

# Internationalized Domain Names Evolution with emphasis on Africa Region

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# Outline

- What are IDNs?
- IDN Introduction timeline
- State of Play in the Africa Region

# What are Internationalized Domain Names

Source: Eurid and Unesco report on IDNs State of Play 2011

Domain names, the Internet's addressing system, work because they are interoperable with IP addresses and resolve uniquely.

This means that any user, anywhere in the world on any network, can get to the same destination by typing in a domain name (as part of a website or email address). The plan to internationalise the scripts supported within the Domain Name System (DNS) is almost as old as the Internet itself. However, technical constraints and the overriding priority of interoperability resulted in a restricted script

within the DNS : ASC II a to z, 0 to 9 and the hyphen<sup>2</sup>. From the early 1990s, internationalised (non-Latin) scripts became available in email content (as distinct from addresses) through Multipurpose Internet Mail Extensions (MIME), but early proposals to use this technology for domain names were not adopted.

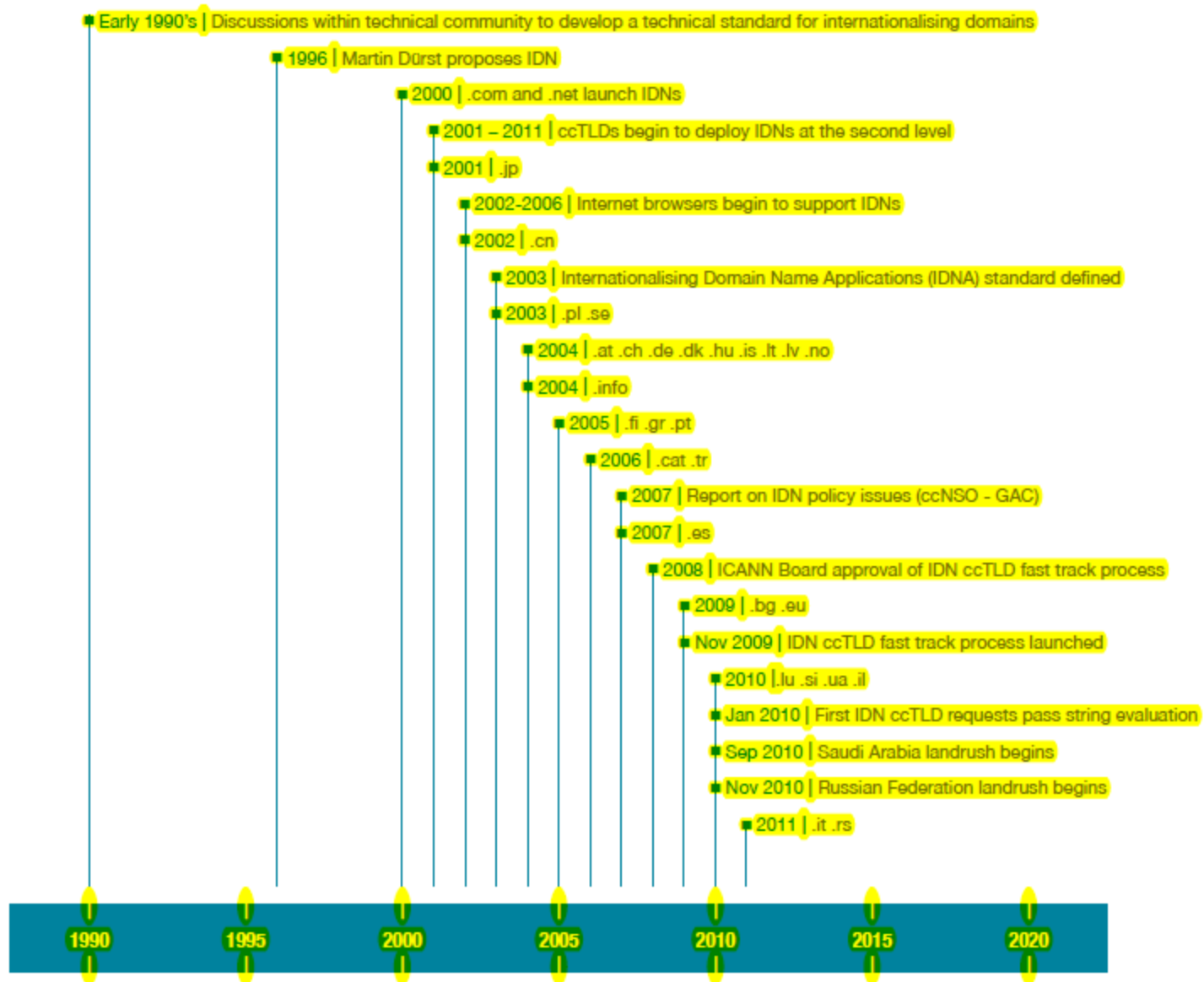
In 1996, Martin Dürst of the University of Zürich proposed a standardised approach internationalising domain names.

