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The Asterisk Company

Big Innovations in Open Source Communications

Danny Windham, CEO, Digium, Inc.

Since 1870, Telecom has been the preserve of giant companies!

Monopolistic tendencies

Slow to innovate

We don’t care … *we’re the phone company!*

Today, the power is shifting!

What Happened?

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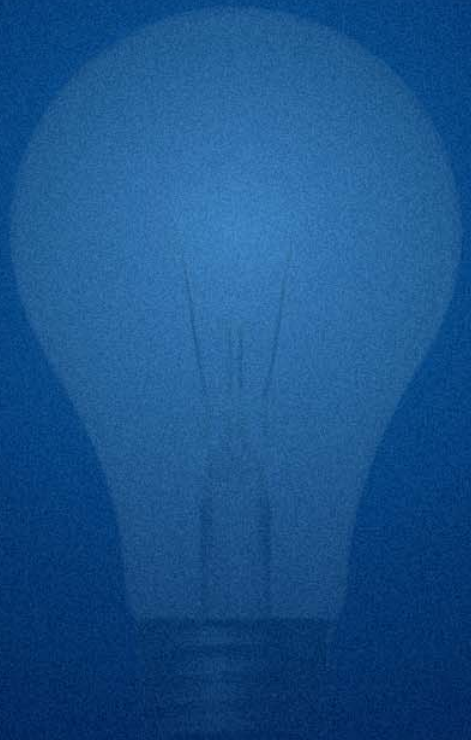
AT&T "Bell System" broken up (1983)

Voice over IP

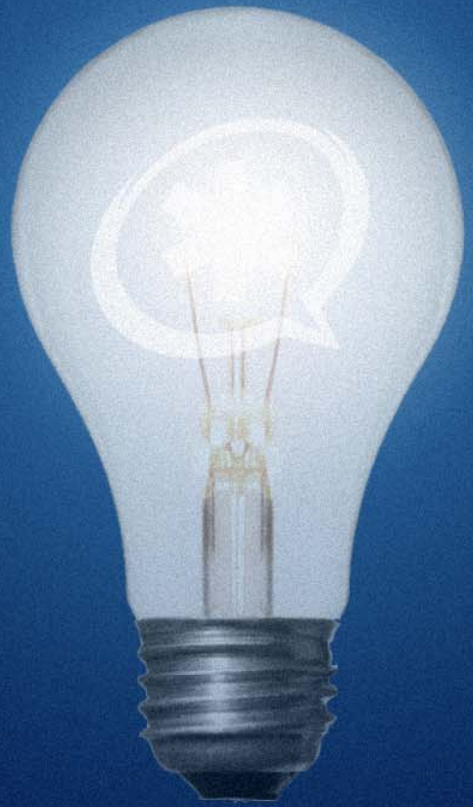
- Proprietary VoIP (1996 - today)
- Standards-based VoIP (1996 - today)
- Vovida's Vocal (1997) - acquired by Cisco

Open Source Communications

The Big Innovation in Open Source Communications



The Big Innovation in Open Source Communications



The Creation of Asterisk

What is Asterisk?

The world’s most popular Open Source platform from which Unified Communications and VoIP applications can be constructed for cloud or premises-based operation

Open Source *de facto* Standards

Function/Application	Open Source Solution
Operating System	Linux
Web Server	Apache
Browser	Firefox
Telephony/Communications	**Asterisk**
Database	MySQL
Customer Relationship Management	SugarCRM
Backup	Zmanda
Productivity Suite	Open Office
Collaboration Suite	Zimbra

Asterisk Evolution

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Asterisk Released As Open Source: 1999

