#ICANN50
Agenda

• Introduction
• Recent Activity
• The Plan
• Call to Action
Universal Acceptance
A Changing World of Identifiers
At the Dawn of the TLD Space

• “com/net/org” and the ISO 3166 two-letter codes
  o All but one [arpa.] three letters or shorter
  o All in “plain” ASCII
  o No changes to DNS root beyond new ISO 3166 codes

• Email addresses (mailbox names) were ASCII

• Assumptions were made, “burned in”
  o User interfaces would list valid TLDs
  o Security rules were built according to the list
Initial TLD Expansions

• Expansion approved in 2000 and again 2003
  o Set of gTLDs in 2000
  o Set of sTLDs in 2003
  o First non-ccTLD changes since 1988
  o Some names were longer (4 letters and more)

• Broke assumptions about valid TLDs, name length
IDN ccTLDs Arrive

• Expansion into IDN ccTLDs
  o First encoding of operating non-ASCII TLDs
    ▪ IDN test TLDs were not operational (little impact)
  o Names were much longer (more letters) than earlier sets
  o Right-to-left scripts challenged user interfaces
• Broke assumptions regarding ASCII in TLD names
2012 gTLD Program

• Hundreds of new gTLDs were proposed
  ○ First of these TLDs delegated in October 2013
    ▪ More long ASCII names
    ▪ More IDN (non-ASCII) names
  ○ Many delegated every week

• Broke assumptions of “no/few changes” to the root
Internationalized Email

• Email names extended from ASCII to UTF8
  ○ IDN TLDs enabled only this
    ▪ 水手麻烦@东西.测试.
  ○ Internationalized email (RFC 6530) enables this
    ▪ 麻烦先生@东西.测试.

• Broke assumptions in email systems and viewers
Bumps In the Road
Browsers Not Recognizing TLDs

Search

Global Result Example
www.global.example
Buy this product or service. We are an example company that handles an
Browsers Not Rendering Correct Script

www.nic.测试.

www.nic.xn--0zwm56d.
Internationalized Email Not Accepted

Message

Send

From: Francisco

To: 麻烦先生@导航.中国

Cc: mistertrouble@navigation.china

Subject: Urgent! New project for you
Road Ahead
Universal Acceptance Challenges

• Applications and services must
  o Enable use of whatever TLD is delegated
  o Display domain and email names correctly
  o Work correctly for any name
  o Implement appropriate levels of security
ICANN 49

• Much has been said, time to move forward
  o Develop a roadmap based on community input

• ICANN to play a facilitator role
  o Motivate parties to participate
  o Foster communications
  o Support a common context
Recent Activity
External Discussions
APTLD Member Meeting

• Session dedicated to Universal Acceptance
  o Presentations and panel, including ICANN
  o Wide spread interest in topic, different perspectives

• Lessons
  o Vendor willingness and challenges
  o Legacy code base delaying progress
  o User community refining requirements
CENTR Tech Member Meeting

• Presentation on Universal Acceptance
  o Rising focus in region

• Lessons
  o Appropriate scope is TLDs, domain and email addresses
  o Realistic view of challenges for registries
  o Enhancing usability of Internet is a goal
Developing A Plan

• Based on ICANN 49 panel session
  o Spoke with registries, software/service/solutions providers

• Participated in a few real cases of problems
  o Real reports, used as trials of plan, build connections

• Discussed at APTLD and CENTR meetings

• Drafted a plan for ICANN activity
  o Document is currently open for public comment
The Plan
Formalize the Problem Statement
TLD Problem Statement

- Domain names in a TLD must be useable in applications regardless of the written script, and length or newness of the TLD
  - This captures the troubles due to broken assumptions, we now have
    - Non-ASCII/IDN TLDs
    - Longer TLD names
    - Rapid introduction of TLDs
  - Useable is an open term, to be defined by context
How Does Internationalized Email Fit?

