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# In whose domain: name service in adolescence

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## Talk vs Paper

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- ◆ this talk is on a subset of our paper
- ◆ paper addresses Internet "intellectual infrastructure"
  - history
  - current structure
  - options for supporting the infrastructure
  - who
- ◆ DNS is actually a peripheral issue
- ◆ but this talk looks at the misapplication of DNS

## DNS Functions

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- ◆ database used to
  - return an IP address if given a name
  - return a name if given an IP address
- ◆ surrogate directory service
  - locate a known organization
  - easy to remember "names"

## DNS as Database

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- ◆ basically no current technical problem
- ◆ scaling issue in the future
  - .com currently >600K names
  - not clear when it will be a problem
- ◆ some worry about size of zone transfers
  - Incremental Zone Transfer (RFC 1995) may help

## DNS as Directory

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- ◆ users assume that a DN relates to a company name
- ◆ want to be able to "guess"
  - IBM's web page *must* be at "www.ibm.com"
- ◆ want to have easy to remember names

## DNS as Directory-bounded names

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- ◆ in non-DNS world a name is bounded by
  - geography
  - line of business
  - logo
  - full name
- ◆ DNS names bounded only by higher level domain
  - e.g., - .com is global

## Advantages of Bounding

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- ◆ restrict scope of lookup
  - just use yellow pages for Seattle
- ◆ additional qualifiers
  - Acme Glass not the same as Acme Pizza
  - Acme Glass in Seattle not the same as Acme Glass in Boston

## DNS != Directory

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- ◆ the DNS does not make a good directory
- ◆ have to define/develop a good directory
- ◆ known this for years - why not resolved?

## Directory Requirements

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- ◆ "find" site/computer given simple information
  - company name
  - service name (e.g., www)
- ◆ need interactive & non interactive forms
  - browser can give options to select from
  - need email address for business card
  - need addresses for email exploder

## Directory Requirements, contd.

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- ◆ easily maintained by "users"
- ◆ to replace DNS a directory must be
  - largely invisible
  - largely intuitive
- ◆ simple (small) code
- ◆ simple operation

## X.500 as Example

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- ◆ ISO's X.500 been around for a long time  
why not use that?
- ◆ proven to complex
- ◆ names not user friendly
- ◆ operational model does not fit current Internet

## X.500 as Albatross

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- ◆ assumption is that any global directory system  
must be to complex for human use
- ◆ not true  
see draft-klensin-tld-whois-00.txt

## DNS as a Dead End

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- ◆ DNS can not continue to be used as directory
  - new TLDs would not change that fact
  - who can remember N new TLDs & who is in which
- ◆ need real effort to:
  - define requirements for Internet directory(ies)
  - develop an open standard for directory(ies)
- ◆ may not be the same solution to both problems (interactive & non-interactive)

## Meta Requirements

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- ◆ must provide better resource location
- ◆ must be consistent with existing
  - authorities
  - boundaries
  - principles

## DNS as Directory

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just say no