Emerging Technologies in

the Contact Center

presented to

GSA *G3C Sponsored Government Contact Center Conference*
U.S. General Services Administration

September 22, 2011

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Agenda

- **Introduction to Noblis**

- **Overview of Major Contact Center Technology Trends**

  – **Social Media**

  – **VoIP/IP Telephony**

  – **Speech Self Service**

  – **Multi-media and Video**

  – **Hosted and Cloud Based Offerings**

Noblis at a Glance

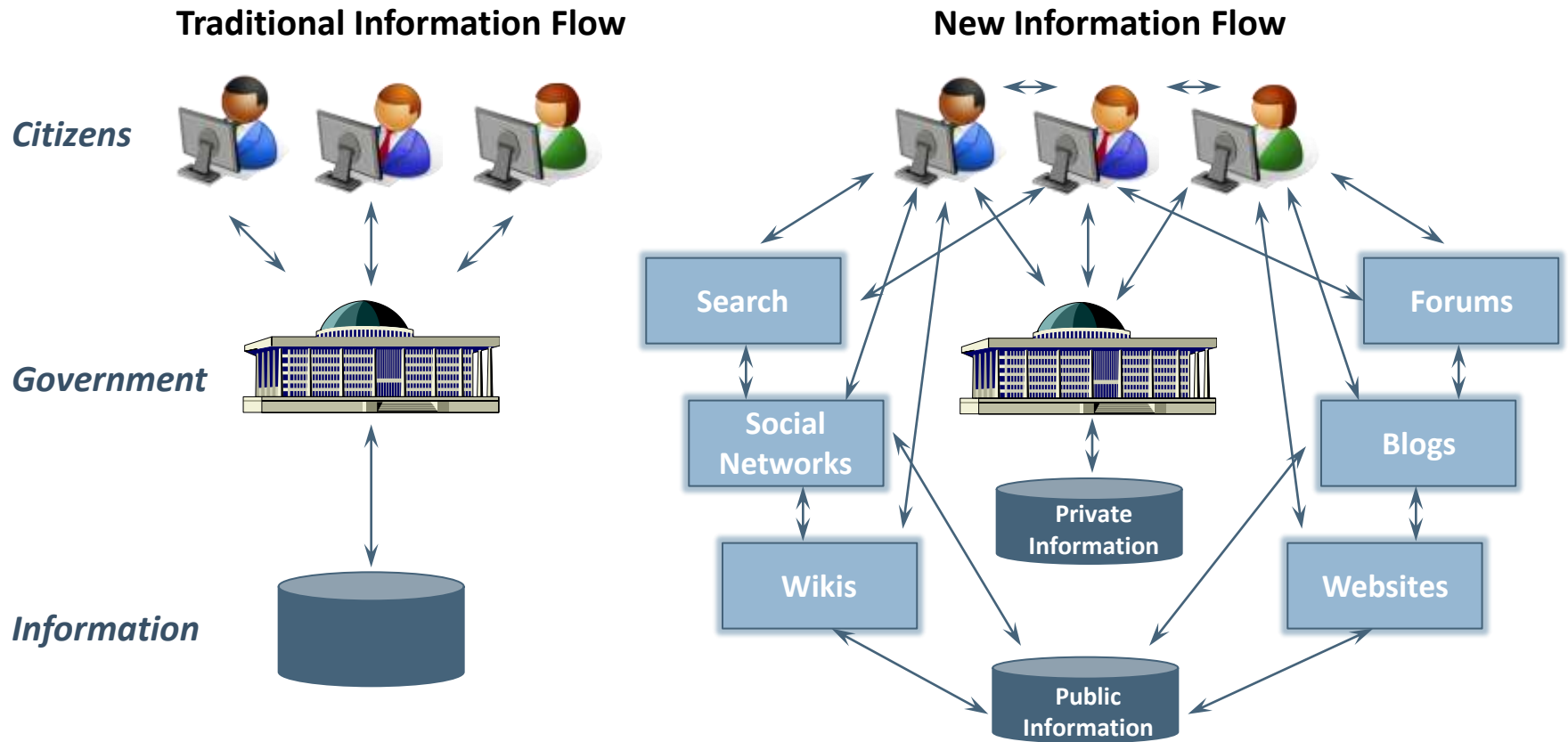**Collaborate** → **Innovate** → **Transform** → **Deliver**

- Science, technology, and strategy not-for-profit organization with a unique mission to benefit the public

