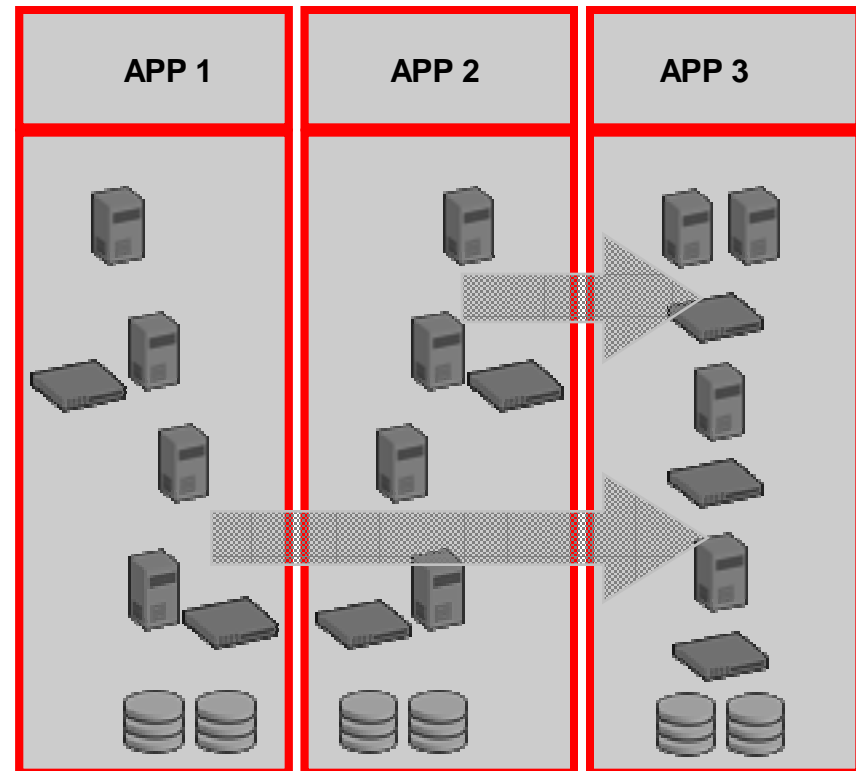


***The Case for Intelligent Control
In the Modern Distributed Data Center***

**Tom Bishop
Chief Technology Officer
VIEO, Inc.**

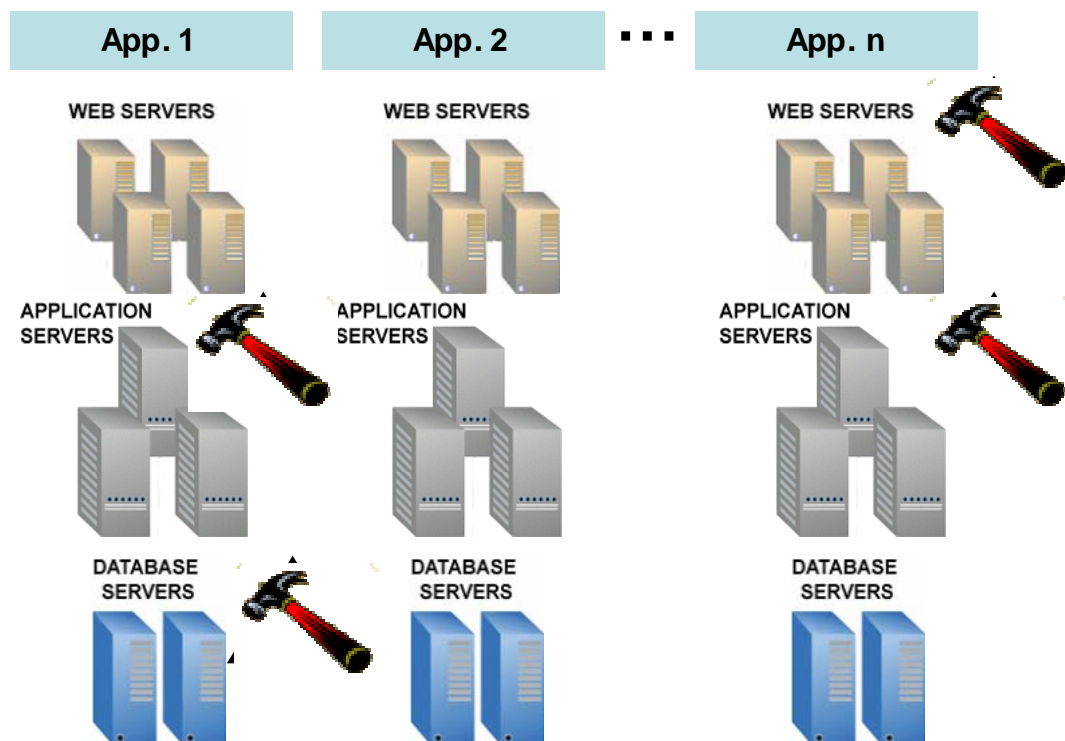
IT Management Paradox

- IT organizations are challenged to:
 - Reduce cost & complexity
 - Increase resource utilization
 - Increase business agility*Without increasing risk to the business*
- IT organizations are:
 - Reducing over-provisioning
 - Consolidating apps/infrastructure
 - Reducing human resources
- Impossible challenge: can't remove the insurance (extra IT resource and people) that you have and still protect your business.

