The future of registries
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The future of registries

Only the start of the journey

Change is coming

- New technologies all the time
- Always a registry opportunity
- Some will embrace this
- Some will be left behind

Disclaimer

- My own personal analysis
- Crystal ball gazing
- Make your own minds up
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Being prepared

Start from a position of strength

- Central position
- Trusted authority
- Reseller/distribution channel
- Public policy engagement
- High volumes and high reliability

Identify some trends

- From pull to push
- Generic registry objects
- Technical standards - leader or follower?
- Under attack
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From pull to push
VoIP - the biggest game in town

ENUM - our small part in that game

• Telcos have expectations
  – only dependent on themselves
  – deterministic technology
  – quickest call resolution time

• Not the technology that needs to change
  – BIND is fine - we have stats to prove it

• Our assumptions of registry model that need to change
  – how we deliver data
  – how we charge
  – how we stand in relation to others
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The standard registry model

Tackling assumptions one by one

- The normal DNS ‘pull’ model
  - We publish data, they come and get it
  - Critical path to data has lots of owners
  - Not deterministic - can be fast, but can be slow

- The normal registry charging model
  - Pay to have your data publishing
  - Consumer of data gets it for free

- We all stand alone - together
  - Manage our branch of the tree
  - Different types of relationship - and they all work(ish)
The only way to make ENUM fly?

- Deliver the data direct to telcos
  - On their network
  - Resolution time guaranteed

- Why give them this for free
  - Charge them for the feed?
  - Charge them per access?

- Does a telco want 200+ contracts for an ENUM feed?
  - One registry supplies data of many (competition?)
  - Registry confederations

- May need to give them more than NS records!
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Generic registry objects
So what exactly do we do with domains?

- Register
- Modify
- Renew
- Publish
  - To DNS servers, to WHOIS servers
- Cancel
- Transfer
  - Resellers are good
- Enable verification
  - From WHOIS lookup to revocation server
What else could be reusable?

Look at the business model

- Provisioning interface
  - Same automated systems - Email, RRP, EPP etc

- Registrar channel
  - Some might want more than domains to sell
  - Unified billing

- Policy development process?

Generic objects + reusable processes = new products

- ENUM we all know about

- What else matches this model?
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A contrived example

PGP Keyserver

- An add-on to domains
- Restrict registration to registrant of corresponding domain
- Key is signed by registry (enables verification) and published to registry keyserver
- Domain name cancellation means key is removed and signature revoked (another sig)
- Sell through same registrars - linked to domains
- OK - I know PGP isn’t quite like this
  - You get the idea
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Technical standards - leader or follower?
The approach to technical standards

How well do emerging standards fit your way of working?

- DNSSEC is a good example for us
  - Late to get involved
  - Saw a total showstopper - zone file enumeration
  - Lots of time and money to get it corrected

- EPP is another example
  - We were never involved at all
  - Now our customers expect it of us
  - But the data model is a world away from ours
  - The technology is awkward
  - We really should have been involved from the start
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Moving into this space

Registries need to get there first

• Those that do will start to dominate
• They will develop protocols that
  – suit their business
  – suit their infrastructure
  – suit their skills and people
• They will see the edge first
• Beware creeping commoditisation
  – More and more of things we do will be sold in a box
  – so what is so special about running a registry?
Moving away from a home grown industry

Smell the money

• In the beginning was BIND
  – open source, open standards (mostly)
  – but new companies bring new business models

• Manufacturers looking for an edge
  – proprietary interfaces
  – vendor lock-in
  – excessive complexity - home grown solutions impossible

• New open standards can change the entire landscape
  – swap vendors
  – regain the right to write your own code
Three steps to success

Building a Centre of Technical Excellence

• Give your people the time
  – Time to learn the process
  – Time to get involved - start small
  – Time to have the ideas

• Establish wider credibility
  – Technical blog - viral, personalised, huge scope
  – Presentations
  – Open source - write it or support it

• Get into the right mindset
  – Think in terms of protocols
  – Aim high
  – “If you build it we will come”.
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Under attack
Speculators don’t sell domains any more

- All the money is in PPC
- Registering then cancelling before billing
- All that matters is names with traffic
  - Typo-squatting
  - Finding defunct companies
  - Start-ups that miss a trick
- Generic terms are best
  - Follow popular culture
- Some registries already seeing lots of this
Speculator mindset

- If it is not explicitly forbidden ... 
  - What edge does it give?
- Finding loopholes in the system 
  - Shell companies 
  - Buying other people’s access 
  - Playing with the data

Other mindsets

- Harvesting a natural resource
- Exploiting asymmetry
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What does this mean?

Expectations and planning

- Continual struggle
  - almost like an arms race
- Economic models
  - re-stocking fee for domains
- Technical survival
  - Anti-abuse technology in every service
  - Extensive monitoring and alerting
- Learn how the enemy thinks
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Summary
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The essential points

Registries are changing

• We start from a position of strength
• ENUM, telcos and VoIP means huge changes
  – From pull to push
  – New charging
  – Confederations
• Lots of things smell like domains
  – Same basic operations
  – Reusable business process
• Technical standards will become more strategic
• But barbarians are at the gates!
Thank you for listening

• Any questions?

For later reference

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