- Completely impartial and conflict-free; no commercial ties with any for profit companies and no commercial interests in vendors or products

- Solve complex problems in essential sectors

- Over 550 subject experts with multiple core competencies

- Non-profit 501(c)(3) corporation

- Provide professional staff with the experience and perspective to "sit on the Government's side of the table"

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Emerging Technologies in the Contact Center

Traditional Information Flow Versus New Information Flow

Traditional Information Flow

New Information Flow

Citizens

Government

Search

Social Networks

Forums

Blogs

Wikis

Private Information

Websites

Information

Public Information

The information "balance of power" has switched from government to citizens

Government and Social Communities

- **Citizen expectations are that government should be able to provide the same quality of service over multiple channels and media as the private sector**

- **Government is beginning to participate and take proactive action for feeding accurate information to relevant social sites**

- **Some agencies have established social communities with hosted forums, blogs, Facebook presence, YouTube channels, Flickr accounts, and Twitter tweets**

- **Government contact centers with concerns about privacy, security, and regulation compliance will be slower to integrate with social communities and collaborative services**

- **Agents in government contact centers will need to be aware of the caller's source of information or misinformation**

Government Social Community Space
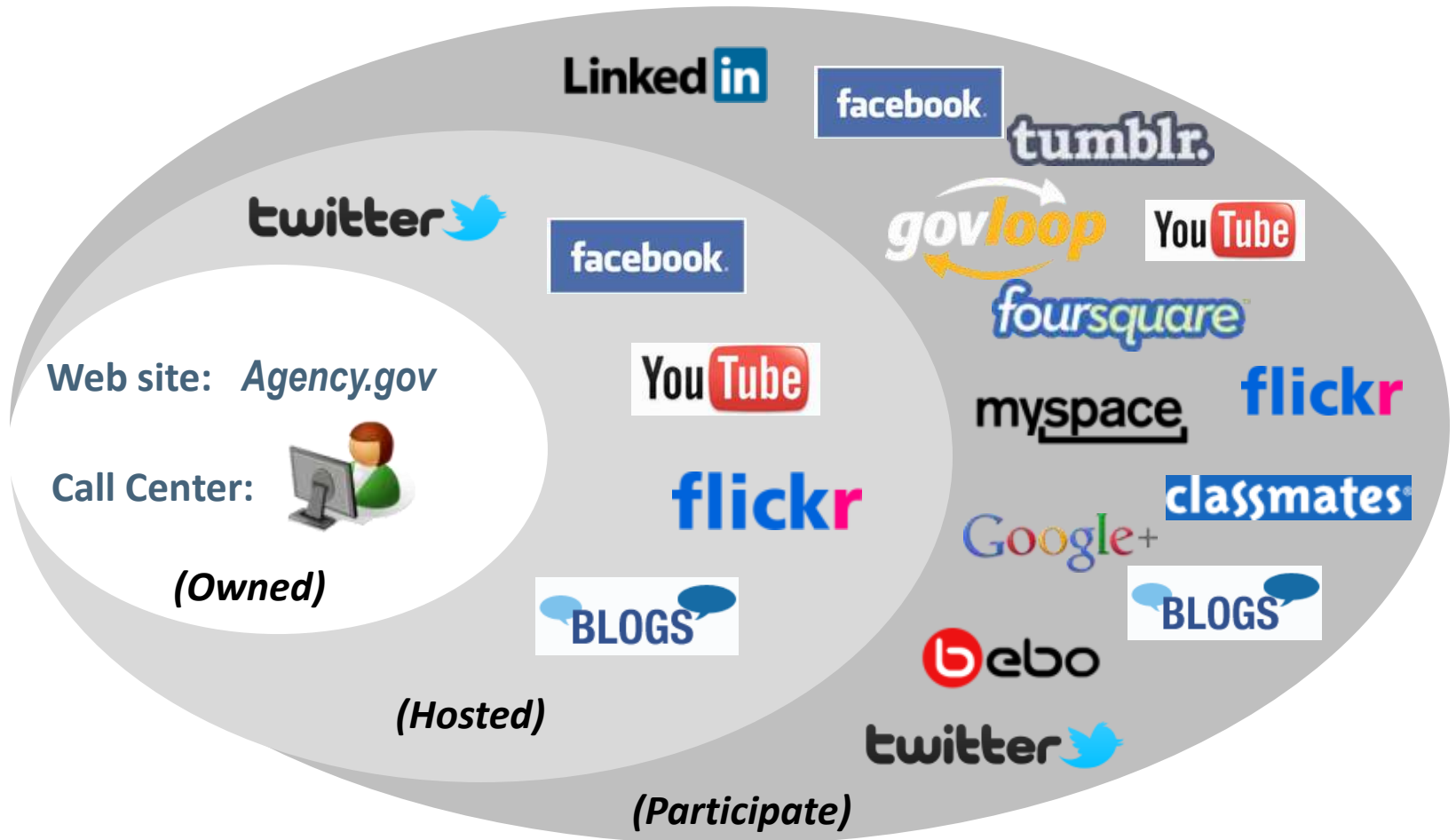
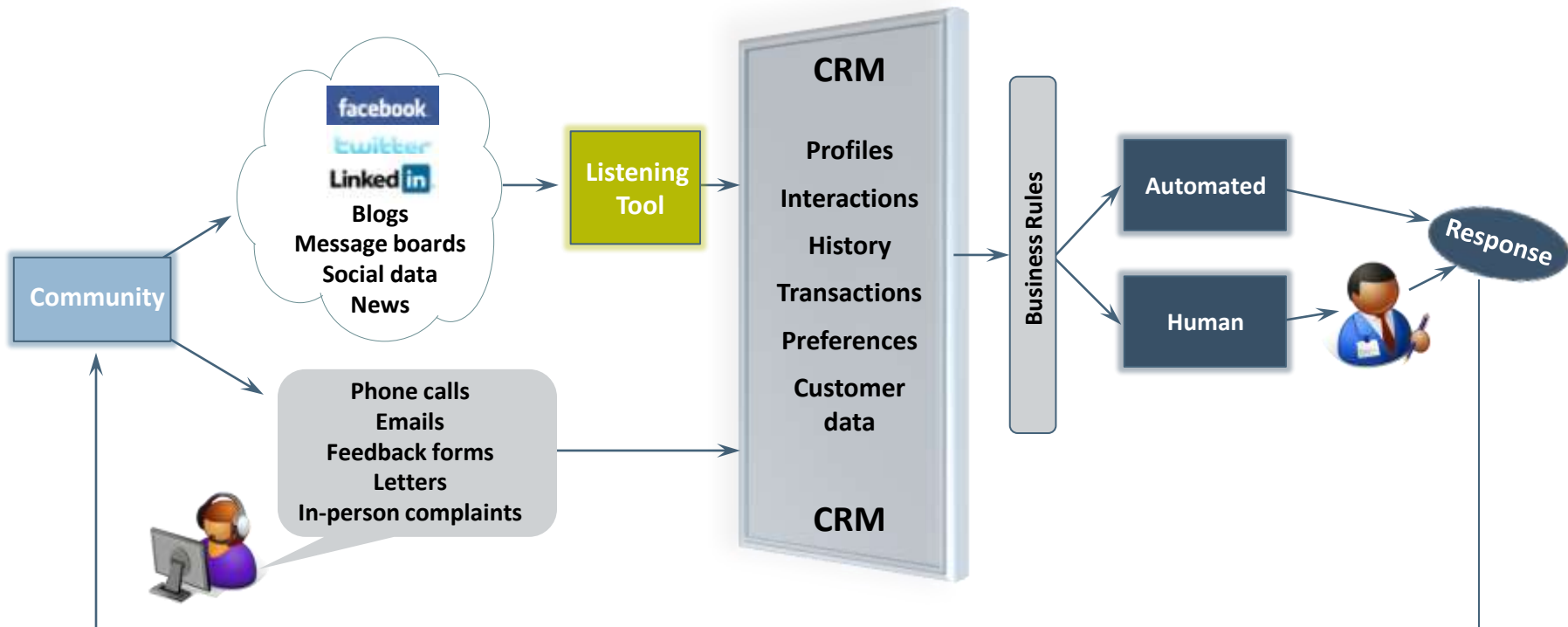# Government Social Site Examples
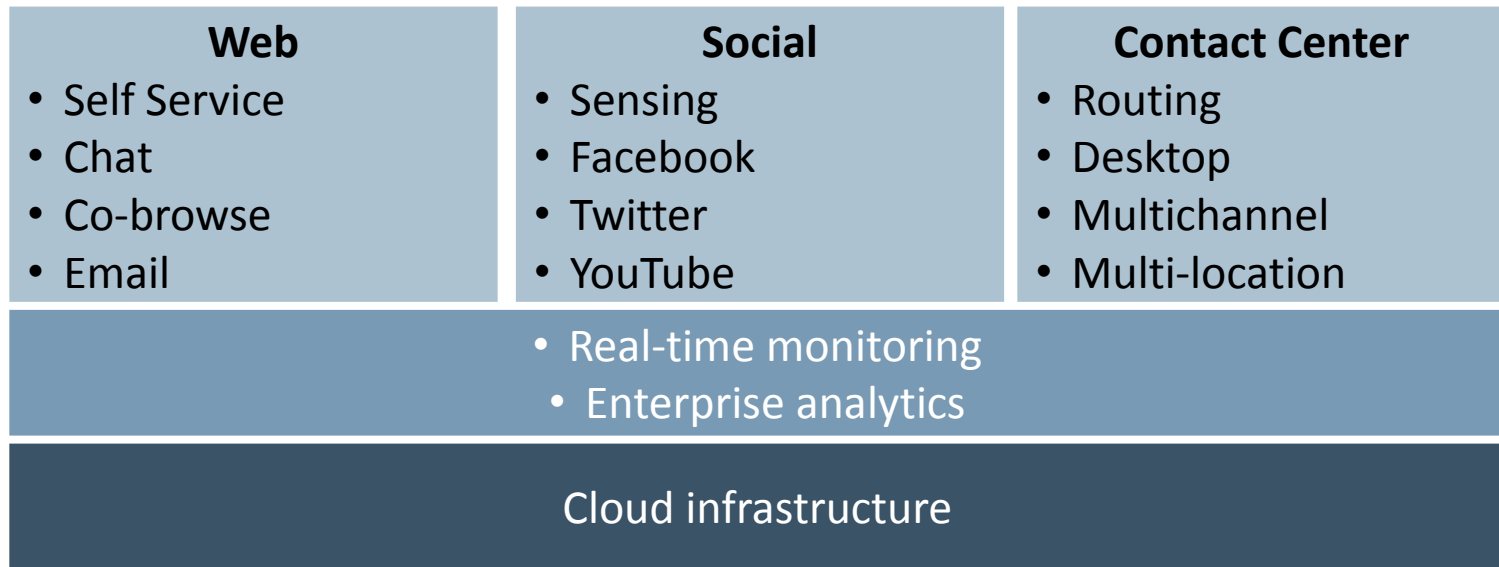

