

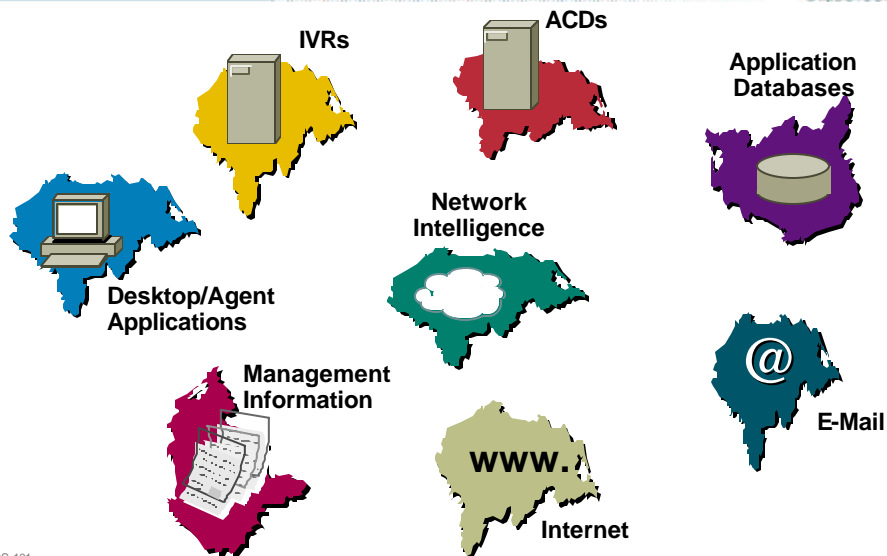
• NETWORKERS



Building a Global Virtual Contact Center

Session ICS-101

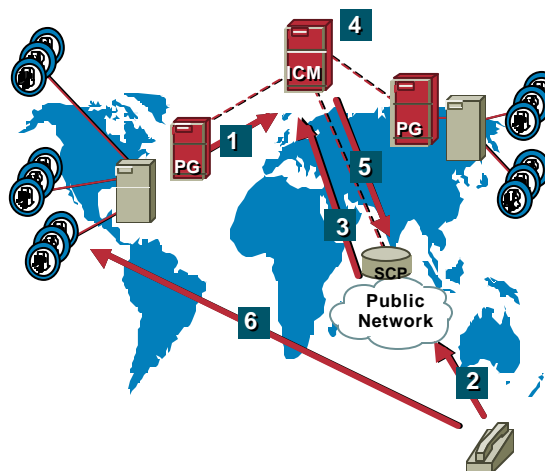
Contact Center Islands of Technology



Virtual Contact Center Basics

Cisco.com

- Status data sent from ACDs
- Call arrives in network
- Network queries ICM
- ICM matches call to agent
- ICM responds to network query
- Call delivered to selected agent



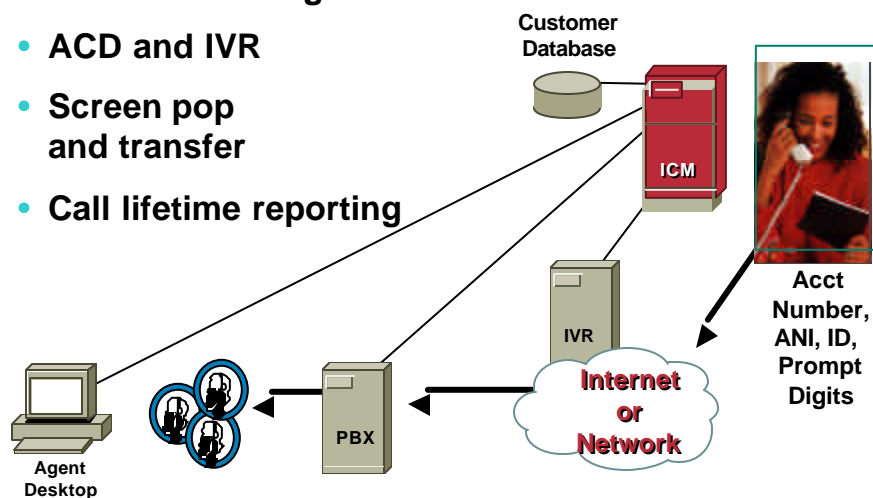
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Enterprise CTI for Virtual Call Centers