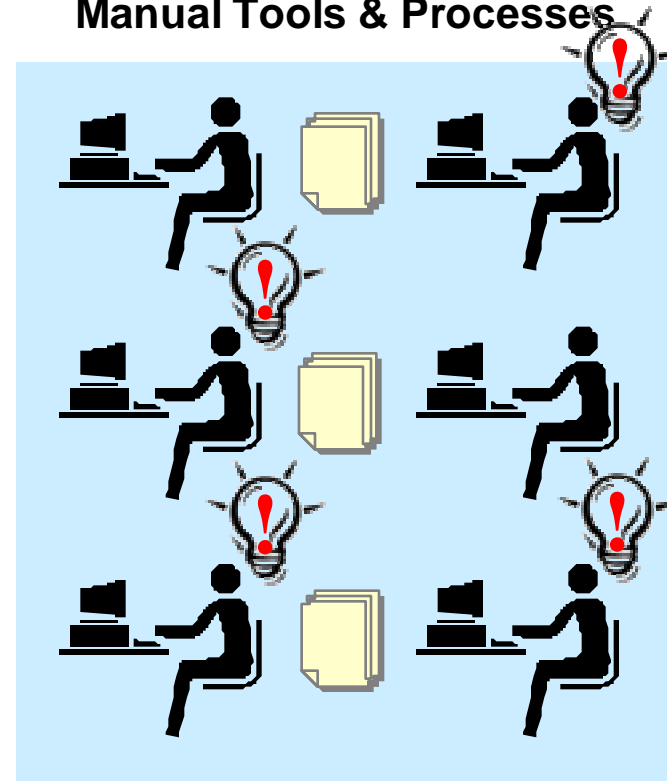


Today's "Control System"

Applications



Manual Tools & Processes



- **Measurement:** Flooded with inaccurate low-level element data, no end-to-end visibility into resource relationships and how changes impact application service levels
- **Analysis:** Performed by administrators with varying skill levels, areas of expertise, agendas
- **Control:** Performed manually or by rule-based scripts that must be maintained

Problems Summary

- Removing the expensive insurance (extra IT resource and people) used to ensure business certainty will increase business risk.
- Managing today's IT environments end-to-end, using today's "Control System" is very labor intensive, costly, and error-prone. The cost of IT management errors is becoming unacceptably high.

The current monitoring and networking tools weren't designed to solve these kind of problems.

You need an Intelligent Control System.

You have to manage IT from a business perspective and not an element perspective and do it in a far more automated way!

