Case Study
Voice and Data Systems
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Migrating to SIP & VoiceXML
Creating a VoIP Service
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VDS

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Case Study

Let's take a look at the Case Study:

Stephen Dorsey, CEO of Voice and Data Systems

Background

Voice & Data Systems

- Stephen Dorsey, CEO
- AES Data and Micom Co (both 200M revenue)
- Voice & Data Systems Inc.h (VDS) is third startup
  - Founded in 1991
  - Based in Montreal
  - AT&T, France Telecom, SingTEL Merrill Lynch, Morgan Stanley and other major customers
  - Specialization Messaging Applications
  - Complete Fax Solutions including Fax over IP
  - Standards based development

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Background

- A division of VDS-mandated to leverage VDS' products and services experience in the VoIP Residential and business market

- Current focus on Residential Market in Canada- migrating to U.S. +Int. market

- Migration to SME through value-added features
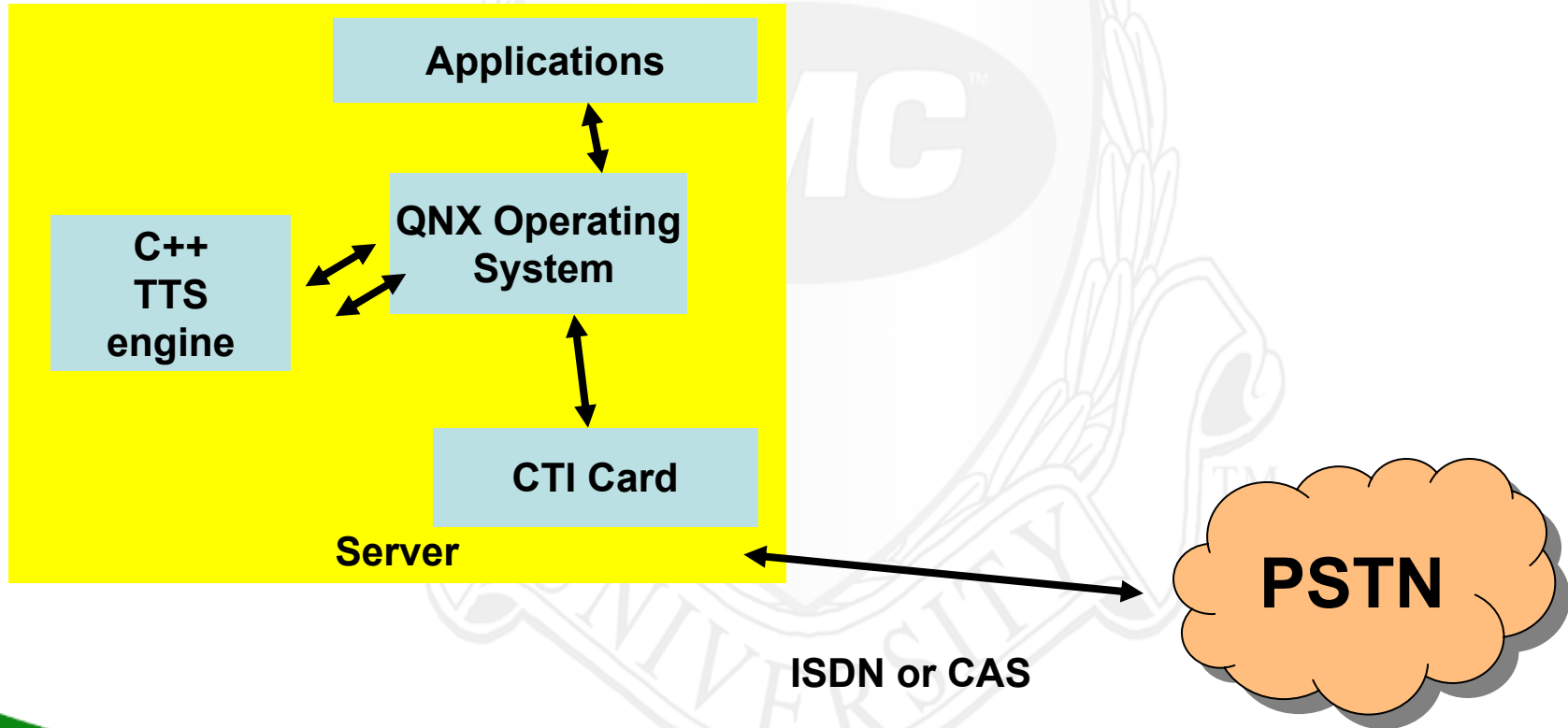
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Challenge