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- Inter-site routing
- ACD and IVR
- Screen pop and transfer
- Call lifetime reporting



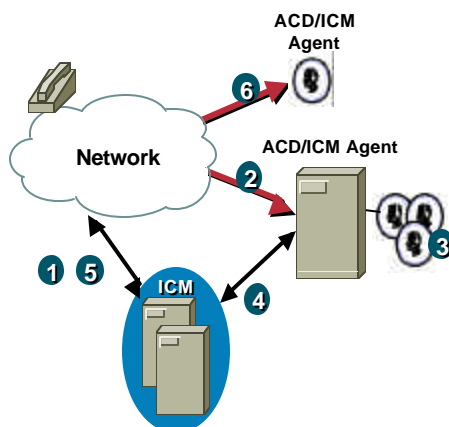
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Network Transfer (IP and TDM)

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- Pre-routed call gets network identifier
- Call delivered to agent
- Agent requests transfer
- Transfer sent to ICM
- ICM uses network ID to request transfer
- Call is re-routed (with data)

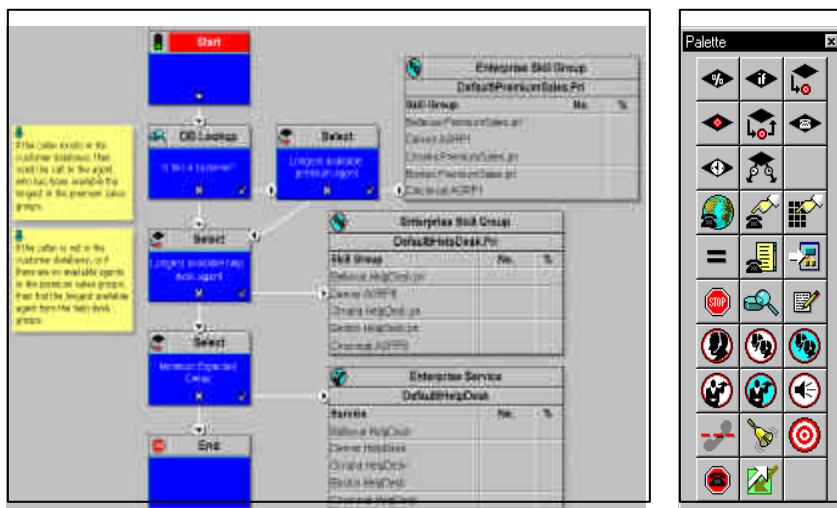


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Virtual Contact Center Routing

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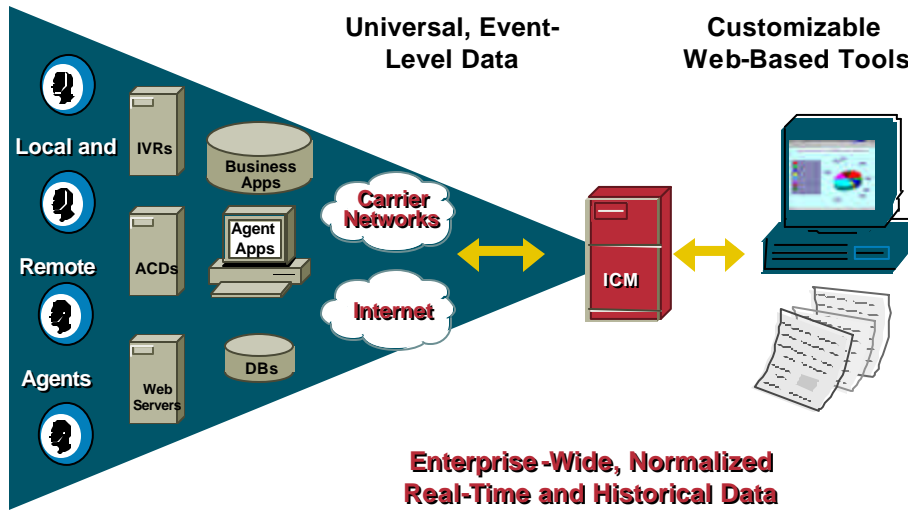