HHS.gov/Open

Commerce YouTube Channel

The Emerging Social Community Integrated Contact Center Model

- **A contact center integrated with a social community brings the agent into the social community ecosystem**

- **The integrated contact center includes technology, people, processes, and cultural shifts within the contact center**

New Generation Integrated Contact Center Platform

Web	**Social**	**Contact Center**
• Self Service	• Sensing	• Routing
• Chat	• Facebook	• Desktop
• Co-browse	• Twitter	• Multichannel
• Email	• YouTube	• Multi-location

• Real-time monitoring

• Enterprise analytics

Cloud infrastructure

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Contact Center Transformation with VoIP

- **Technology that enables IP networks to transport voice communications**
- **Enables contact centers to consolidate their core applications and infrastructure and deliver contact center services to agents anywhere in the enterprise**
- **Increased deployment and disaster recovery flexibility**
- **Tighter integration with data applications**
- **Greater interoperability and choices for end users with increased standards adoption**
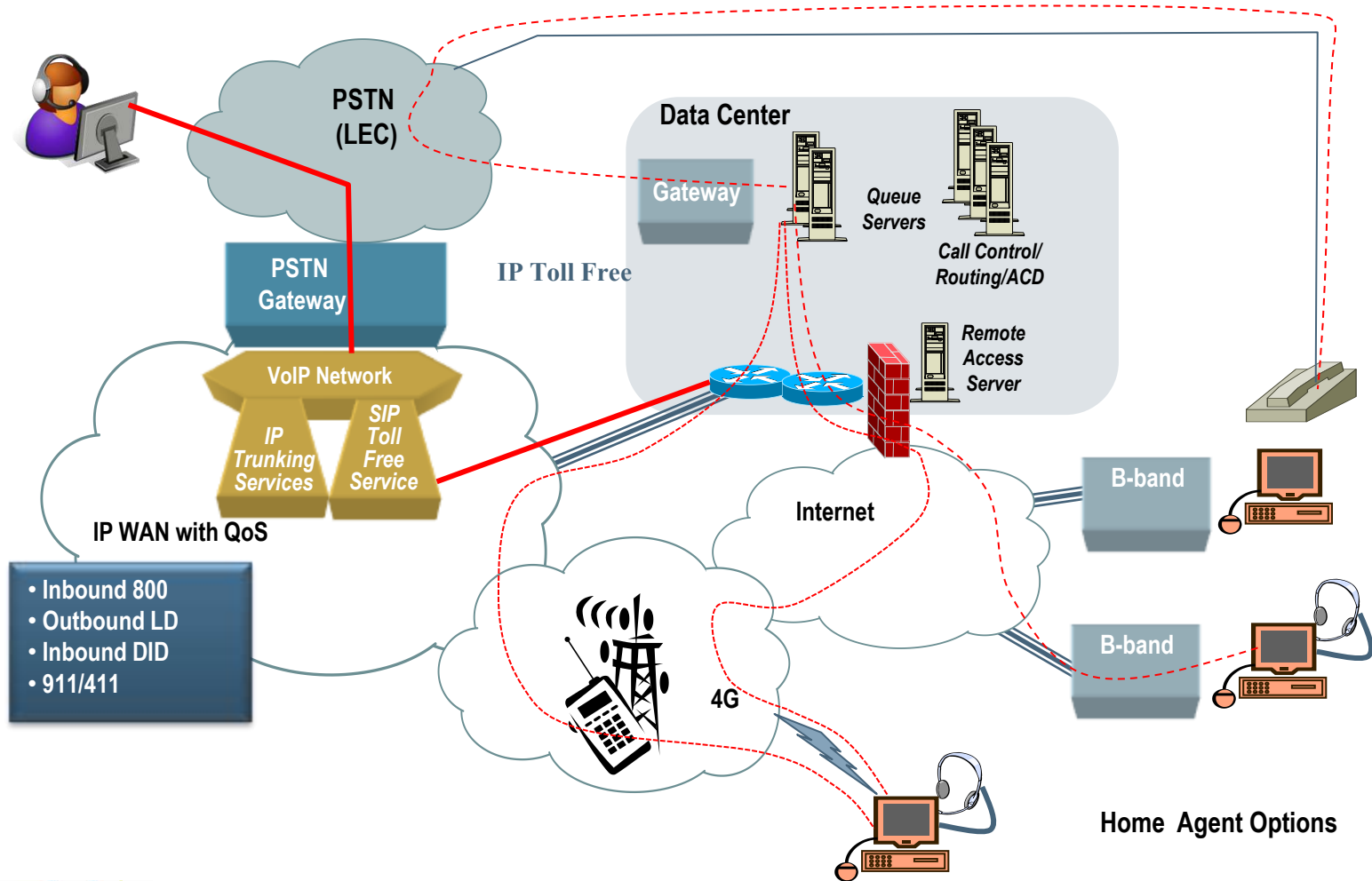

Impact

- ❖ **Technical infrastructure and configuration**
- ❖ **Domain knowledge**
- ❖ **Life cycle cost model**
- ❖ **Organizational structure for management and operations**

