Avaya / Cisco
IP Telephony Comparison Points

IP Telephony **Contact Centers** **Unified Communication** **Services**

Avaya obtained the information contained in this presentation from industry consultants, customers, published research, trade journals, and internal research. To the best of our knowledge, this report is based on the most current information available. Although every effort has been made to ensure freedom from errors, Avaya Inc. is not responsible for the accuracy of all the information contained in this presentation.

Avaya Top Ten Advantages

1. Flexible architecture and migration strategy

– Your Path, Your Pace, Your Choice with full support for migration and multi-vendor environments—while maintaining a robust feature set, scalability, and reliability of current systems.

2. Investment protection

– Our evolutionary approach helps customers protect investments and features while providing robust front-ending for other vendor environments—customers can even replace CallManager and reuse Cisco IP phones—in contrast to Cisco's infrastructure focus that precludes IP telephony innovation.

3. Interoperability

– Avaya offers easy integration and multi-vendor support for Cisco, Extreme Networks, and other data networks—multi-vendor voice via QSIG and applications via APIs—supporting the multi-supplier model favored by 86% of senior IT executives surveyed by *ComputerWeekly*.

Avaya Top Ten Advantages

4. Rich, robust features

– Avaya MultiVantage Communications Applications offer over 700+ features, from call processing to collaboration to mobility—unlike Cisco, which requires an extra server for call coverage.

5. Reliability and manageability

– Avaya has fewer points of failure—fewer servers and fewer components per installation—as well as redundant architecture and unified management, proactive monitoring, and certification by the Department of Defense joint interoperability testing center.

6. Mobility

– With Avaya Extension to Cellular, the Avaya/Motorola/Proxim Seamless Communication Solution, and Avaya Unified Communication Center Speech Access, Avaya can bridge distance, Wi-Fi and cellular networks, and device types to deliver the MultiVantage Communications Applications suite to remote and mobile workers.

Avaya Top Ten: Advantages

7. Media encryption

- With end-to-end encryption for multiple IP phones and functions, even through gateways, Avaya can protect business communications.

8. Contact center solutions

- The standard in contact center technology, Avaya solutions offer exclusive functionality and built-in ACD that improves service levels and revenues from small business to FORTUNE® 500 leaders.

9. Accessibility

- Avaya applications support all accessibility needs—including TTY over IP, mixed TTY and voice messaging, and Unified Communication Center Speech Access.

10. Services surround

- Avaya provides a single point of contact for all services—planning, design, implementation, Managed Services, patented Avaya EXPERT Systems^{SM} Diagnostic Tools, and more—for multi-vendor and migration technologies.

At a Glance: Unequal Opponents

Avaya Communication Manager	Cisco CallManager
Supports 700+ features	Claims 158 features
Supports 36,000 phone sets (analog, digital, or IP) and a maximum of 12,000 IP sets	Claims support for 30,000 IP sets per cluster and 7,500 per server
Linux-based appliances with built-in firewall	Microsoft® Windows® 2000—no Linux option
Bridging and extensive call coverage paths built in	Some coverage and intercom features available with additional applications
Whisper page: discreet notification	Not available
Do-not-Disturb, night service	Not available
Extension to Cellular	Not available
Optional security for Meet Me conferencing—any phone, anywhere	Meet Me conferencing without security codes—and only via an IP phone

Apples to Apples: Strategy

Avaya Communication Manager	Cisco CallManager
Starts with a rich, full-feature enterprise telephony suite	Starts with Cisco's acquisition of a company with a small IP-PBX solution
Support for IP is added	That small solution is scaled to handle large enterprise telephony
Works within multi-vendor, voice-friendly Quality of Service (QoS) network environment	Approach is single-vendor
Favors migration over forklift	Favors forklift

Apples to Apples: Scalability

Avaya Communication Manager	Cisco CallManager
Supports 36,000 digital endpoints on one Avaya S8700 Media Server	Requires *at least 8 servers in a cluster* to support 30,000 endpoints
Up to 12,000 IP endpoints per server	Call Managers required: 4 primary, 2 backup
Up to 300,000+ busy hour call completions (BHCC) With 100% Call completion	250,000 BHCC per cluster* *NO Documented testing on call completion numbers or BHCC.