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Virtual Contact Center Reporting

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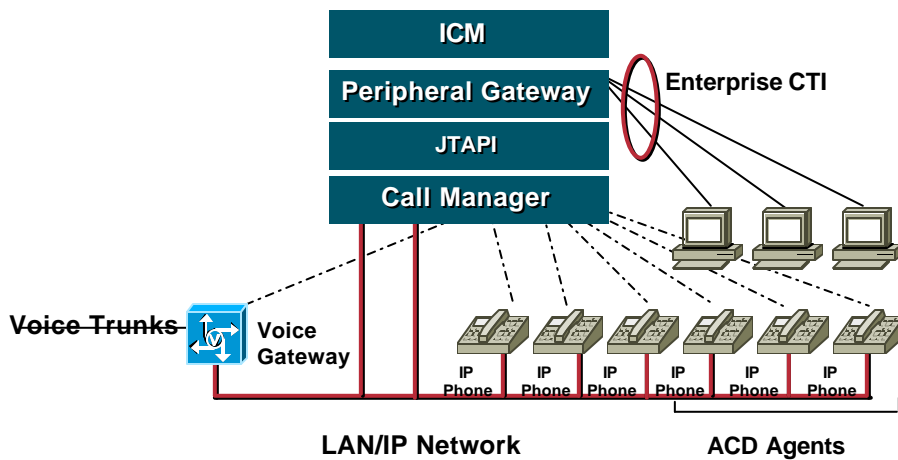


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IP Contact Center

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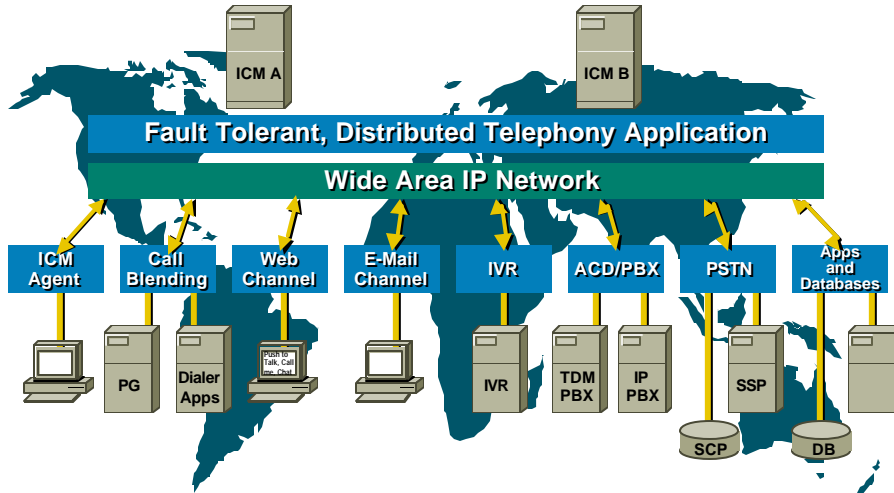


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Contact Center Channels

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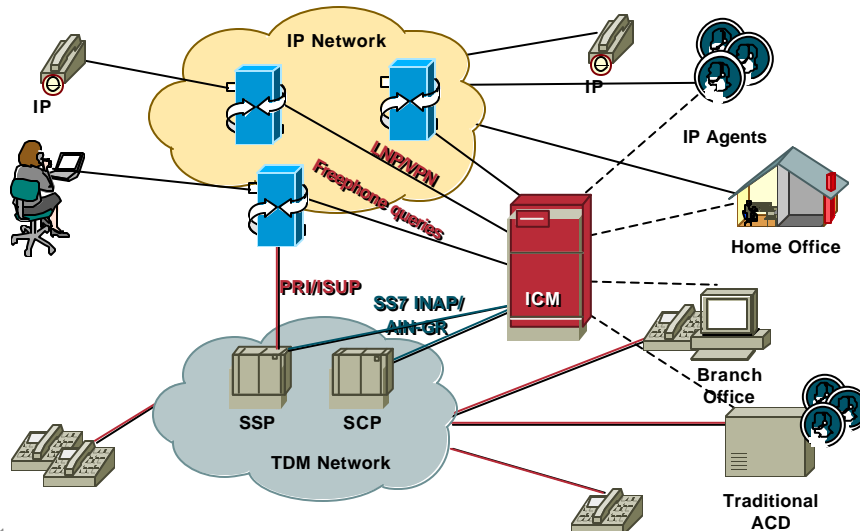