Discussions within the Internet Engineering Task Force (IETF) eventually evolved into the Internationalising Domain Name Applications (IDNA) standard which allowed the transliteration or conversion between Unicode domain names and their ASC II-based equivalents (prefixed with xn--), enabling users to navigate the Internet using their own language.

# Countries with IDNs in Africa

- Egypt
- Tunisia

Figure 1 – IDN introduction timeline



# ccTLDs with IDNs in the Internet root zone

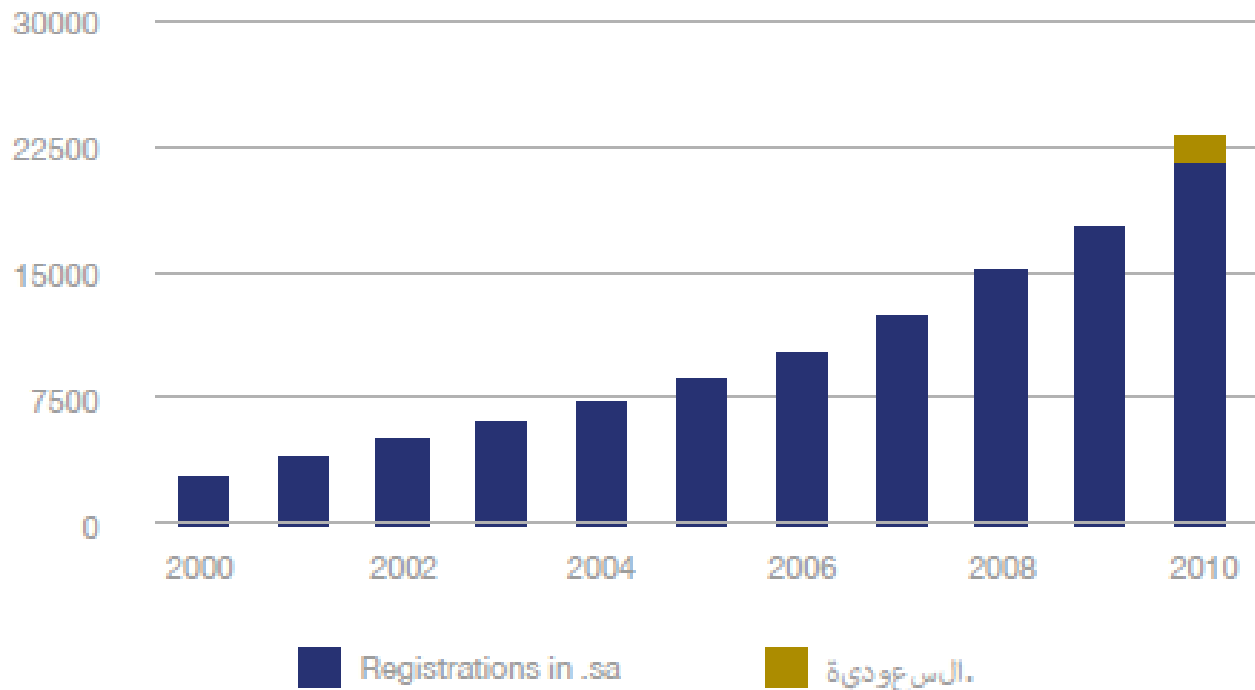
Figure 2 – ccTLDs with IDNs in the Internet root zone, April 2011 (Source, ICANN)

ccTLD	Country/Territory	String
CN	China	中国
EG	Egypt	مصر
HK	Hong Kong	香港
IN	India	भारत
		بھارت
		xn--fpcrj9c3d <sup>B</sup>
		இந்திய
		भारत
		xn--45brj9c
		இந்தியா
JO	Jordan	الأردن
KR	Korea, Republic of	한국
PS	Palestinian Territory Occ.	فلسطين

ccTLD	Country/Territory	String
QA	Qatar	قطر
RU	Russian Federation	рф
SA	Saudi Arabia	السعودية
SG	Singapore	新加坡
		சிங்கப்பூர்
LK	Sri Lanka	xn--fz02c9e2c
		இலங்கை
SY	Syrian Arab Republic	سورية
TW	Taiwan	台灣
		台湾
TH	Thailand	ไทย
TN	Tunisia	تونس
AE	United Arab Emirates	امارات