Apples to Apples: Applications
IP Telephony

Avaya Communication Manager	Cisco CallManager
More than 700 software features: • Coverage path, Time Of Day Routing, Station Lock, Malicious Call Trace with auto-record, Service Observing	A fraction of available Avaya features: • Some named the same, but not equal in functionality • Requires 3-rd party applications for some basic features
Full feature transparency: • Across different platforms of soft phone, digital phone, IP phone	Fewer features supported in soft phone than hard phone
Full functionality, flexibility, ease of use, and training	Lacks traffic reports and queuing for administered hunt groups—station duplication is a multiscreen operation, system and group speed dialing is labor- and time-intensive

Apples to Apples: Applications
Contact Center

Avaya Communication Manager	Cisco CallManager
Incorporates features that are used in 80% of large contact centers	Is limited by Cisco's "voice is data" approach—no holistic strategy
Integrated ACD (call center) software—built-in functionality at no extra charge	Additional cost for functions like call handling, queuing, announcements, etc.
Continuous "stateful-awareness" of all calls in progress / in queue, etc.	Outdated decision makers used to identify call arrival and center resources
Enhanced call routing	• No predictor to identify available resources • No match rate methodologies to ensure best-client-to-best-resource pairing • Agent selection based on historical data only—truly predictive algorithms not available for ACD routing
Dynamically engage agents before a service level objective is in jeopardy	Outdated overflow methodologies to deal with peak times

Apples to Apples: Phones

Avaya Communication Manager	Cisco CallManager
Avaya IP Softphone:	**Cisco Softphones:**
• Supports dual connection for better work-at-home audio	• Must put audio path into IP mainstream, lowering quality
• IM and presence notification with SIP technology	• Do not support SIP technology
Avaya Softconsole™:	**Cisco attendant console:**
• Supports full attendant functionality	• Limited features, requires IP hard phone
• Customizable	• Maximum five speed dials (28 buttons can be added with optional two-speed dial extender purchase)
• IP version can use PC audio	
Flexibility:	**Limitations:**
• Media encryption is supported on all Avaya IP phones, conversations on TDM/analog phones, and all gateways	• Only high-end 7970,7960, and 7940 phones support encryption.
• All IP phones support 802.3af PoE	• Only 7970,7971 support 802.3af
• Detailed screen functionality and customization without web services.	• Requires web services to be enabled on phone for customization & reporting

Apples to Apples: Reliability
And Survivability

Avaya Communication Manager	Cisco CallManager
Large scale: • Avaya S8700 Media Server provides redundancy through single dual server configuration • Call preserving, instantaneous failover	Large scale: • Redundancy via eight clustered servers • Connection preservation—no features at time of failure • Quick failover and recovery (35 seconds)
Small scale: • Local Survivable Processor (LSP) supports calls/features for 450 phones with 700+ features • Call center Support	Small scale: • Survivable Remote Site Telephony (SRST) is router based and provides less features. • No call center support

Apples to Apples: Management
And Administration

Avaya Communication Manager	Cisco CallManager
Verify busy status—and eliminate resource failure as the cause	Not supported
Securely test a host of system functions	Not supported—IP alarming, fragmentation testing, traffic reports available at additional cost
Schedule command execution at specific time, or periodic frequency	Not supported
UNIX or Linux based for larger systems: • Upgrade via single GUI, single file • Fewer points to touch • Multiple partitions for easy recovery • Integrated call center software • No operating system knowledge or application installation required	Windows 2000 based: • Not an appliance • Each server requires separate upkeep • Third-party virus scanning program required for security • Host intrusion detection included

Apples to Apples: Management
And Administration

Avaya Communication Manager	Cisco CallManager
Average management tasks:	Average management tasks:
• Included in basic features or software options	• Require numerous patches and upgrades
• Require two servers	• Require up to nine servers
Patch needs over a one-year period:	Patch needs over a one-year period:
• Two patches (128 MB)	• 19 patches (1375. 574 MB)
• 25 minutes to download	• 195 minutes to download

Avaya = less to manage, less cost, less downtime

Apples to Apples: Mobility

Avaya Communication Manager	Cisco CallManager
Extension to Cellular bridges calls to desk phone to user's cellular phone	Personal Assistant offers basic "Find Me / Follow Me" functionality, but can't ring desk and mobile phones simultaneously or support CallManager features in the remote phone
Avaya/Motorola/Proxim Seamless Mobility offer • Full mobility outside the enterprise with Motorola device • Seamless transition to wireless LAN when coming into enterprise • Seamless handoff between wireless LAN access points within enterprise • Secure, always-on access to applications mobile users need	No competitive offers • Personal Assistant does not allow remote phone users to transparently transfer a call back to the desk phone and pick it up (an Extension to Cellular feature) • Also no capability to extend a call transparently from a desk phone to a mobile phone (another Extension to Cellular feature)