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Enterprise IP Contact Center Deployment
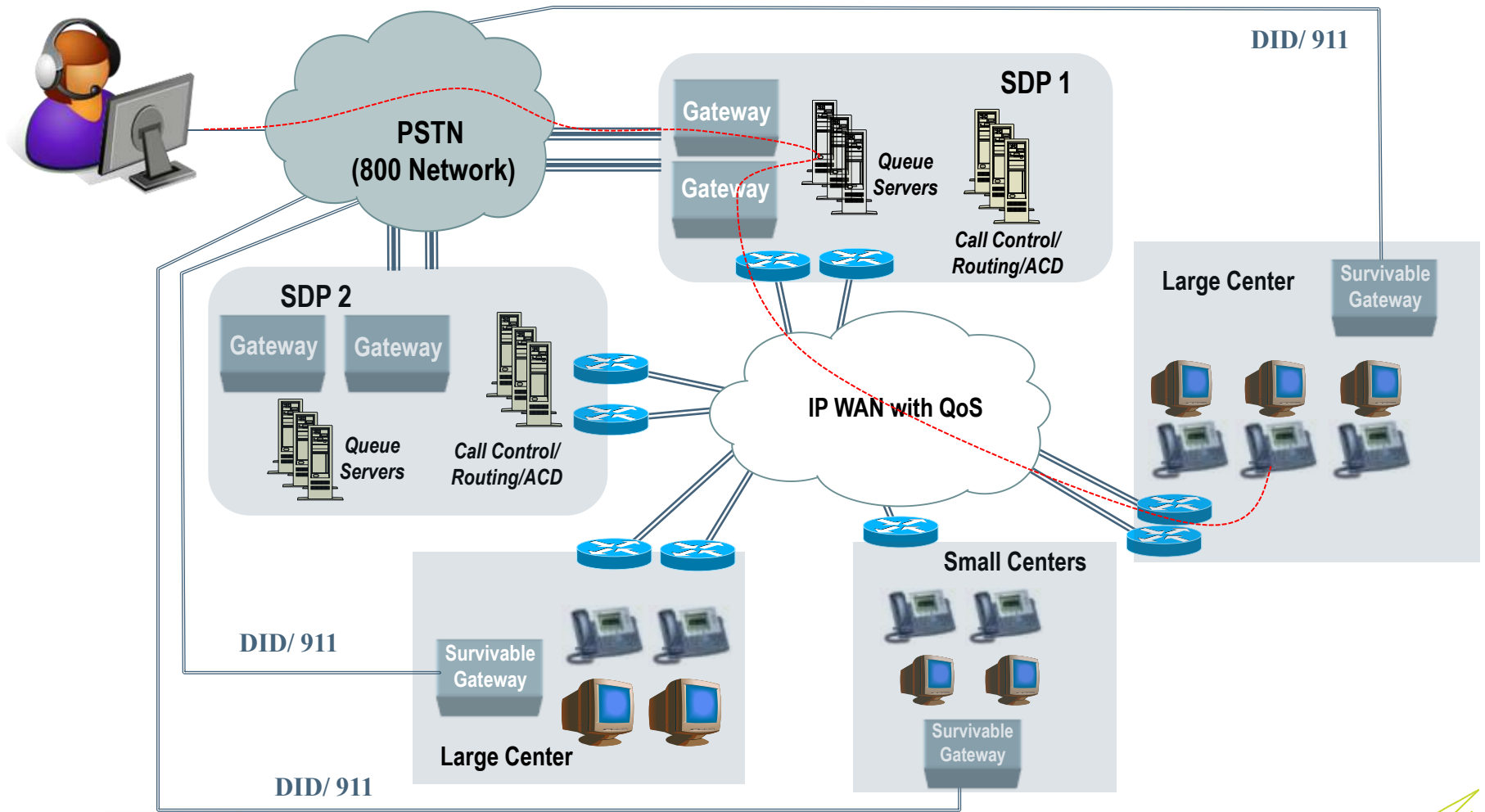
Home Agent Connectivity Options

Advanced Speech Recognition

Speech recognition has evolved from simple directed dialogue applications to more conversational speech and includes techniques such as

- **Multi-slotting**
  - Allows callers to provide more information than requested in the same dialog, and identifying additional information needed to proceed to the next stage in the conversation, e.g., collecting the delivery address information

- **Disambiguation**
  - Verify callers request using a numbered list, supporting grammars, recognition weighting (most probable), and skip list eliminating previously rejected responses

- **Correction**
  - Allows callers to make changes to a request, correct errors due to misrecognition, or caller error

- **Adaptive confirmation**
  - Assumes recognition is correct and based on the confidence level; validates the response with an acknowledgement, passive confirmation, extended passive confirmation, or active confirmation

