

# UA and EAI Challenges in African Communities

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# UA Brief Introduction – The problem

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## 1 New gTLDs

- Currently there are 1238 new gTLDs
- In the next few years over 1300 new domain strings could be available
- The new gTLD maybe longer than the traditional gTLD, like .school or .bank
- Email addresses may contain a new gTLD domain name

## 2 Internationalized Domain Names (IDNs)

- The DNS was originally created to support domain names written in Latin script using the (ASCII) Format
- The content of a web page could be in a non-Latin script but the domain name had to be in Latin script
- Punycode algorithm was developed to convert Unicode (UTF 8) which supports non-Latin script to ASCII
- IDNs are domain names that include Unicode

## 3 EAI

- Are email addresses with IDNs in the domain name part and/or non-ascii characters in the local part of the mailbox name
- Using an IDN email address might not work.

The problem: Applications and software in many cases do not know how to recognize longer TLDs, IDNs and EAI. Many systems and software cannot accept, validate, store, process or display the new URLs and EAI.

# UA Brief Introduction – end user experience

Users' experiences include:

- Valid emails fail to send or receive
  - Domain names and email addresses are not accepted by online applications or services
  - Domain names are treated as a search term in the address bar instead of a domain name
  - Linkification
- Internet users are the ones who define the worth of IDNs and new gTLDs
- Internet user experience is what matters



Image source (without text in black): [www.icann.org](http://www.icann.org)

# UA Brief Introduction – Who does the problem of UA readiness affect?

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## 1 Registries, Registrars and Registrants

- Registrants' registrations under new gTLDs and IDNs are limited
- Registrars are reluctant to carry new extensions
- Registries of new gTLDs and IDNs are being affected

## 2 Internet Users

- Internet users are unable to make use of the expansion of the domain name space and unable to make use of their EAI.

## 3 The whole Internet community

- Limiting consumers choices
- limiting the expansion of the Internet and affecting the existence of a global and inclusive Internet
- Hindering innovation and new ideas as gTLDs and IDNs define new opportunities
- Owners of outdated online systems and software, where eventually users will look for alternatives that work.

# UA Brief Introduction – The solution

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- Universal acceptance is a technical compliance process by which all domain names and email addresses can be used consistently by Internet enabled applications, services, devices and systems.
- Old applications, software, systems and devices must be updated and new applications must be built to comply with UA standards.
- Human side, registrants or potential registrants need to be aware about the new opportunities that new gTLDs and IDNs bring to the domain name space.



source: [www.UASG.tech](http://www.UASG.tech)

# The Internet and UA in Africa

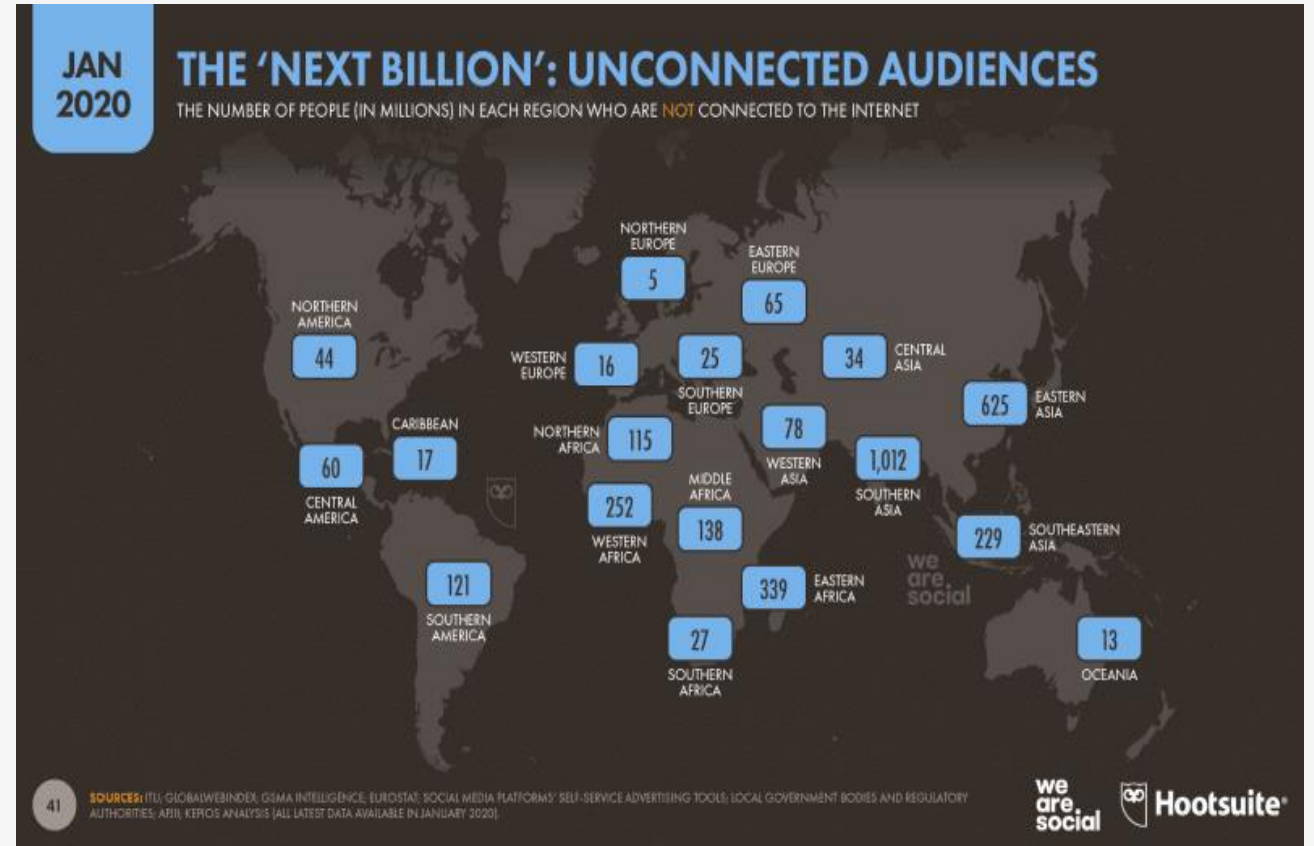
About 3.2 billion people worldwide are still unconnected, 870 million people of them are in Africa (27% of the unconnected)

