



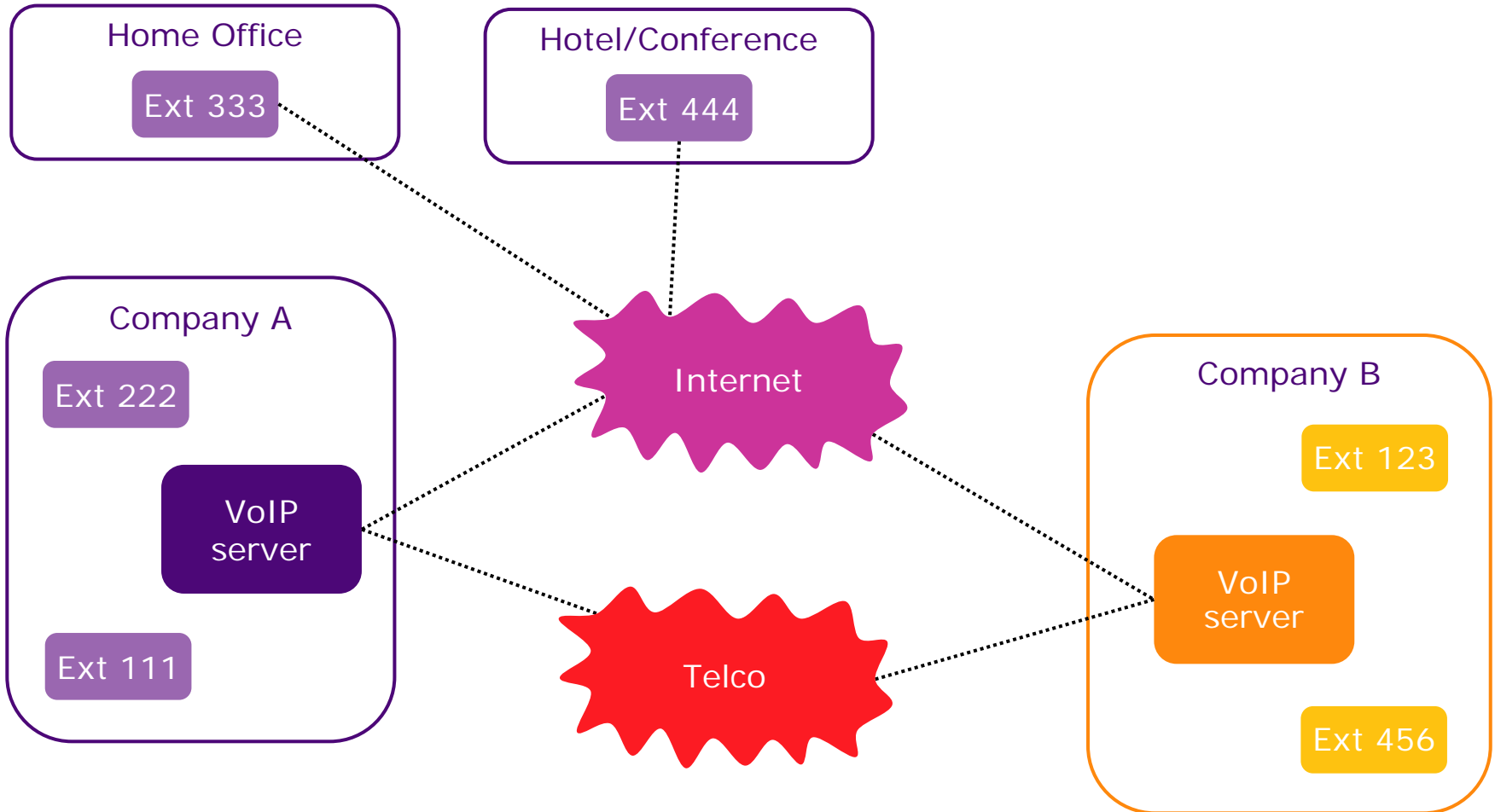
UK ENUM- Opportunities for registrars

19 November 2008

Phil Kingsland

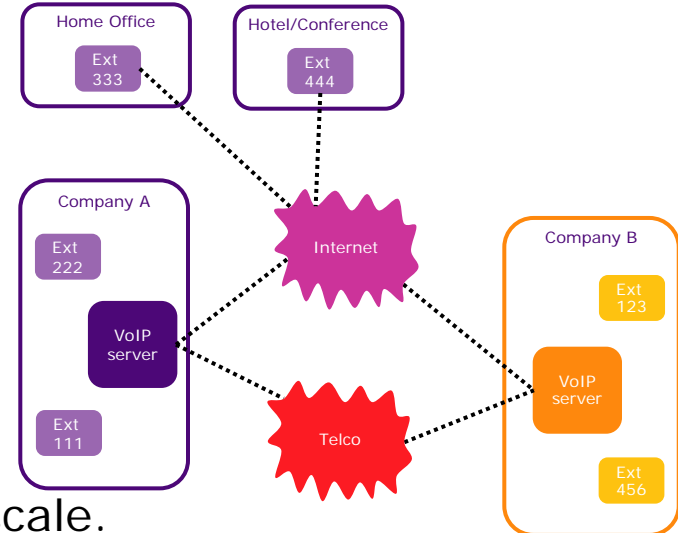
Director of Marketing and Communications

What problem does it solve?



What problem does it solve?

- Company A wants to talk VoIP to company B. It needs to know
 - Does B have a VoIP server?
 - What protocols does it support?
 - What is its IP address?
- With that info:
 - call across the Internet
 - no call charges, just line rental.
- Without it:
 - has to call via a telco
 - pays call charges
- Can pre-configure server, but does not scale.
- Need one way to look this up, for all telephone numbers.



Technical solution

- ENUM solves problem by
 - turning telephone numbers into domain names:
 - finding available services associated with those numbers
- So the number
 - 01865 332211 becomes
 - 1.1.2.2.3.3.5.6.8.1.4.4.e164.arpa
- Special DNS entries describe available services
 - So to say we have can be contacted by VoIP on this number:
 - NAPTR 10 10 "u" "E2U+sip" "!^.*\$!sip:441865332211 @no minet.org.uk!" .
- These domain names and entries are not meant to be directly used by people.

Registries

- e164.arpa is the user tree.
- Each country code (international dialling code) will have a registry
 - UK has +44 4.4.e164.arpa
 - Germany has +49 9.4.e164.arpa
 - Austria has +43 3.4.e164.arpa
 - Eleven countries share +1 1.e164.arpa
- Each registry operates differently
 - Local policy considerations
 - Local telecoms regulator
 - Local dialling plan

ENUM opportunities for registrars

ENUM in the UK

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A decorative graphic consisting of numerous thin, white, wavy lines that flow from the top right towards the bottom left, creating a sense of movement and depth against the solid orange background.