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Advanced Speech Recognition
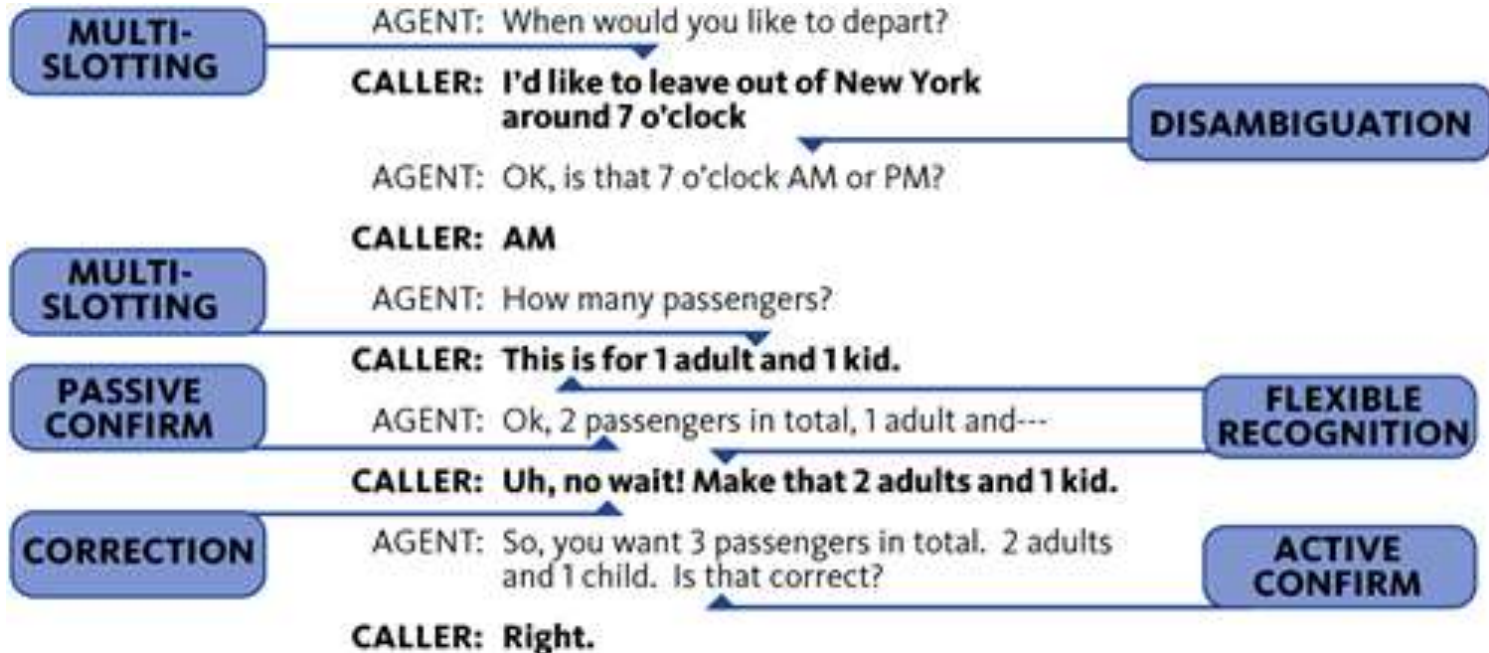
Source: http://www.voxify.com/products/conversation_engine.php

Voice Automation and Call Control Standards

- **VoiceXML – Voice Extensible Markup Language**
  - Enables re-usability of developed applications across standards based platforms (e.g. VXML 2.0)
- **Call Control XML (CCXML)**
  - Enhances VXML call processing functions; supports more complex call handling and switching functions
- **VXML and CCMXL allow enterprises to leverage an existing web based architecture for voice self service and call routing applications**
  - Application deployment and configuration management
  - Integration with backend systems, re-using pre-built interfaces developed for the web
- **State Chart XML (SCXML) is a developing standard**
  - Strength is in event driven logic and parallel processing
  - Better enables development of multi-modal applications

Channel Characteristics and Relative Costs
(Normalized to an Average Phone Contact)

Channel Assisted	Characteristics	Avg cost	Range
Phone	• Real-time interaction • Customer accessibility is limited to hours of operation • Requires time sensitive, dynamic resource scheduling • Can accommodate complex transactions requiring a real time dialogue • Real time dialogue foster potential for higher first contact resolution	X=$10	$4 -$19
Email	• Non real-time interaction • Customer accessibility is independent of hours of operation • Documents interaction for both parties • May require additional contacts to resolve complex issues	$10	$5-$29
Chat	• Real-time interaction • Customer accessibility is limited to hours of operation • Requires time sensitive, dynamic resource scheduling • Documents interaction for both parties • Customer's reading and typing skills impact interaction efficiency • Can allow agents to handle multiple simultaneous interactions • Can be deployed in reactive and proactive chat models • Real time dialogue foster potential for higher first contact resolution	$15	$5 - $30
Web Self Service	• Most convenient and efficient interaction channel • Eliminates agent intervention • Customer accessibility is independent of hours of operation • Can document the interaction for the user • Positive user experience promotes future self service usage	$0.48	**Highly Variable (>$0.01)**

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Multi-Channel and IP Contact Centers

- **Traditional multi-channel implementations included integration of multiple, best of breed functionality**
  - **ACD integration with other real time channels via CTI**
  - **Email integration with contact center reporting**
  - **Integration of ACD, email, and real time channels with CRM**
- **IP contact centers provide "all in one" platforms that include inbound contact routing, IVR, outbound, email, chat, click to talk, embedded CTI and unified agent desktops, CRM**
  - **Switch agnostic software-based routing solutions (e.g., Genesy)**
  - **Traditional providers offering new integrated platforms (e.g., Avaya and Aspect)**
  - **Newer market entrants with all in one platforms (e.g., Interactive Intelligence, Cosmocom, and Convergys)**
  - **CRM vendors offering IP contact center solutions (e.g., Oracle and SAAP)**
- **Recent trend includes integration of outbound notification via SMS**