Asterisk 1.0 / First AstriCon: September 23, 2004

Asterisk 1.2: November 15, 2005

Asterisk 1.4: December 26, 2006

Asterisk 1.6: October 13, 2008

Asterisk 1.8: October 26, 2010

Asterisk Capabilities

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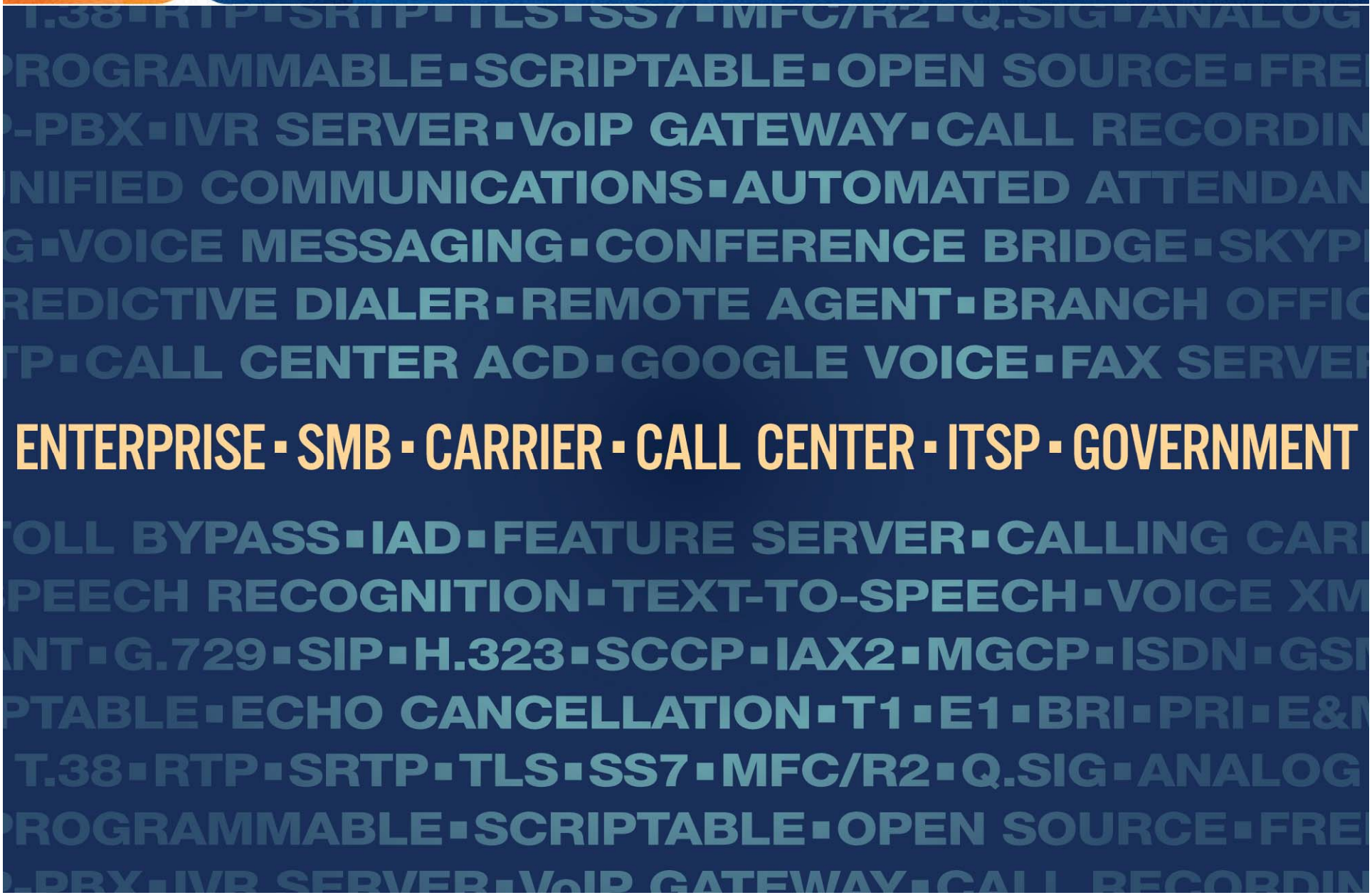
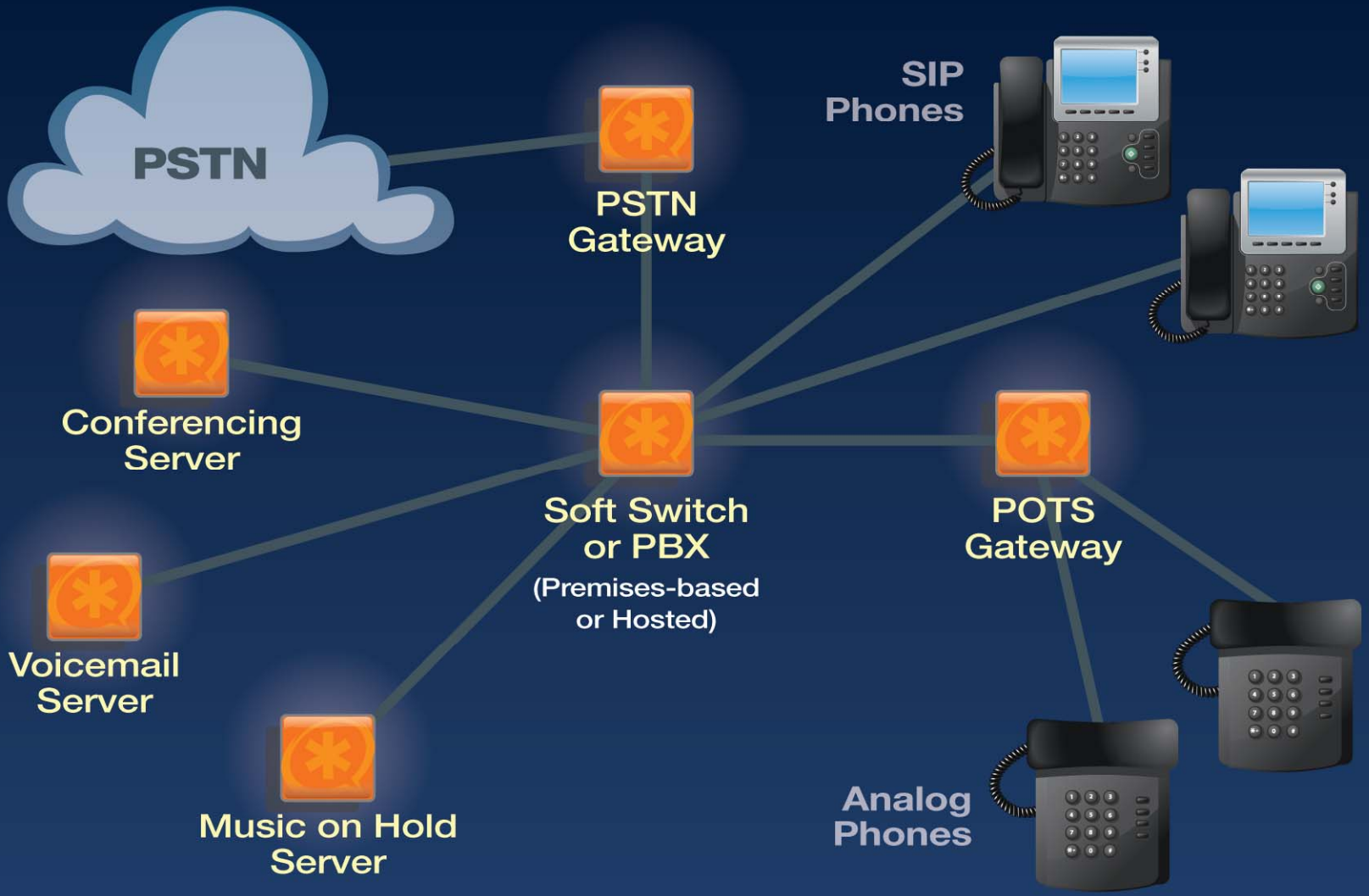