- Migrate legacy unified messaging to next-generation platform
- Select best platform – development tools and protocols
- Find alternative ways to Market Unified Messaging and value added services
- Chose VoiceGenie for VoiceXML
- Java for OSS
- AudioCodes for Gateways

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Legacy Architecture 1
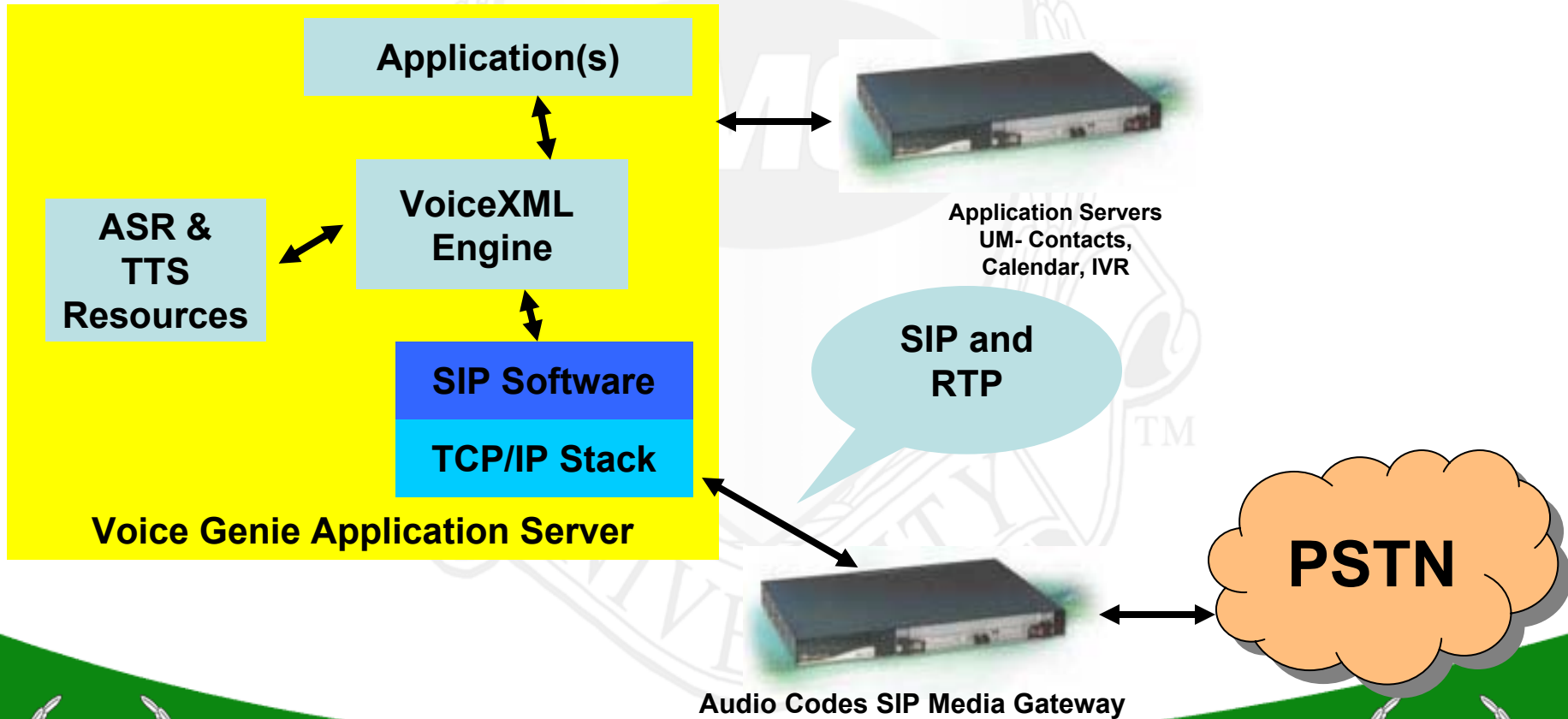
Legacy Architecture 2

- Got VDS market started
- Extremely Reliable
- Large Service Deployments
- Networked Unified Messaging Solutions
- Deployment Challenges:
  - Special Industrial Servers to hold the cards
  - Required Specialized T1,E1,fax, voice cards
  - Required porting of TTS engines
  - Scaling
    - Uses "more of the same" model
  - Load Balancing Requirements
  - Porting of SIP

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VoiceXML Architecture 1

Application(s)