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Contact Center Convergence

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Options for Global Contact Centers

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- **One ICM controls the world**
 - Single configuration
 - Partitionable within an organization
- **Multiple ICMs**
 - Overflow/handoff routing
 - Autonomous operation
- **New architectures under IP**

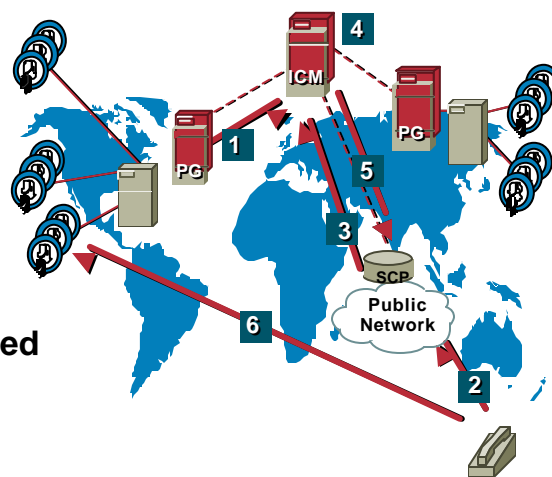
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One ICM—Multi-National Carrier

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- Routing is same as domestic case
- Carrier does the integration
- Options depend upon region covered



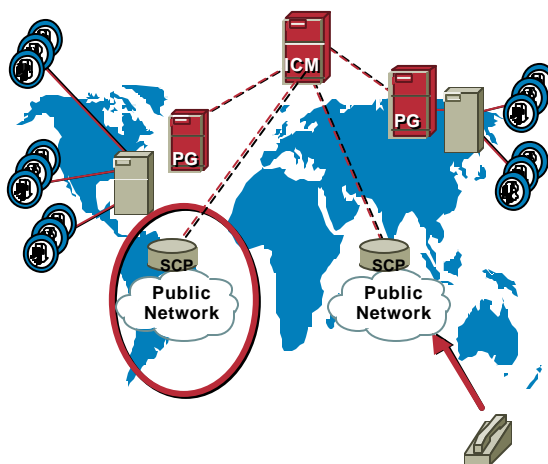
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One ICM—Multi-National Carrier

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- ICM interfaces to multiple carriers
- Requires open routing interface from carriers
- Also requires careful engineering



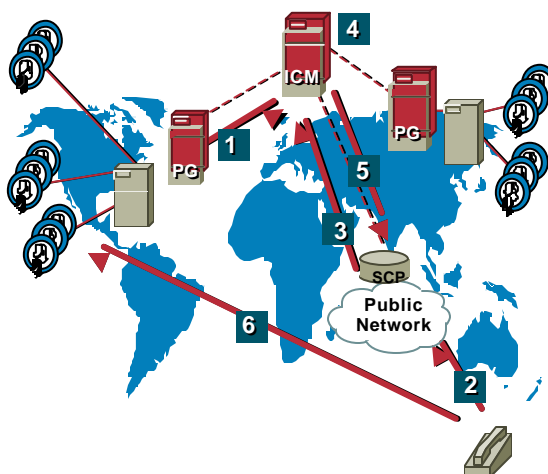
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Open Routing Interface Issue

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- Open routing interfaces are rare (but coming) outside the US
- Depends upon carrier business relations



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Engineering a Multi-Carrier System

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- **Latency**
 - 150 ms roundtrip from speed of light
 - What are individual network requirements?
- **Data communication**
 - 100 ms roundtrip for post-routing
 - 400 ms roundtrip for pre-routing only
 - Detailed planning needed for admin data
- **System capacity (single platform)**
 - 700 calls per second
 - Multiple reporting subsystems
 - Should not be an issue

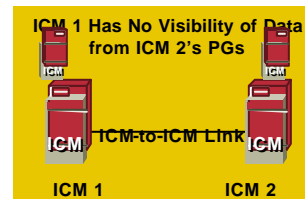
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ICM-ICM Communication