Where Asterisk Fits



Asterisk Statistics

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The Asterisk Community

- 2M+ downloads in 2010
- 75,000+ registered asterisk.org members
- 68,000+ forum users
- 34,000+ forum topics
- 109,000+ forum posts
- 900+ active contributors
- 9800+ developers over the lifetime of the project
- Worldwide Asterisk deployment in 170+ countries
- Dedicated Industry events:
  - ***AstriCon*** for Asterisk developers and users
  - ***Asterisk World*** for business users

Open Source Market Share

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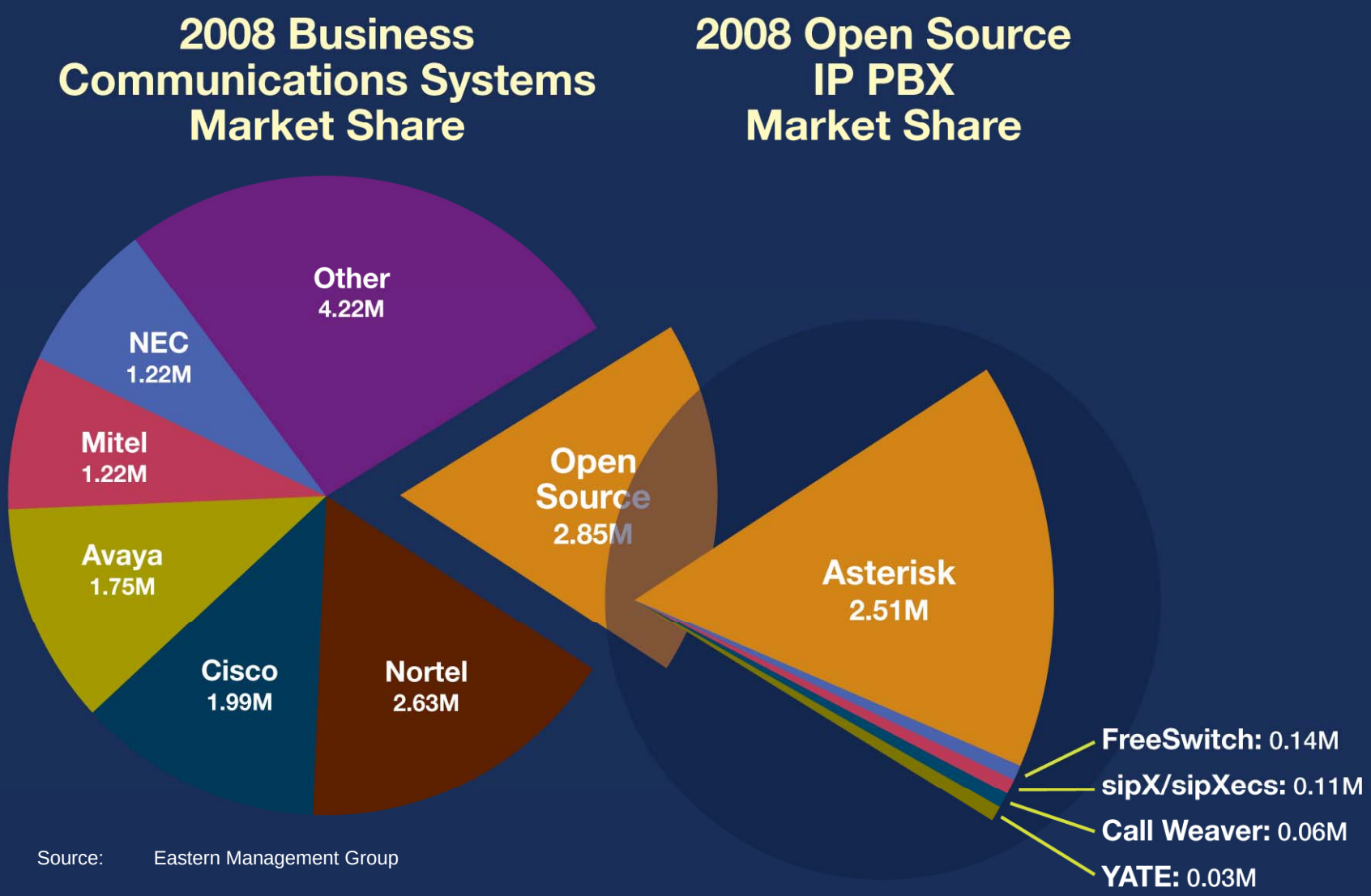


Source: Eastern Management Group

Big Innovations in OSS Communications

Open Source Communication takes
#1 share of new IP endpoints

Eastern Management, 2009

Big Innovations in OSS Communications

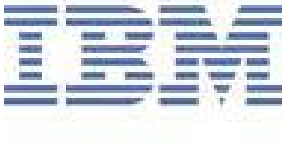
Asterisk Community named
‘The #1 Most Influential ‘Person’
in VoIP’

November 2006, VON Magazine

Who Uses Open Source Communications Software?

Open Source adoption spans the gamut of business applications

from non-profit to small business to enterprise to governments



The economic impact of the power shift ...

Dramatic Price Reductions

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SMB PBX system supporting 50 users

Before

~$15,000 (ksu)

+ ~$15,000 (phones)

+ ~$12,500 (installation)

= $42,500

After

to as low as $650 (pc)

+ $5000 (phones)

+ $2500 (installation)

= **$8,150** (approx 1/5 of the old price)

Dramatic Price Reductions

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Enterprise PBX system supporting 5000 users

Before

~$3,000,000

After

$20,000 (servers)

+ $700K (phones)

+ $80,000 (installation, configuration, training)

= **$800,000** (approx 1/4 of the old price)

Dramatic Price Reductions

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How is this accomplished?

- Uses Open Source call control software
- Uses off-the-shelf hardware
  Leverages general purpose hardware volumes
- Shares infrastructure (data network)
- Uses Open Standards devices (phones, gateways)
  Introduces competition across all elements

The industry impact of the power shift ...

