

Contact Center of the Future: Establishment of a Next Generation Laboratory Infrastructure

David L. Madison

301-429-1270 • dmadison@mitre.org

MITRE Sponsored Research



MITRE
Technology
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Problem

■ Government agency customer service objectives necessitate:

- providing service on a number of communication channels, e.g., telephony, WWW, e-mail, facsimile, etc.,
- keeping up to date with the technologies and standards affecting those channels, and
- maintaining service effectiveness while optimizing operations.

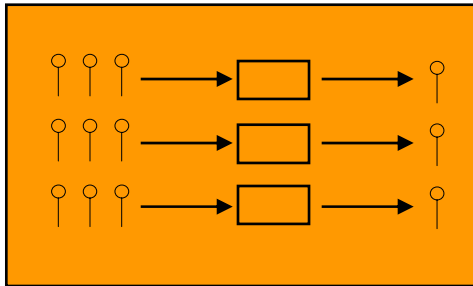


Agencies need engineering resources and expertise to determine a path that leverages high-return technology to improve customer service.

Background

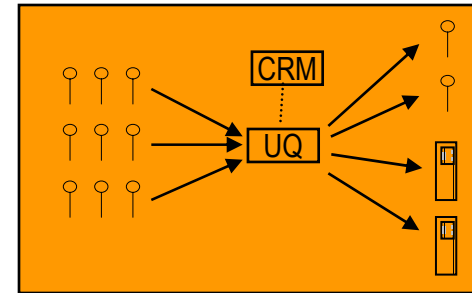
TODAY

- Monolithic, proprietary PBX/ACDs
- Centralized call routing
- Stove-piped contact channels
- SS7/TDM communications
- Network IVR
- Phone and e-mail
- “Touch tone hell” intent identification



TOMORROW

- Multi-channel intent identification
- Universal queue and routing
- Multi-lingual machine translation, and support for overseas contact operations
- Language processing front-ends
- Conversational agents
- Uniform integration with back-end systems
- Load balancing across channels
- Integrated inter-enterprise controllers
- Converged networks
- Multi-modal application servers
- Customer profiles integral to contact routing and service



- Contact Center - the operation in an enterprise from which all customer contact events are managed
- In 2002, MITRE built an extensible CCOF prototype.

**A wide variety of potential technology solutions exist.
Which ones should a given agency pursue?**

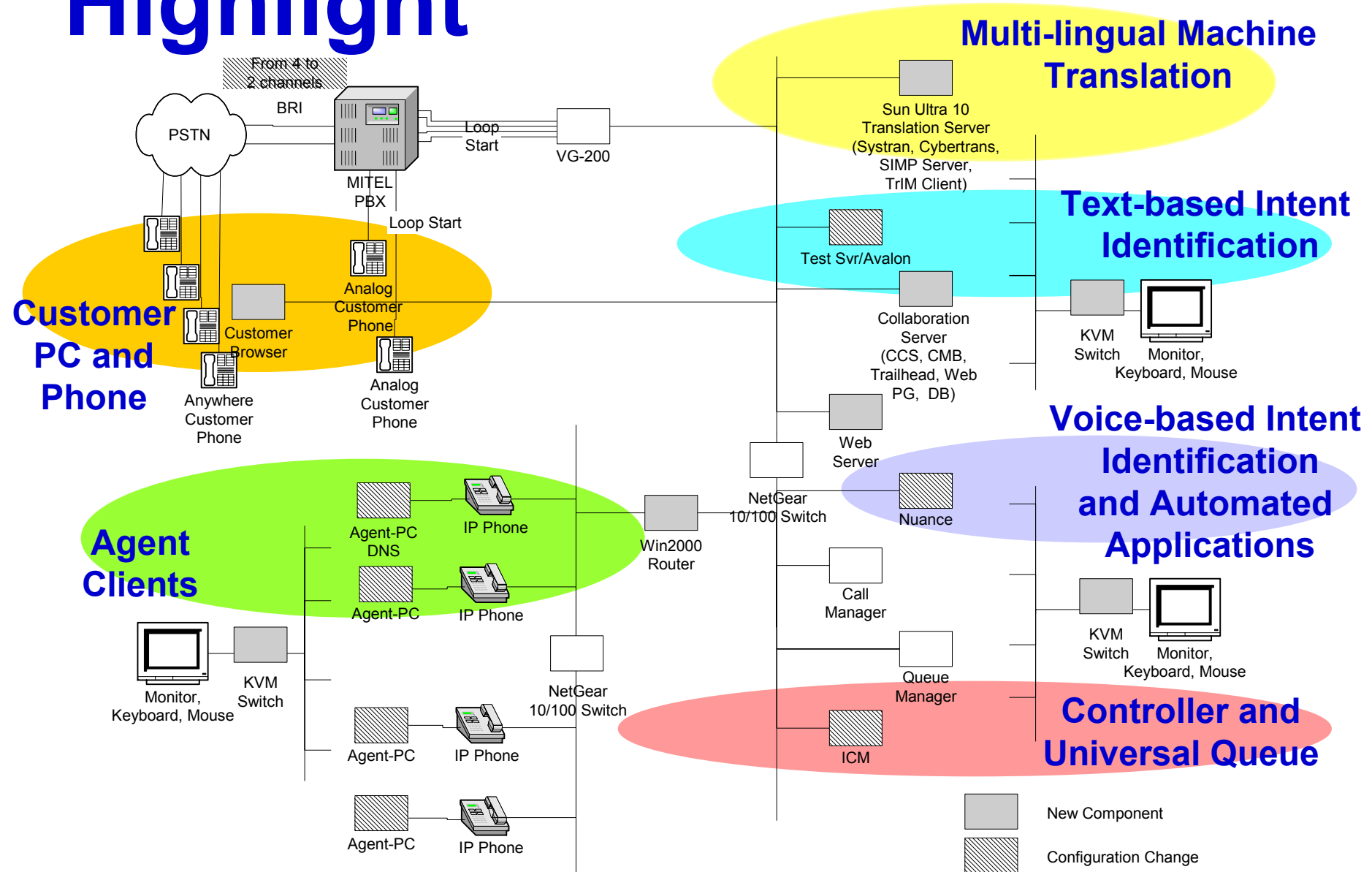
Objective

- **Analyze trend toward multi-channel/universal queue**
- **Explore enabling technologies: language translation and text-based intent identification**
- **Investigate infrastructure data-transmission issues**
- **Baseline government contact-center requirement trends**
- **Contribute to the state of the art in contact center evolution**