Apples to Apples: Security

Avaya Communication Manager

- e911 built in, works equally well with any IP infrastructure
- Crisis alert to stations, attendant, pager supported for 911 notification
- End-to-end media encryption for all endpoints supported
- Locking and password access supported for endpoints
- Security violation notification supported
- Optional security code for Meet Me conferencing access supported

Cisco CallManager

- Requires a separate server for e911
- No standard crisis alert feature
- Only high-end 7970,7971,7960, 7940 IP phones support end-to-end media encryption
- Locking endpoints, security violation notification, optional conferencing security code not supported
- IP alarming, fragmentation testing of routers, traffic reports available at additional cost

Apples to Apples: Business Continuity

Avaya Communication Manager	Cisco CallManager
Avaya S8300 Media Server / G700 Media Gateway system maintains all features when connectivity is lost to central server	Significant error rate in anything other than a loss-free network with G.711 encoding
System administrator decides when system is restored to normal operation	Service automatically switches back to central site once connection is reestablished • Testing/additional inspection not possible
Avaya Multi-Tech MultiVoIP Gateway available for small locations (less than 10 users)—where less than full feature functionality is required	Failure of SRST router—loss of all features and information • Latest SRST only runs on newer routers • Limited SRST capabilities depending on router model

Apples to Apples: Accessibility

Avaya Communication Manager	Cisco CallManager
Robust TTY over IP capability	Significant error rate in anything other than a loss-free network with D.711 encoding
TTY devices supported to work alongside IP or DCP phones	Does not support simultaneous use of TTY device and IP phone
Supports same phone number for mixed TTY and voice messaging	Requires separate telephone numbers for TTY and voice
Supports special software for visually impaired users	Requires third-party software for visually impaired users

Apples to Apples: Services

Avaya Global Services	Cisco Services
Over 7,000 employees in 93 countries around the world—including 24 Network Operations Centers and 13 Technical Support Centers	6,500 employees (in Q1 '03) in four primary organizations, and six U.S.-based development and demonstration centers
Planning and design, implementation, maintenance, and sourcing—for multi-vendor and migration technologies	Advanced Services, Cisco Technology and Networking Support, and Technical Support Services—IP only
Avaya Warranty and Maintenance Agreement: 24-hour remote monitoring, diagnostics and resolution, intelligent dispatch 8 a.m.–5 p.m. for Avaya IP telephony hardware and software	Cisco warranty: 90 days on software (7800 series media convergence servers), one year on ICS 7750 IP phones and gateways—but no TAC or on-site support
24/7 uplift provides out-of-hours dispatch on major alarms and customer-initiated trouble tickets	Cisco SMARTnet® provides 24-hour technical assistance from its Technical Assistance Center via telephone or Web—and advance hardware replacement by mail (SMARTnet on-site technician replaces part)

Apples to Apples: Services

Avaya Global Services	Cisco Services
Enhanced IP Support offer (during and after warranty) includes support even when Avaya hardware or software faults are not detected, basic WAN analysis, review of hardware configurations and network topology, and network emulation in a lab	Remote monitoring via channel partners only
Quarterly security advisory, toll fraud indemnification, preventive maintenance, and disaster recovery plan included in the Avaya Maintenance Agreement	No security advisory, toll fraud indemnification, on-site preventive maintenance, or disaster recovery plan available with Cisco warranty or SMARTnet offers
A complete service solution from a single source—single point of accountability convenience, even when partner network provides services	Heavily partner-dependent for most services—from proactive monitoring to regular maintenance—with multiple points of contact and accountability

Meeting Business Challenges
Do More with Less

Avaya Communication Manager

Increase Productivity

Avaya Extension to Cellular and Avaya IP Softphone improve mobile productivity.

Avaya Communication Manager

Leverage Assets, Reduce Networking Costs

QSIG Networking supports full features in multi-vendor networks, using existing assets.

