requires that IT organizations are able to identify the applications that are running on the network and are also able to ensure the acceptable performance of the applications that are relevant to the business while controlling or eliminating applications that are not relevant.

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## The Applications Environment

- Some of the factors that impact application delivery:
  - Chatty applications
  - Application complexity: n-tier and Web services based applications
  - Webification of applications
  - Server and storage consolidation
  - Data center consolidation
  - Any to any traffic patterns
  - Distributed organizations

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## Planning

Planning functions include:

- Profile an application prior to deploying it
- Baseline the performance of the network
- Establish goals for the performance of the network and for at least some of the key applications that transit the network
- Model the impact of deploying a new application
- Identify the impact of a change to the network, the servers, or to an application
- Develop a network design that maximizes availability and minimizes latency

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## Planning

- It is extremely difficult to make effective network and application design decisions if the IT organization does not have targets for application performance that are well understood and adhered to.
- Hope is not a strategy. Successful application delivery requires careful planning coupled with extensive measurements and effective proactive processes.

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## Planning

- The ability to understand how to optimally improve the performance of an application requires a complete profile of that application.
- The role of the application delivery function begins early in the applications development cycle. Ideally, it begins at the architecture level.
- IT organizations need to modify their baselining activities to focus directly on delay.

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## Network and Application Optimization

The primary goal of network and application optimization techniques is to:

- Reduce the amount of data that is sent over the WAN
- Ensure that the WAN link is never idle if there is data to send
- Reduce the number of round trips, or application turns that are necessary for a given transaction
- Offload computationally intensive tasks from client systems and servers

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## Network and Application Optimization

Some of the primary network and application optimization techniques are:

- Compression
- Caching
- Differencing
- Protocol Acceleration
- Read Ahead
- Spoofing
- Server Load Balancing
- TCP and SSL Offload



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## Network and Application Optimization

- In order to deploy the appropriate network and application optimization solution, IT organizations need to understand the problem that they are trying to solve.
- In order to understand the performance gains of any network and application optimization solution, that solution must be tested in an environment that closely reflects the environment in which it will be deployed.

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## Management

Some of the key management tasks are:

- Discover what applications are running over the network and identify who is using them
- Gather the appropriate management data on the performance of the applications and the infrastructure that supports them
- Provide end-to-end visibility into the ongoing performance of the applications and the infrastructure
- Identify the sources of delay in the performance of the applications and the infrastructure
- Automatically identify issues and resolve them

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## Management

- IT organizations will not be considered successful with application delivery as long as long as it is the end user, and not the IT organization, that first notices application degradation.
- When an application experiences degradation, any component of IT could be the source of the problem.
- In order to be successful with application delivery, IT organizations need tools and processes that can identify the root cause of application degradation and which are accepted as valid by the entire IT organization.

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## Control

Some of the key control tasks are:

- Ensure the availability, security and performance of the desktop
- Authenticate traffic
- Provide call control and signaling functionality
- Classify traffic based on myriad criteria
- Prioritize traffic that is business critical and delay sensitive
- Perform traffic management and dynamically allocate network resources
- Affect the routing of traffic through the network

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## Control

- The performance of the desktop degrades with use due to the accumulation of unnecessary files and applications.
- The focus of the organization's traffic management processes must be the company's applications, and not just the megabytes of traffic traversing the network.
- QoS is required in those instances in which the network suffers congestion and there are business critical applications that are delay sensitive

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## Summary

- Ensuring acceptable application performance has become more difficult and this trend will continue
- Successful application delivery requires that IT organizations develop an integrated approach to:
  - Planning
  - Network and Application Optimization
  - Management
  - Control
- Successful application delivery also requires effective tools and processes and the development of trust between the application development and the application delivery functions

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# Thank You!!!

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- Unlike traditional fault-based network management approaches, NetQoS products enable you to take a *performance-first* approach to managing your network infrastructure by providing immediate answers to questions such as:
  - Are we meeting availability and response time [Service Level Agreements](#) (SLAs) for the ERP application?
  - What is the end-to-end response time for the brokerage office in Chicago?
  - Is the online store slow-down due to a network, server, or application problem?
  - Why are the users in Stockholm complaining of poor performance when no one else is?
  - How did the VoIP implementation affect network utilization?
  - What was the impact of the infrastructure upgrade on the patient admissions process?
  - What is the total infrastructure cost of providing service to the Asia-Pacific offices?
  - What is the performance impact of our move to Multiprotocol Label Switching (MPLS)?
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