• Internationalized email is a driver for IDN TLD adoption
  - Cultures that benefit from IDN want to benefit from email
  - A “killer app” even though not a technological enabler

• Referring to “useable”
  - Define domain names to be useable when email addresses of the same script are fully functional
Identify Stakeholder Groups
Domain Name Industry & Associations

- ICANN
- Registries
- Registrars
- DNS Hosting Vendors
- Trade Associations
User Communities

- Language specific
- Societies relying on communication media
Application Developers/Service Providers

- **Distributors of software**
  - Closed and open source applications
  - Mobile device apps
- **Service providers**
  - Social media sites
  - Webmail providers
Protocol and Operational Standards

• Protocol defining bodies
  o IETF
  o W3C
  o Unicode Consortium

• Operations best practice bodies
  o DNS-related
  o Network services
System and Network Operators

- IT Departments
  - End-user system administrators
  - Email administrators
  - Network administrators

- Internet Service Providers
Security Practitioners

- Security Protocol and Operations Engineers
- Security Policy (or Firewall) Administrators
- Threat Advisors
Facilitation
Motivate Activity

• Listening to stakeholders to gain insight
  o To grow the Internet, have to look to new sources for inspiration

• Educating audiences when needed
  o ASCII and Internet history go hand in hand, need to break old habits

• Identify gaps in energy, activity, focus
Foster Communications

• Connect stakeholders
  o Introduce when needed, help navigate

• Provide on-line collaboration
  o Remove the time and distance barrier
  o Open, transparent review of approaches

• Arrange forum discussions
Support Common Context

• Need for commonality in solution approaches
  o Novel solutions work against interoperability

• Encourage an open and transparent approach to solutions

• Document lessons learned
Areas of Attention
Domain Name Industry Focus

• Enablers
  o If registration and DNS hosting don’t work, nothing else can be built

• Familiarity
  o ICANN has existing relationships to rely upon
Broader Horizon

• Covers social media sites, webmail, browsers, etc.
  o List is unstructured to avoid setting incorrect priorities

• Work is progressing here
  o Want to tap in to learn
  o Perhaps even get ahead and help
Establishing a Reporting Mechanism

User Communities

This doesn’t work

Report Form

ICANN

Application Vendors & Service Providers

Protocol & Operational Standards Bodies

Summary of Reports

Report

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Call to Action
What’s In It for Me?
Domain Name Industry & Association

• Some of the challenges ahead
  o Open nameserver names (IDN) and contact information (email) to all scripts
  o Provide native-script tools for testing IDN

• The payoff
  o Foster user choice – more avenues for registration
  o Build consumer confidence – work in their script
  o Competition – permit registrants flexibility in naming
User Community

• Some of the challenges ahead
  o Define what constitutes “usable”
  o Provide locale and cultural or business use detail
  o Determine way to measure progress towards goal

• The payoff
  o Get the Internet you want
App Vendors/Service Providers

• Some of the challenges ahead
  o Improve timeliness and accuracy in recognizing TLDs
  o Upgrade user interfaces, many improvements possible
  o Keep mobile applications on par

• The payoff
  o Wider use through growth of the Internet population
  o Expand access via new devices (mobile, tablet)
Protocol and Operations Standards

• Some of the challenges ahead
  o Generate transition plans
  o Document testing criteria

• The payoff
  o Raising the population of users
  o Improving the network
  o Enabling further innovation
System and Network Operators

• Some of the challenges ahead
  o Selecting and deploying tools that remove barriers
  o Testing, trialing configurations

• The payoff
  o Fewer trouble tickets
  o More productive troubleshooting
Security Practitioners

• Some of the challenges ahead
  o Develop safe protocols for non-ASCII identifiers
  o Develop rules to avoid “confusingly similar” names
  o Build understandable, auditable (firewall) rules
  o Limit false positive alarms

• The payoff
  o Safer Internet

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Next Steps

• Draft roadmap is now open for public comment

• Publish final roadmap
  o Include public comments

• Follow the roadmap
  o Perform the facilitation role (or as advised by the community)
Questions & Answers

• Draft Roadmap Public Comment
  - Other resources listed on that page
Upcoming Global Domains Division Sessions

Check schedule for times & locations: http://london50.icann.org/schedule

• 25 June 2014
  - Whiteboarding Session with IRTP - C IRT
  - IDN Root Zone LGR Generation Panels Workshop
  - ICANN’s Security, Stability & Resiliency Team Outreach Session
  - New gTLD Registry Operator Engagement
  - User Workshop for GDD Portal