VoiceXML Engine

ASR & TTS Resources

SIP Software

TCP/IP Stack

Voice Genie Application Server

Application Servers UM- Contacts, Calendar, IVR

SIP and RTP

PSTN

Audio Codes SIP Media Gateway

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VoiceXML Architecture 2

- SIP version of VoiceGenie
  - SIP
  - ASR, TTS
  - G711
- Application is written in VoiceXML and Java
- Unified messaging and single-number platform when linked with application server
- Porting of applications to VoiceXML platform
- AudioCodes Mediant 2000 for PSTN interface
  - Interface to Multiple PRI (T1/E1) Circuits
  - SIP
  - G.711 and G.729
  - Flexible routing capabilities
- Scaling through multiple servers/Gateways

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Benefits to VDS 1

- External Media Gateways

- Efficient VoiceXML Environment

- Multiple ASR, TTS engines available

- Standard Commercial Servers

- No Drivers - Eliminates Operating System Dependence

- Load can be dynamically distributed

- Easier to scale

- Wide range of PSTN interfaces (T1/E1/J1, Analog, SS7)

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Benefits to VDS 2

- Expansion through software licenses
- Saved significant rack space
  - 90 ports of VoiceGenie capacity in a 2U
  - 480 ports of Mediant 2000 capacity in a 1U
- SIP Architecture Required for VoIP Service
  - Switching over IP
  - New applications
  - Distributed components
- Networked for worldwide deployment

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New VDS Applications

ASR and TTS enhances traditional services and allows for new ones:

- Voice Mail
- Unified Messaging
- Single Number Find Me
- Voice Grams
- Voice Access to email, contacts, calendar
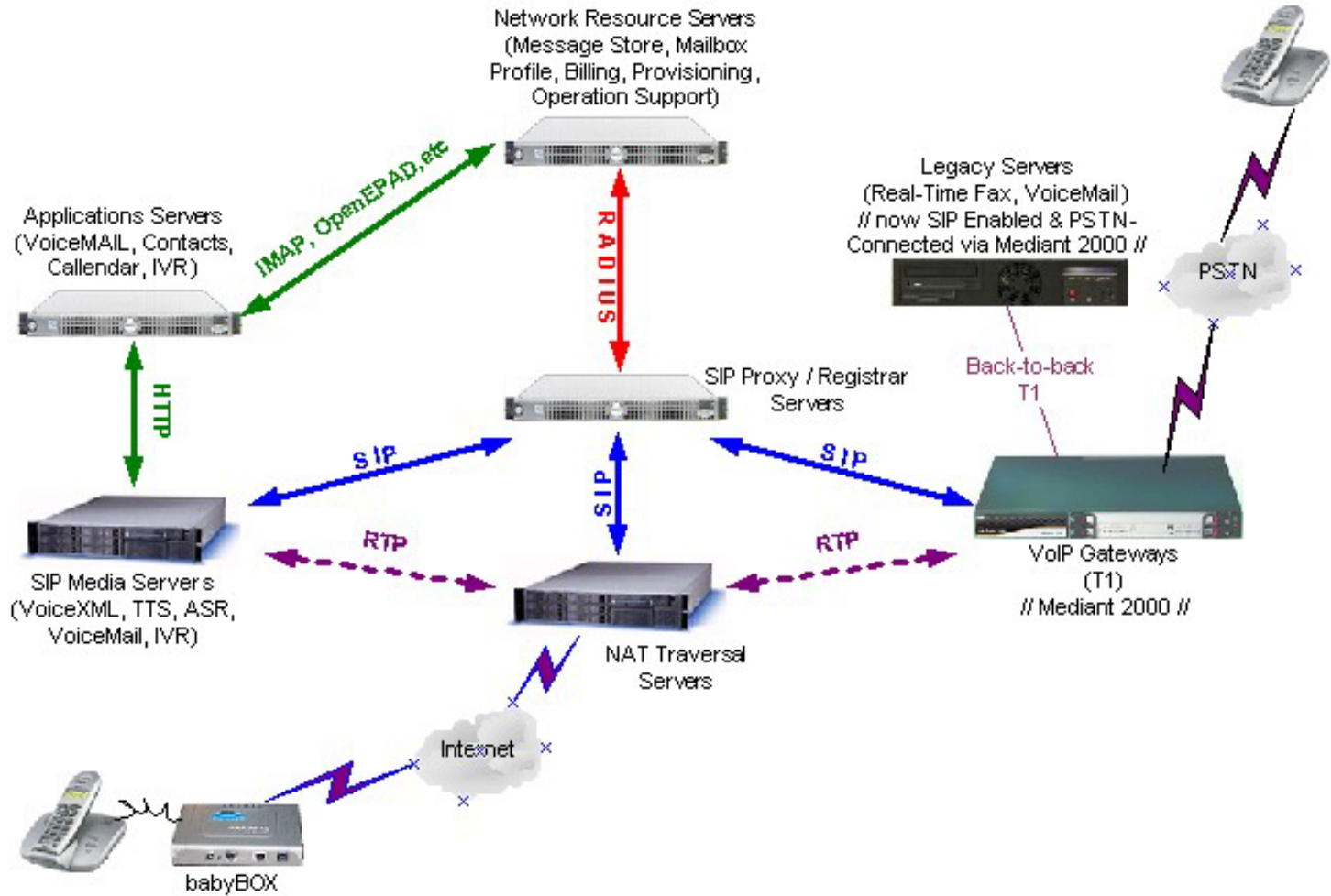
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Creating a VoIP Service