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- **Supports call transfers between ICMs**
 - Call context is preserved and transferred with the call
- **Technically also support pre-routing between ICMs**
 - However, delay issue may put very strict limitations on possibilities
- **ICM-to-ICM DOES support**
 - Forwarding a route request with context from one ICM to another
- **ICM-to-ICM DOES NOT support**
 - Any other kind of data sharing between ICMs

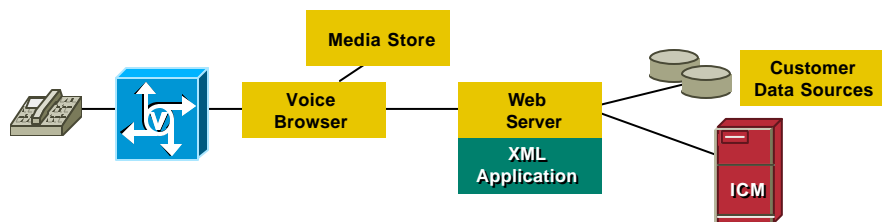


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Internet Service Node Architecture

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- An IVR is just a Web app with a special (“voice”) browser that renders Web pages as voice
- Scaling, fault-tolerance, file distribution are standard Web issues with standard solutions
- With gateways and browsers in the network, the network itself enables IVR service for carrier or customer Web applications

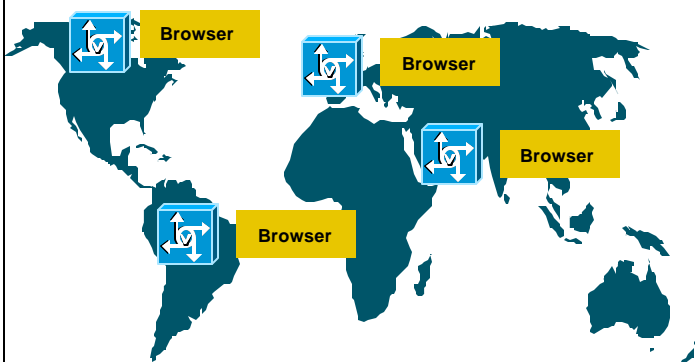
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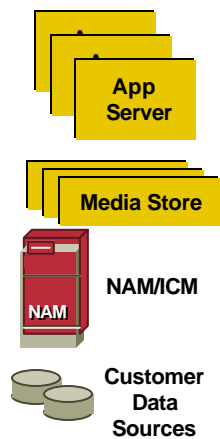
ISN Networking

Cisco.com

Network Infrastructure
(Carrier, ASP, or Enterprise)



Service Control
(Per Customer)