Meeting Business Challenges
Increase Operational Efficiency and Effectiveness

Avaya Communication Manager
Improve Resource Distribution through Convergence

Avaya MultiVantage Communications Applications allow cost-effective, consistent distribution of applications like Unified Communication, Speech Access, and Contact Center.

Avaya Communication Manager
Optimize Network Performance and Investments

Tools like Avaya Integrated Management provide real-time and historical statistics to ensure optimal performance.

Meeting Business Challenges
Drive Revenue and Serve Customers Better

Avaya Communication Manager

Increase Customer Satisfaction and Buying Loyalty

Avaya MultiVantage Software allows customization of contact center capabilities to meet unique business and customer needs.

Avaya Communication Manager

Leverage Business Intelligence to Increase Segment Revenues

Integration with leading CRM packages enables maximum value from customer information, while comprehensive reporting adds insight.

Cisco Claims

- **"A single-vendor approach has a lower TCO."**
  - Infotech says 57% of enterprises have multi-vendor environments.
  - *ComputerWeekly* survey of 800 senior IT executives:
    - 58% had negative experiences with single supplier lock-in
    - 35% had to purchase products that did not meet their needs
    - 18% had to purchase unnecessary hardware
    - 67% said they had experienced pressure from vendors to buy only from them
  - Avaya solutions work in multi-vendor environments, require no forklift, and use lower-cost (and lower-downtime) Linux operating systems.

Cisco Claims

- **Cisco's new strength in managed services**
  - Acquiring NetSolve only gives Cisco remote monitoring without intelligent dispatch—does not monitor call processing or support out-of-band communications (modems).
  - Avaya offers a full continuum of Managed Services, from remote network operation support to outsourcing and hosted solutions, and expertise from planning to design to implementation and operation—all with global support.

- **Recent claims to world-leading security**
  - Avaya offered manageable media encryption for IP telephony two full years before Cisco—Miercom characterizes the Cisco solution as "mind boggling" in its complexity.

- **Recent "front ending" solution announcements**
  - Is Cisco realizing the error of its ways? Avaya is already network and vendor neutral, and it has the Interoperability Test Lab.

Avaya Counters to Cisco Claims

- **"Hybrid systems cannot support more than voice."**
  - Avaya provides Voice, Video and conferencing/collaboration at high quality in hybrid and IP environments.

- **"Avaya may not be financially stable."**
  - We have seven consecutive quarters of profitable growth, a strong balance sheet, and Q4 results that beat Wall Street estimates.

Top Ten: Questions That Clarify

- **Flexible architecture and migration strategy**
  - "Some customers don't want to put all their eggs in one basket and prefer to have a hybrid solution where they can mix TDM with the benefits of IP. Can Cisco provide a solution like this?"

- **Investment protection**
  - "What is the upgrade path for existing phones? What happens to current Cisco investments when Cisco moves to the UNIX/Linux platform? Will new server purchases or management of multiple platforms be required?"

- **Rich, robust features**
  - "When will CallManager stop relying heavily on third-party applications at additional cost to achieve feature parity?"

Top Ten: Questions That Clarify

- **Interoperability**
  - "Are all of Cisco's telephones compliant with the 802.3af inline power standard? What is the upgrade path? Will the customer get locked into a Cisco network?"

- **Reliability and manageability**
  - "If a CallManager fails or its services are shut down for upgrades, do telephones lose all features? How can it simplify management when clusters require independent management? Why do you have to post patches every month? Are you certified to supply IP telephony to the U.S. government?"

- **Mobility**
  - "Do you have the ability to link cellular phones to CallManager phones in order to create a true "one number service"? Is it native to CallManager or will it require additional products and servers? Why can't Personal Assistant support transparent transfer from a mobile phone to a desk phone, and vice versa?"

Top Ten: Questions That Clarify

- **Media encryption**
  - "Which telephones support media encryption? Which gateways support it? Is it only supported from IP phone to IP phone?"

- **Contact center**
  - "Where are calls queued? Can changes be easily made by contact center managers or supervisors, or do they need to be performed by IT or telecom staff?"

- **Accessibility**
  - "Does Cisco comply with Section 255 of the Telecommunications Act, Section 508 of the Rehabilitation Act Amendments, and the ADA Titles II, III, and IV? Will it state its support in writing?"

- **Services surround**
  - "Can Cisco provide me with a single point of contact and sourcing for all my service needs?"