Rules for an Intelligent Control System

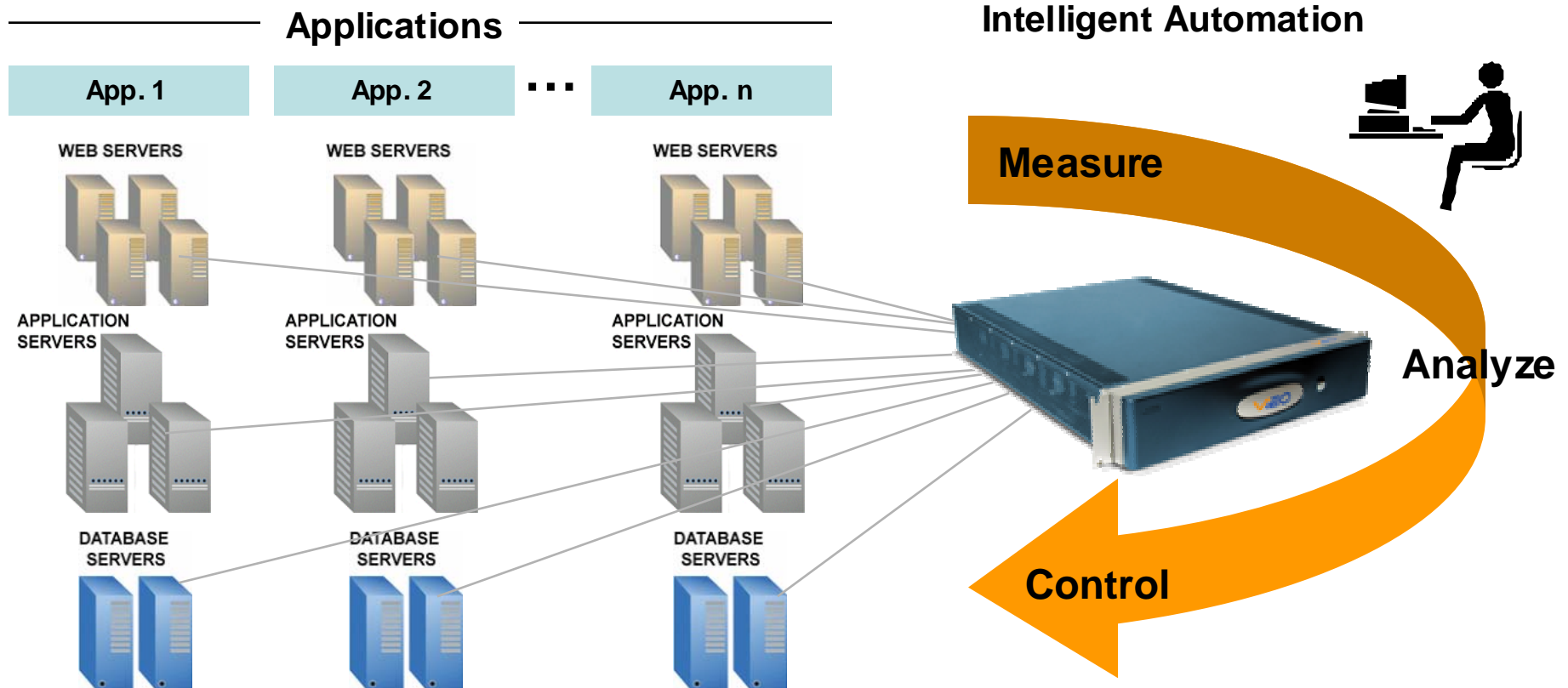
- Measure, analyze, and control the application environment
- Manage the aggregate behavior to SLAs
- Be immune to changes in the operational environment
- Priority access to/control over all application resources
- Optimize use of application resources (intelligently, dynamically, proactively)
- Introduce no security exposures
- Provide actionable information via integrated, intuitive display
- Manage heterogeneous environments
- Standards-based
- Quick and easy to install, configure, maintain, use

The Goal of an Intelligent Control System

Reduce IT costs while protecting the application service levels that impact business results

- Reduce over-provisioning, increase resource utilization, and lower management overhead without adding risk to your business
- Replace the current, very expensive control system with a more cost-effective, less error-prone, automated control system that ensures applications services levels support business demands

VIEO's Intelligent Control System



- **Measurement:** Reliable, real-time end-to-end visibility into the application infrastructure
- **Analysis:** Automatic determination of relationships between resources and their effects on application service levels
- **Control:** Reliable, real-time control (automatic or manual)

Management in the Interconnect

Rationale

- Visibility
 - You can't measure or control that which you can't see
- Stability
 - As resources fail or dynamically change (adaptive), we need to ensure management remains unaffected
- Measurement
 - Critical that the measurement of resources is timely and accurate
- Control
 - Critical that the control over the resources is reliable, timely, and accurate

*Management in the Interconnect
is the only way to deliver an intelligent control system*

Comprehensive Integration

- **Element monitoring**
- **Application monitoring**
- **Configuration management**
- **Provisioning**
 - Servers
 - Application bandwidth (network)
 - Software resources (user connections, threads, database connections)
- **Automated troubleshooting**
 - Root cause analysis
 - Performance tuning/recommendations (analytics)
- **Dynamic, application service level management**
 - Manually
 - Automatically

Integrated to manage your application infrastructure from a business perspective, not an element perspective

Significant Differences

Intelligent Control for Business Certainty

- Application service level focus
- Integrated, end-to-end, heterogeneous
- Reliably and accurately measure and control IT resources
- Intelligently optimize the use of IT resources to satisfy real-time business demands
- Function in the face of change; infrastructure failures or adaptive operations
- Perform management operations (measure, analyze, and control) without consuming critical application infrastructure resources
- Simple to buy and deploys in a day

VIEO's Five Laws of Intelligent Control Systems for IT Management

1. Any automated action taken by an intelligent control system should do no harm to the managed environment.
2. An intelligent control system must obey manual direction give in to it by authorized users.
3. An intelligent control system should only take automated action that have a reasonable chance of having a positive impact on the managed environment..
4. Any automated action taken by the intelligent control system should not come as a surprise to its users.
5. An intelligent control system must protect its own existence as long as such protection does not conflict with the First, Second, Third, or Fourth Laws.

The Case for Intelligent Control

Reduce IT costs while protecting the application service levels that impact business results

- Replace the current insurance with more cost-effective insurance and not add risk to your business
 - Adaptive, shared Infrastructure
 - Optimal resource utilization
 - Dynamic application service level management
- Replace the current, very expensive control system with a more cost-effective, less error-prone, automated control system
 - Accurate measurement
 - Real-time analysis
 - Reliable control
 - Minimal overhead