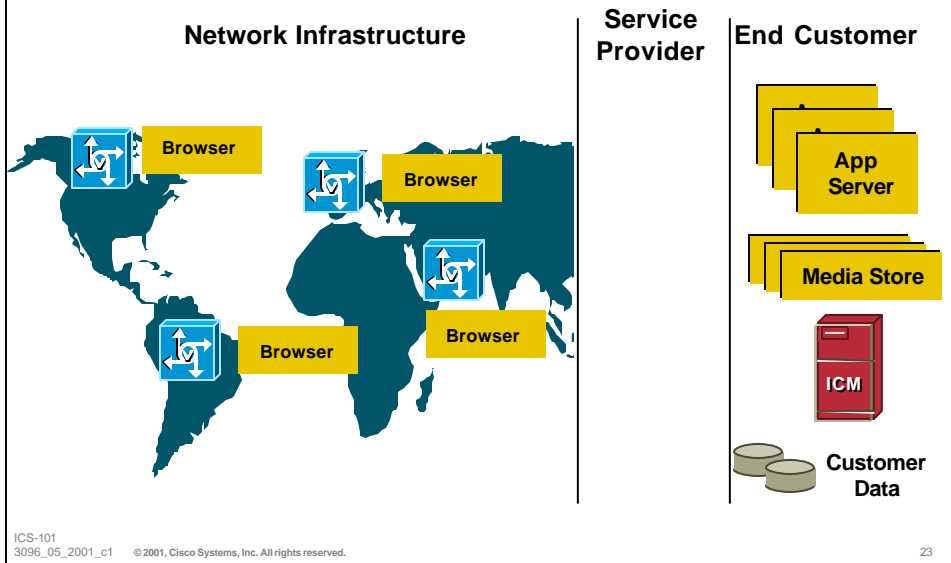


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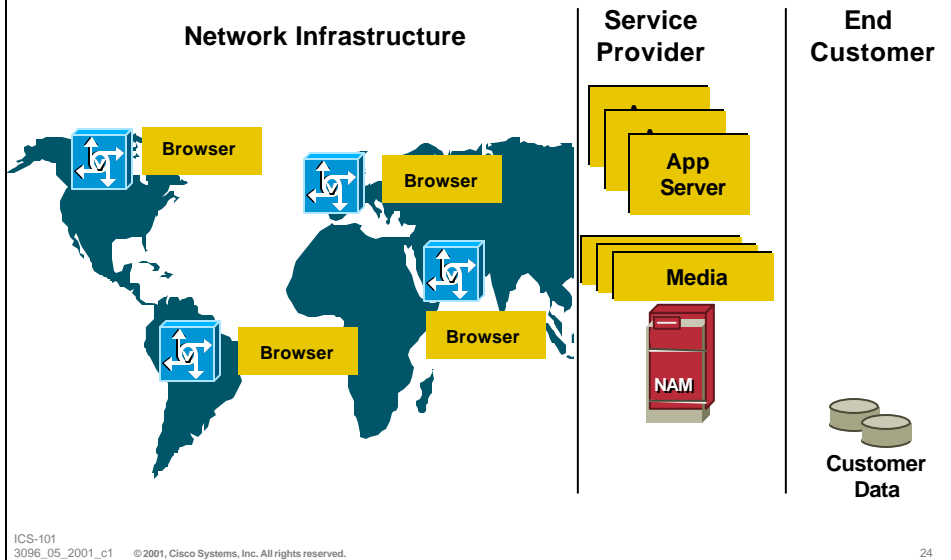
ISN Options

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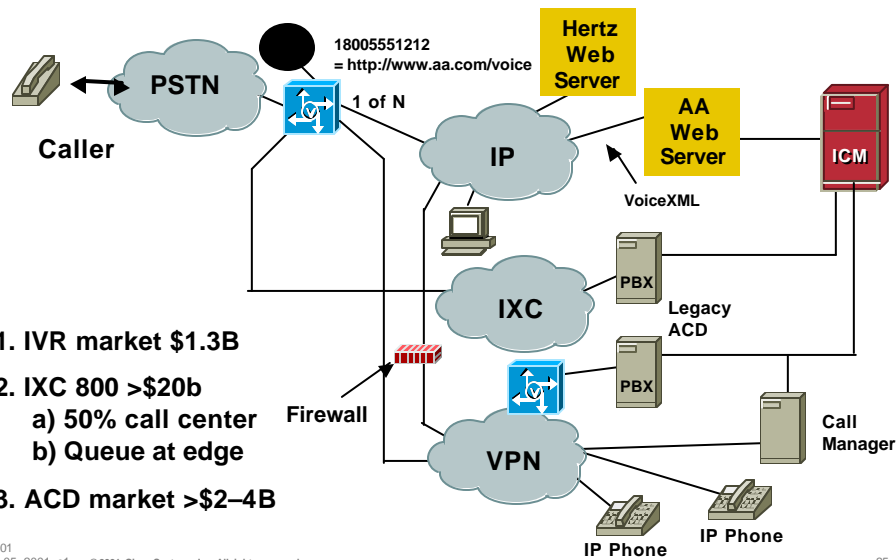
ISN Options