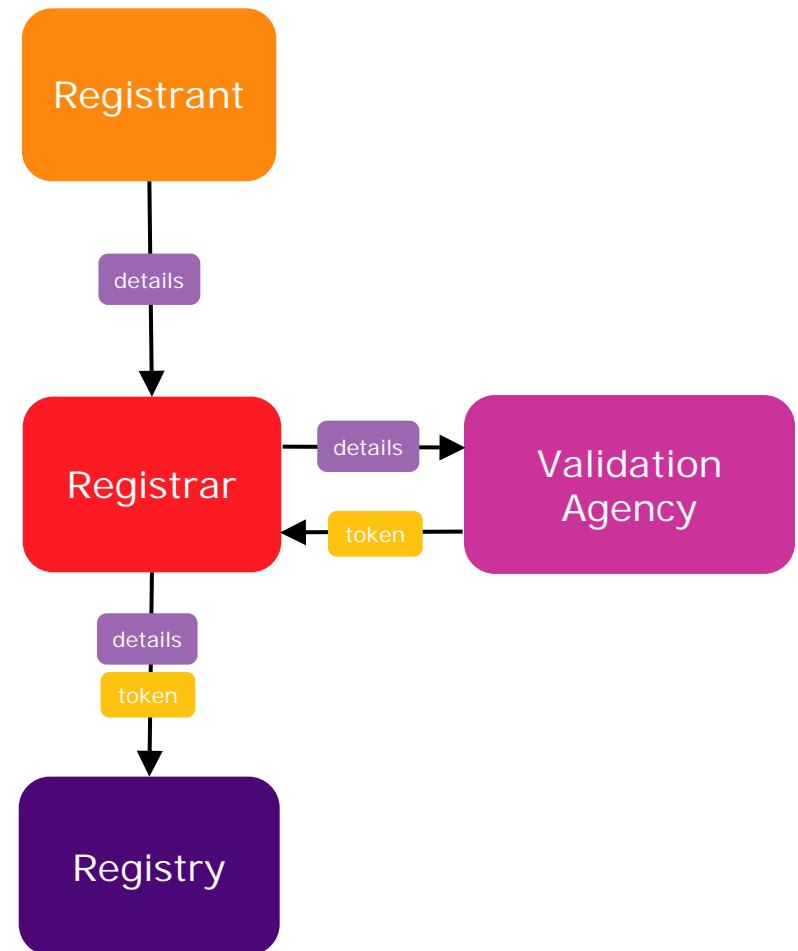
UK ENUM Management

- For 3 years industry consortium (UKEG) ran trials and designed interactions and policies
- DTI issued public consultation in 2005 based on trial
- UKEC now formed
 - Overall management of UK ENUM
 - Not-for-profit, membership organisation
 - Management board and policy advisory group
 - Tendered for 4.4 registry in early 2007
 - Will accredit validation agencies
- We won bid to run 4.4 registry on license from UKEC
 - UK ENUM was available for registrars from 7th October 2008

- The world of telephony is highly regulated
- Major concerns are:
 - Privacy - Protecting personal information
 - Misuse - Cold calling, abusive calls
 - Scams - 'Slamming' customers, fake directories
- UKEC will run policy board with various representatives
- High profile - government/Parliamentary interest

Registration process for UK user ENUM

- Registrant supplies details to Registrar
- Registrar forwards them to Validation Agency (VA)
- VA checks ownership of number - replies with token
- Registrar sends request to Registry with VA token
- Registry creates registration - for one or more numbers
- Registry delegates numbers in 4.4.e164.arpa zone



Key differences from Nominet process

- No direct contract between Registry and Registrant
- All registrations are authenticated
 - So no cyber-squatting, disputes, availability checkers etc
 - You have to prove you 'own' your number
 - VA will expect payment
- One registration can be for many numbers
 - More complex pricing model
- No WHOIS
 - that would be a phone book in reverse

How does ENUM fit with Nominet?

- Fit with our mission
- ENUM is a similar product to domain names
- Uses Domain Name System
- There is a UK specific registry requirement for ENUM
- Our database structure and our registration systems are the appropriate processes to enable us to run the UK ENUM registry
- ENUM registrations are made using EPP
- Makes sense to consumers that .uk domain names and UK ENUM registrations are made through Nominet

Presentation heading

Opportunities for registrars

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The market for ENUM

- No existing market, so we must create one
- Potential market size:
 - The number of phone numbers in the UKOr
 - 2

So why would anyone register an ENUM?

- To enable other people to make free / lower cost calls to them

Potential registrants

- Initially ENUM users will be large registrants
 - Enterprises that use freephone/low cost inbound numbers
 - Call centres for many service related industries
 - Enterprises with large supply chains
 - Supermarkets
 - Enterprises with multiple sites
 - Hotel chains
 - NHS
 - Police force
 - Education
 - Local authority
 - Other networked businesses / communities

Opportunities for registrars

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Potential registrants

- Other business users
- Consumer end-users

Who might be an ENUM registrar?

- VoIP providers using real numbers
- Broadband suppliers – up-sell to quad-play
- Telecommunication companies
- Existing domain name registrars
- Telecoms consultants

Why ENUM may be of interest to existing Nominet registrars

- ENUM is a DNS product:
 - It works
 - It's global
 - It's scaleable
 - It's reliable
 - It's open source
- ENUM registration systems work on similar processes and technologies to domain names
- Well known and trusted supplier
- For existing domain name registrars the addition of ENUM is simply the addition of another service to your account

Validation Agencies

- In some cases the Validation Agency and the ENUM registrar may be the same
- There is an opportunity for provision of ENUM Validation services to other registrar businesses

Vendor ENUM

Increasing support for ENUM in products

- Identify important VoIP products – publish list
- Find out what support they have for ENUM
- If it supports ENUM, test it
- Persuade vendors to add ENUM support
- Some results
 - Cisco have ENUM support in CUBE add on to 28xx routers but not in Call Manager
 - Talking to Nokia about adding it to their series 60 SIP stack

Raising awareness of ENUM

- Speaking at events - Unified Communications 08, Internet World 08
- Brief analysts - Gartner, IDC, etc.
- Public Relations - ENUM listed by BBC as a top ten technology for 2008
- ENUM Federation
 - The ENUM federation is an association of European ENUM registry operators:
 - Austria, Czech Republic, The Netherlands, Ireland, United Kingdom, Germany
 - Share marketing plans to develop best practice and learn from successes and failures
 - Build pan-European market presence
 - Encourage vendors to include ENUM capabilities in hardware and software solutions
 - ENUM inside logo
 - Self-accreditation programme for vendors
 - Network for best practice sharing