Dramatic Market Shifts

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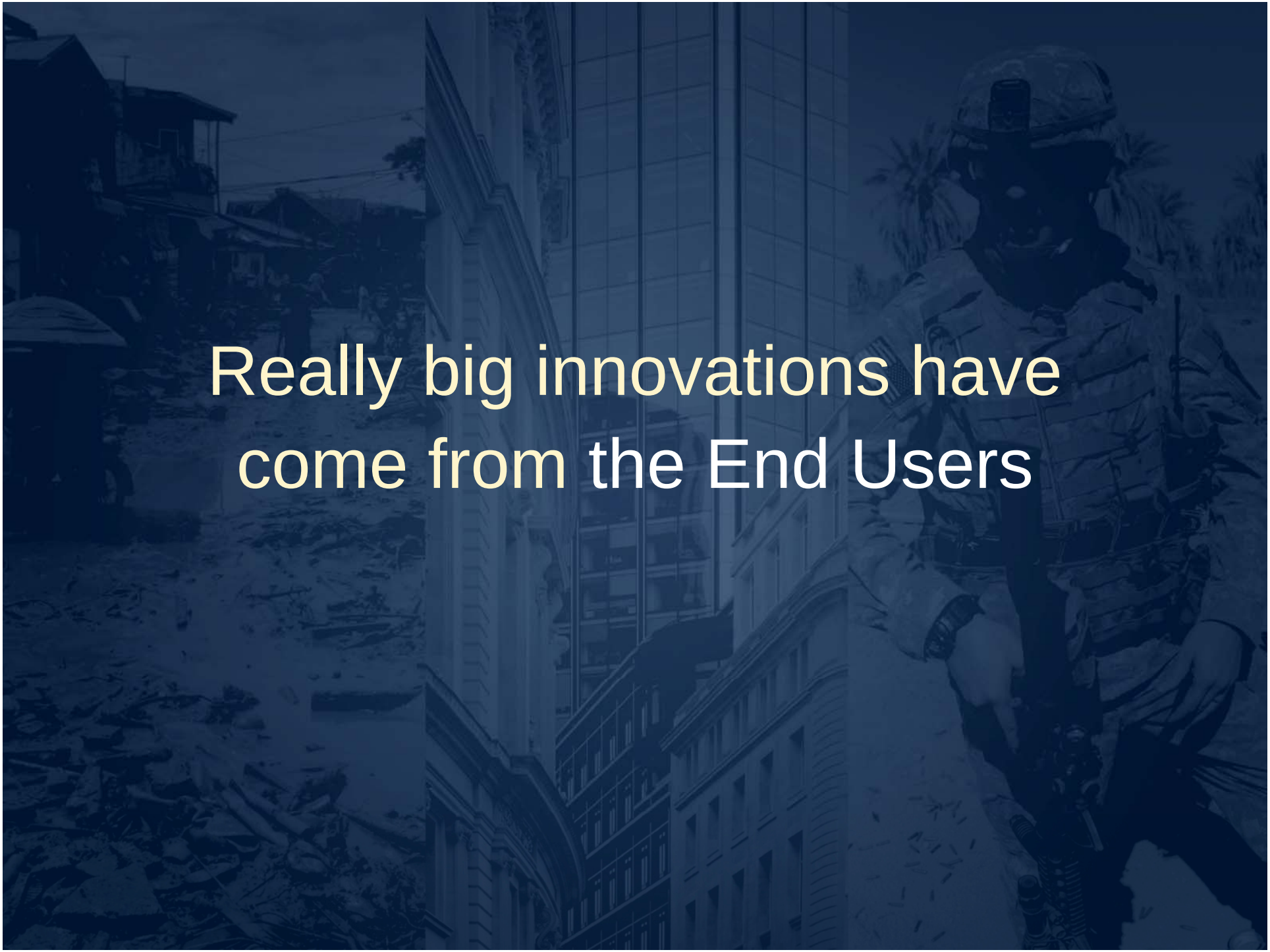
Proprietary vendors forced to compete

- Market caps collapse

Service provider landscape redefined

- New players
- New offerings


Really big innovations have
come from the End Users

Big Innovation Case Study

Humanitarian Relief

Challenge:

Over one billion people in under-served countries around the world do not have basic access to clean water, sanitation, electricity or telecommunications.

Big Innovation Case Study

Humanitarian Relief

Solution:

Bukuuku District Uganda: Bicycle and solar-powered PC and communications system that provides basic computing, voice calling and Internet access for villages without access to electricity or telecommunications.

Village Telco: Community based Telephone Company. Based on open source applications that enable entrepreneurs to set up and operate telephone service in underserved communities.

Big Innovation Case Study

Humanitarian Relief

Result:

- Having these tools can mean:
- The difference between life and death (medical applications)
- An increase of 50% - 100%+ profit on crops (commerce applications)
- A better future for the children (education applications)
- The ability to communicate ideas with the rest of the world

Big Innovation Case Study

Disaster Relief

Rele Anmwe (“Call for Assistance”)

Challenge:

The January 12th devastating earthquake in Haiti left the people and organizations unable to reach emergency services.

Big Innovation Case Study

Disaster Relief

Solution:

Rele Anmwe, using Asterisk software, quickly and inexpensively created an IVR system enabling individuals to reach emergency services (hospital, pharmacies, food, shelter and distribution centers).