Expert Collaboration with Unified Communications

● **Incorporates UC based "Presence" and collaboration capabilities to connect contact center agents and Subject Matter Experts (SMEs) to increase first call resolution**

Vendors

● **Avaya Aura Contact Center**

● **Cisco Unified Expert Advisor**

● **Aspect UIP with Microsoft OCS ("Ask-an-Expert")**

Contact Center

Back Office SMEs

Skill mapping **+** **UC Presence**
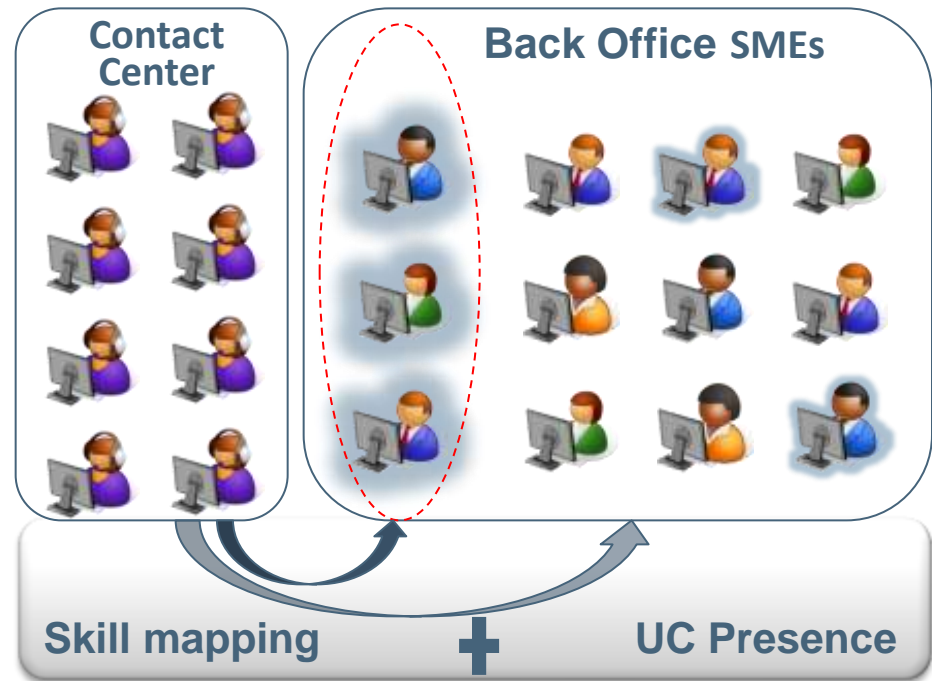
Video and the Contact Center

- **Both businesses and consumers are increasingly using interactive video, supported by:**
  - Increased infrastructure throughput, especially in residential and business broadband services, and now with wireless 4G services
  - More widely adopted standards and improved video codecs
- **Emerging Contact Center video deployment models:**
  - Video kiosk – customers hold a live video sessions with a remote agent/ subject matter expert from kiosks
  - Video Chat – customers hold one-way or two-way video chat sessions with an agent from the organization's web site
  - Interactive Voice and Video Response (IVVR) – customers are provided with both voice and video content for initial inquiry navigation or while waiting in queue (tailored for video capable 3G/4G smartphone endpoints)

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Lands End Video Chat Example

- **Video chat deployment is approximately a year old**
- **One-way video session, where only the customer sees the agent**
- **Agent can push web pages to help the customer browse various products, and can bring specific products from the product room for live video display**

Hosted and Cloud Based Contact Center Offerings

- **IP based contact center technologies, network transport options, and standards have made cloud based offerings more compelling**

  - Pricing models include SaaS monthly costs based on concurrent users/services, usage, or hybrids
  - Eliminating up front capital investment, and technology management expenses
  - Improving time to market of new services, and providing greater flexibility to react to seasonal peaks and valleys

Spectrum of Cloud Based Offerings

- Social Media Monitoring
- Video interactions

- Web FAQs and KM
- Performance Mgmt
- CRM
- Recording/logging
- WFM
- MM contact routing
- Speech Self Service

- Network IVR
- Hosted ACD

Traditional

Services

Emerging

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Instructors

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