Activities

- **Expand the CCOF prototype to include**
 - **Universal queue**
 - **Text-chat channel**
 - **Multi-lingual machine translation**
- **Investigate spoken and written language processing technologies**
- **Survey government contact-center requirement trends**
- **Derive conclusions for an end-to-end future contact center architecture**
- **Develop a draft publication for open literature**

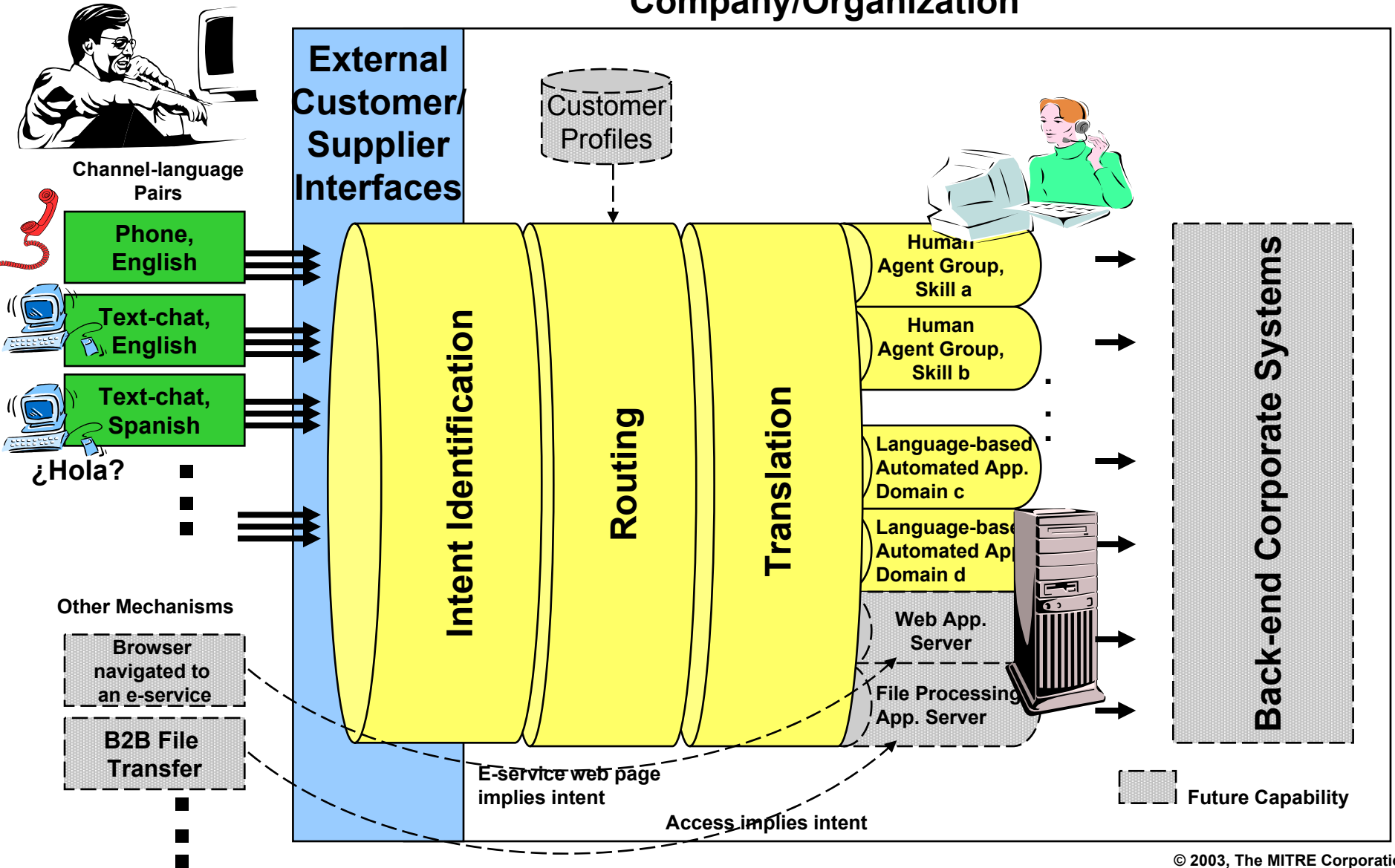
Highlight



Upgrade of CCOF Laboratory Infrastructure

Demonstration

Company/Organization



Impacts

- **Customer operational mission: future direction for government call centers (IRS and other MITRE customers)**
- **Developing work program: application to new MITRE customers**
- **Vendor community: vision for contact-center product development**
- **Relevant knowledge capture/dissemination: conference papers/proceedings**

Future Plans

- **Enhance laboratory prototype capabilities**
- **Apply the future vision to additional agency situations**
- **Disseminate research results**
- **Integrate with CEM laboratory back-end components**
- **Develop contact center technology roadmaps for new sponsors**