- VDS provides core applications on an integrated basis.
    - OSS Java based
    - UM- Value-added Services (VoiceXXML)
    - Proxy Server-(Linux)
    - Application Servers
- New Features or changes can require changes in all applications.
- This applications must in turn be interoperable with third party applications such as ATA's, NAT traversal, gateways
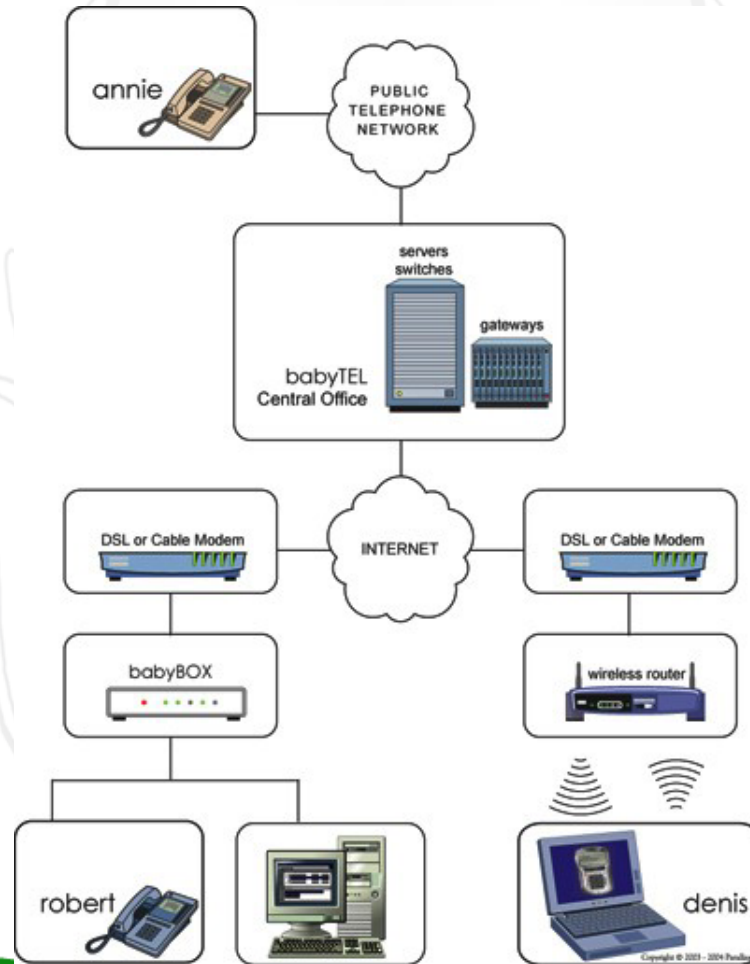- Redundancy-No Single point of failure .

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Operating Environment

Functional Framework

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- BabyTel (www.babytel.ca)
- Service up and running
- Users receiving service
- Voice quality is excellent
- Telephone features such as caller ID, message waiting, voice mail, voice-to-email
- Adding features ongoing leading to full business services

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Getting Started with SIP based VoIP

<u>Service</u>

- A complete outsourced 'turnkey' SIP based VoIP Telephone Service with VoiceXML Messaging and value added services, nd complete transactional, real-time operation systems support supported from babyTEL NOC.

<u>Products Available</u>

- Legacy QNX based UM
- VoiceXML- SIP based Unified Messaging
- Packaged- Proxy Server, Billing, with NAT Traversal, OSS

<u>Interperability with</u>

- Audiocodes
- Voice Genie

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More information

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