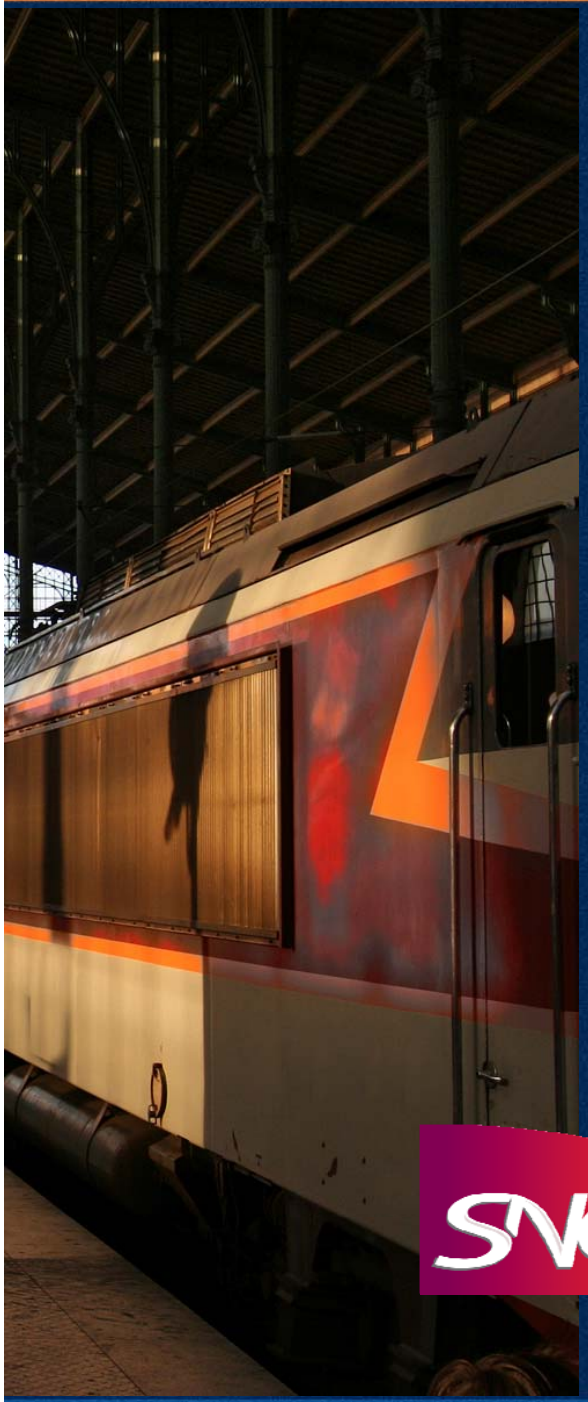
Voice recognition technology allowed the callers to receive information in their native language and was helpful to those individuals who due to severe injuries were unable to use a telephone keypad.

Big Innovation Case Study

Disaster Relief

Result:

Because Asterisk was free and easily downloadable, the Rele Anmwe project was able to quickly create a solution to enable the Haitian people to contact emergency services in their area. The open technology also allows the Rele Anmwe project the ability to use legacy software/equipment donated by others.