Cisco.com



ISN Impact

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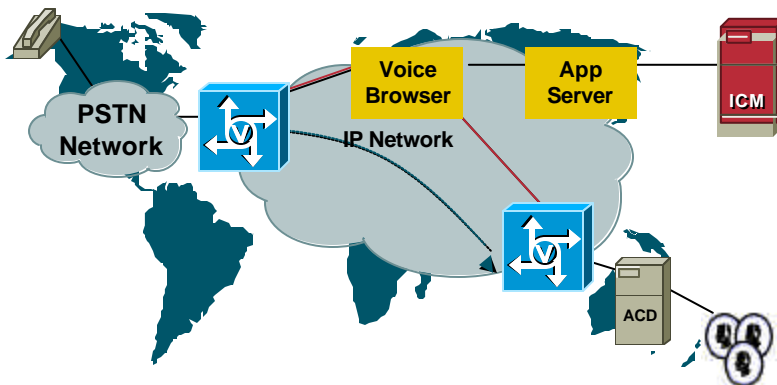
1. IVR market \$1.3B
2. IXC 800 >\$20b
 - a) 50% call center
 - b) Queue at edge
3. ACD market >\$2-4B

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Network-Wide ISN Switching

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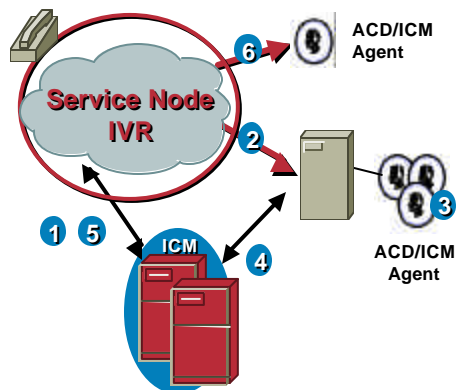
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Network Transfer on IP

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- Global queuing and routing in the IP cloud
- Whole IP network becomes a user-controlled switch

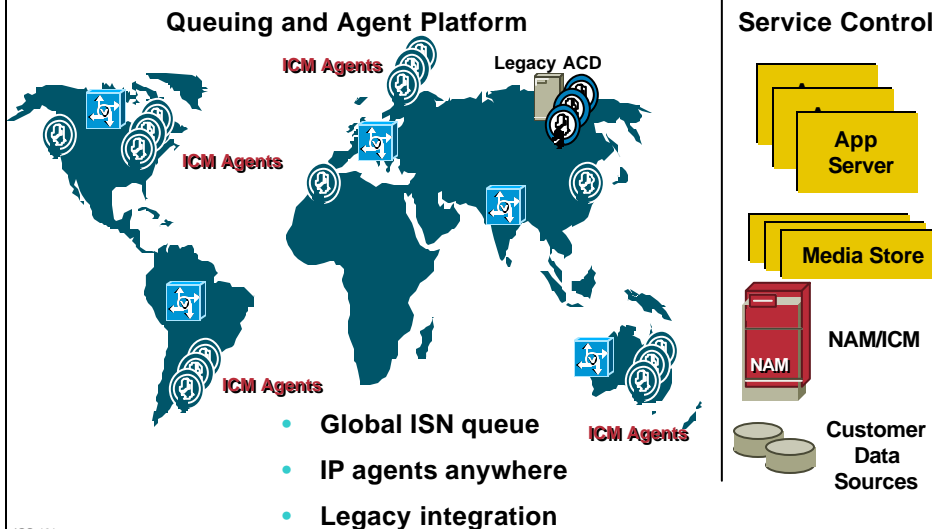


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ISN Network ACD

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- Global ISN queue
- IP agents anywhere
- Legacy integration

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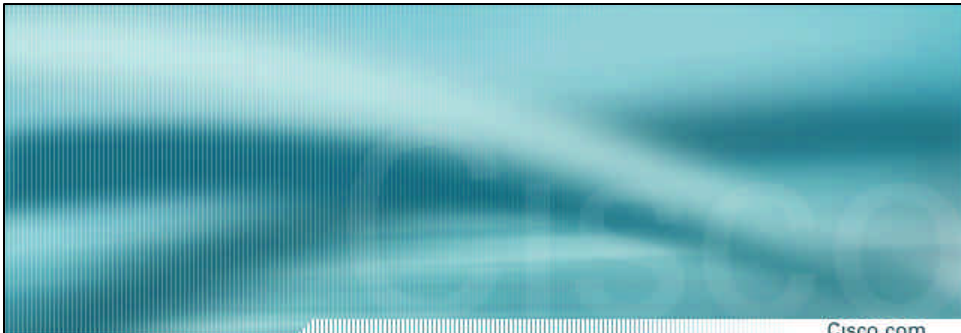
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