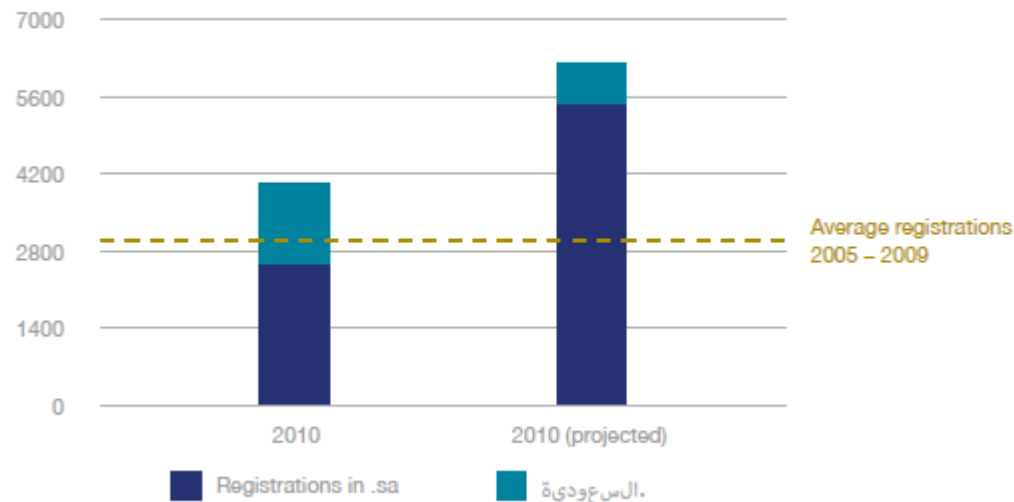
# Case Study ME (Saudi Arabia)

Figure 11 – Growth in .sa domain name registrations



According to the **السعودية** registry, the Saudi Network Information Center, **السعودية** domain names currently account for 7% of all registrations. Using this percentage and the overall growth of the TLD to date, registrations for 2011 are projected to more than double the average registration rate (2006 to 2009) on the assumption that current registration rates remain constant (figure 12).

**Figure 12 – .sa and **السعودية** registrations, 2010-2011**





# Barriers to uptake of IDNs

## 5.1 Email and other applications

In the EURid/CENTR survey, 82% of participants highlighted the addition of email functionality as the single change that would improve IDN uptake. The basis for this view is that email is a key aspect of domain functionality and while it is unavailable for IDNs their usefulness is limited. This is the case also with IDN ccTLDs. For example, the email service on Cyrillic domains operates in the form name@домен.рф, although some hosting companies can already support the email service имя@домен.рф.

Work on IDN email compatibility continues. The IETF is currently working on the standards for IDN email and it is anticipated that full email functionality will be available by the end of 2012. Advances in this area will show the extent to which the email issue has been the barrier to uptake of IDNs.

Other suggestions for improvements were “full support by the mobile environment” and the “ability to use IDNs in all applications including WHOIS and web browsers”.

## 5.2 User experience – registration and use

In general, the easier it is to register in a domain, the more popular it becomes. Ease of IDN registration varies across the industry. One of the world’s largest registrars told us that they only accept IDN registrations in their ASCII-based (xn--) form and provide no feedback to users as to the internationalised Unicode version. According to the EURid/CENTR survey, TLDs take a variety of approaches in registering IDNs (figure 16).

# Conclusions

The introduction of IDNs in the Internet root domain is an important milestone in the development of multilingualism on the Internet. This is especially so for non-Latin scripts, including Arabic and Cyrillic. The success of the .pq landrush highlights the impact of user education and marketing on public demand. Implementation of key services like email will further benefit uptake, making IDNs fully useable for the first time.

Early experiences of deploying IDN.IDN are exciting, despite the lack of email functionality. As the IDN.IDNs go through a full registration lifecycle, the degree of user acceptance will become clearer, for example through an analysis of renewal rates. The experience of European ccTLDs that have deployed Latin-script IDNs at the second level (IDN.TLD) suggests that IDN registrations tend to enjoy a higher growth rate than their general register and it will be interesting to compare the IDN.IDN renewal rates with those who have deployed at the second level.

IDNs are only one factor in achieving a multilingual Internet. There is still much to do, including securing basic Internet access for the majority of the world's population, and strengthening the environment for creating local language content. However, IDNs do provide an easy to measure, reliable up-to-date source of data. Furthermore, the links between IDN registrations and local languages are strong: eg the intensity of .eu IDN registrations in Greece (Greek script) and Bulgaria (Cyrillic script). This link opens up the potential for further research into multilingual content, using the "universe" of IDN registrations as a starting point to detect content in languages matching particular IDN scripts.

# State of play in Africa

- AFTLD IDN Working Group
- AFTLD Universal Acceptance Working Group
- ccTLD UA Bootcamp at the Africa Internet Summit September 2023

# Source

EURid, in collaboration with UNESCO, examines the global use of Internationalised Domain Names (IDNs), which support non-Latin scripts and multilingualism online.