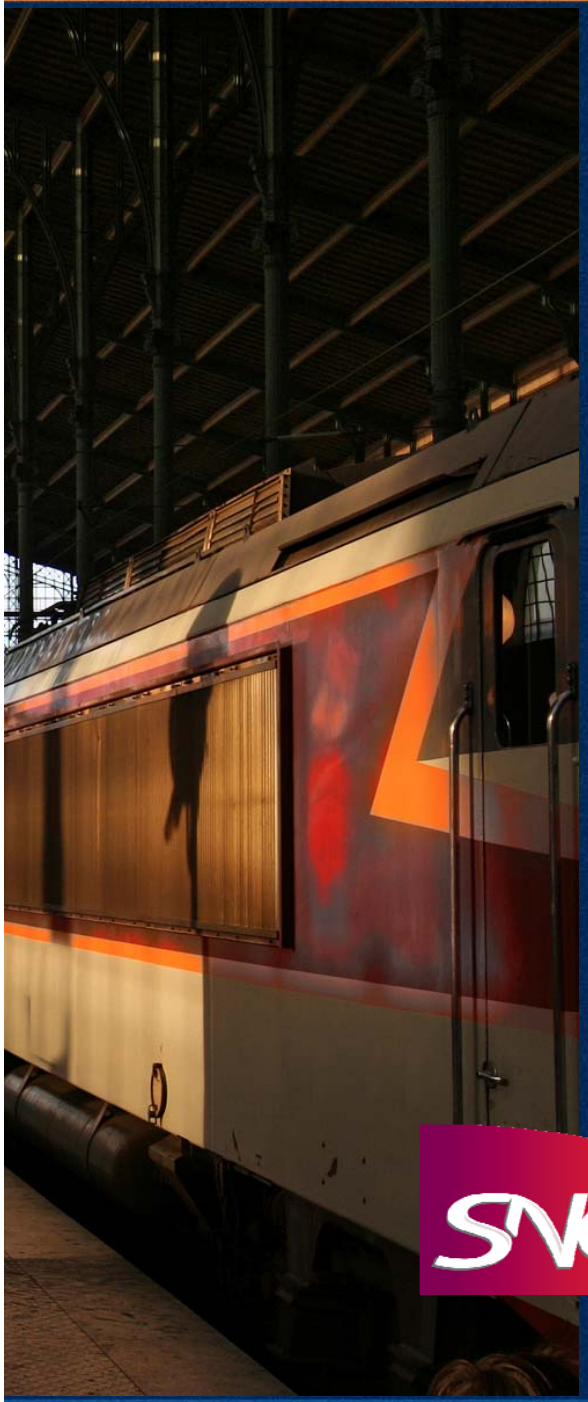


Big Innovation Case Study

French Rail System

Challenge:

Train conductors had no mechanism to understand why tracks were placed out of service or how long the interruption would last.



Big Innovation Case Study

French Rail System

Solution:

- Asterisk was installed
- Toll free numbers were created for each track
- The maintenance crew sends SMS messages to designated address
- Conductors call the proper number – and Asterisk reads the SMS message which provides an update on the track

Result:

Conductors are informed regarding track status – passengers can make educated decisions

Big Innovation Case Study

US Army

Challenge:

Utilizing existing satellite phones, personal communications between service members and their families was difficult and expensive, and the U.S. Military needed a cost-effective and reliable method for personal communications.

Big Innovation Case Study

US Army

Solution:

Highly scalable and cost-effective Asterisk solution for the U.S. Army in Iraq.

Soldiers enjoy the ability to easily and affordably communicate with loved ones in the U.S through the use of wired, wireless, and web browser-based telephones at Army bases in Iraq.

Army service members now enjoy the benefits of an ultra-modern communications solution, including voicemail-to-email; personal US-based Direct Inward Dials, and the choice of telephones.

Big Innovation Case Study

US Army

Results:

The Asterisk-based solution proved to be invaluable to the thousands of U.S. Army service members who needed a reliable and feature-rich solution for U.S. domestic calling to and from Iraq. All of the project's goals were met and exceeded, delivering highly available communications at low costs.

Big Innovation Case Study

City of Amsterdam

Challenge:

- 500 telephone systems
- 14 different brands
- 23,000 IP Users
- 21 suppliers with service subscriptions
- 18,000 telephony users
- 11,000 mobile users
- 2.5 thousand data subscriptions
- 350.000,00 Euro mutual calling a year

Big Innovation Case Study

City of Amsterdam

Solution:

- Migrate to a complete open source VoIP network solution based on Asterisk
- Network connects the central city administration and the fifteen city districts
- Project based on purely on open source software, which makes it the largest project in the Europe
- Building new IP environment alongside existing telephony environment
- Integration with mobile telephony
- Establish standard infrastructure, focusing on workplace
- Clean up the old infrastructure to achieve significant savings

Big Innovation Case Study

City of Amsterdam

Result:

- The City of Amsterdam is in control of their telephone and data
- Standardized workplace
- Estimated cost savings of $10 million

Big Innovation Case Study

Government

Challenge:

Developing a communications infrastructure for an entire island using only OSS?

Big Innovation Case Study

Government

Solution:

The people of Niue – an island nation in the South Pacific – where there is no GSM operator, outfitted all inhabitants with mobile phones and created a switching infrastructure using OSS Software and off-the-shelf hardware.

OpenBTS + Asterisk + My SQL

Result:

Anyone on the island can talk to anyone else for free. System is easily replaced in case of a disaster (Hurricane!)

Big Innovation Case Study

Groupama

International Insurance Agency

Challenge:

Customers calling the 800 number often experienced long waiting periods – and were misdirected 10% of the time (landing in the wrong queue)

Big Innovation Case Study

Groupama

International Insurance Agency

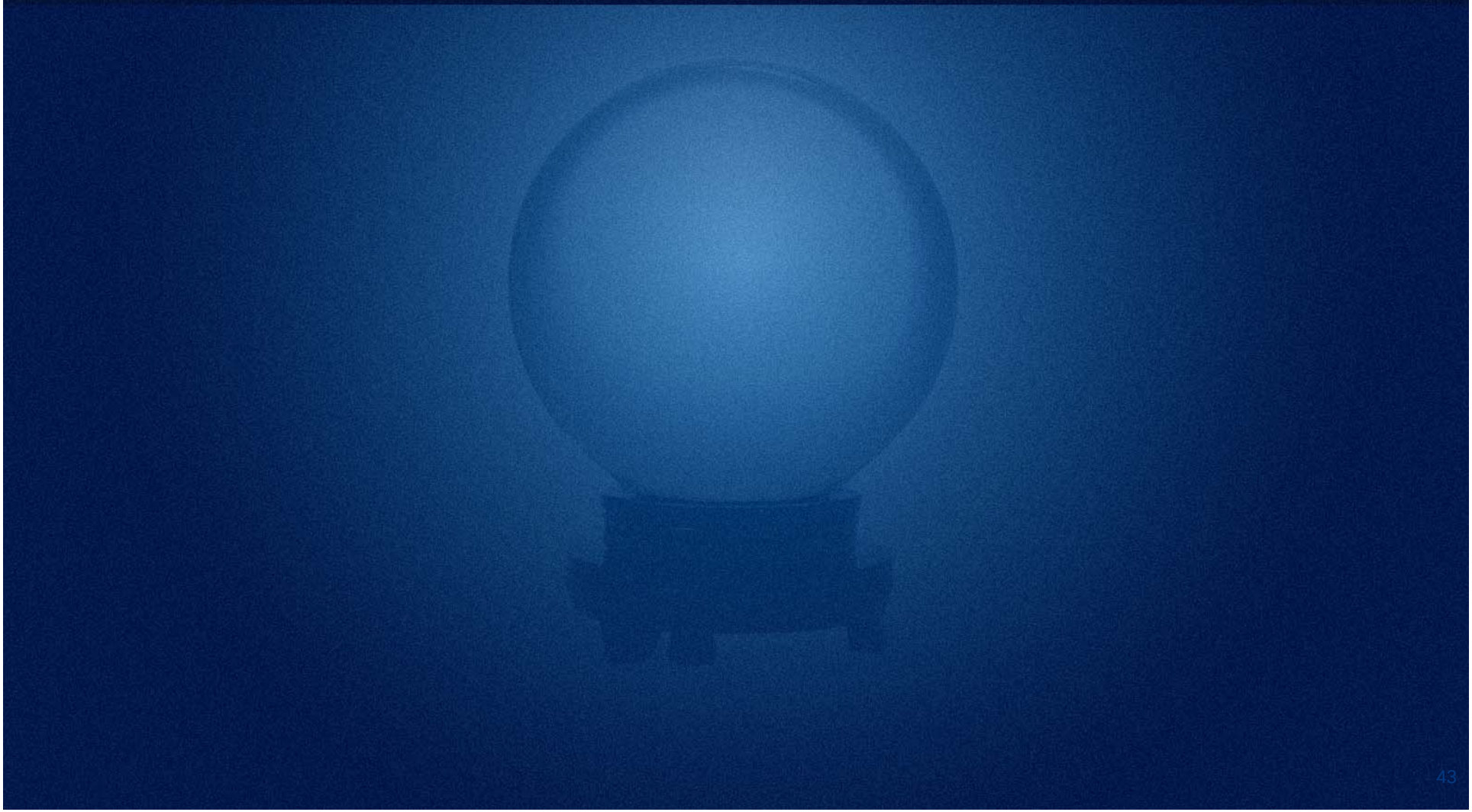
Solution:

- Asterisk was installed
- Calls pass through Asterisk, Caller ID is recorded
- Caller is given the option of leaving a message and receiving a call back
- Asterisk ‘pretends’ to be a caller and waits in the queue
- Once the agent is available – Asterisk places the call to the customer and connects the agent

Result:

Customers don’t have to wait – misdirects are reduced

In OSS Communications, where will future big innovations occur?



More capable OSS platforms

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Frameworks that enable:

- Highly scalable solutions
- Solutions of high availability

Asterisk SCF

Companion Project to Asterisk

Project Goals

- High Performance
- High Scalability
- High Reliability
- Extensibility

Component-based Architecture

- Messaging Protocol

New Cloud-based Communications

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OSS enables new service providers

- Asterisk + Apache + MySQL, + PHP + Java, etc.
  - Twilio
  - Integrics

Specialty cloud services emerge

- Mass market solutions
- Vertically focused applications
- Clever communications tools

Thank you!

www.digium.com