The COVID-19 pandemic has emphasized the digital divide in Africa with the lockdown and more people working from home

## New gTLDs and IDNs:

- Speak to users affiliations & Interests. Offer Africans a recognized place on the Internet
- Offer socio-economic benefits to Africa providing services entirely in local scripts and promoting economic inclusion across the continent
- Create a digital identity

Given the population that is still to come online from Africa and what new gTLDs, IDNs and EAI bring to the communities, from a commercial and economic point of view investing in UA makes sense.



source: <https://thenextweb.com/podium/2020/01/30/digital-trends-2020-every-single-stat-you-need-to-know-about-the-internet/>

# The Internet and UA in Africa

- In Africa there are 6 IDN ccTLDs and 4 new gTLDs

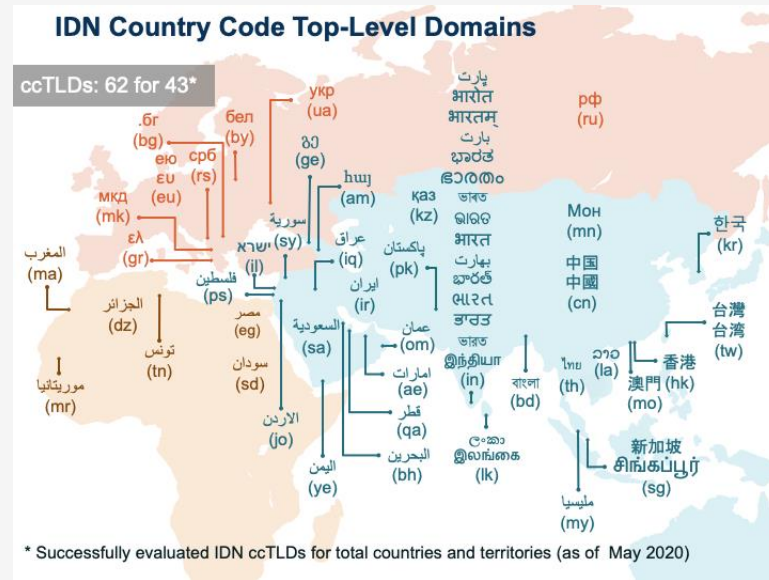
- The Root zone label generation rules is now covering the Arabic script and the Ethiopic script

- As of March 2019 -The majority of web traffic in leading digital markets in Africa originated from mobile devices

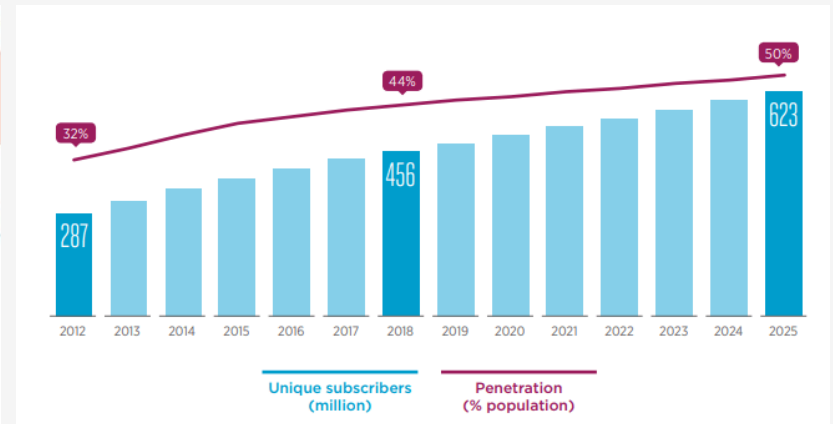
- Sub-Saharan Africa continues to have the fastest growing mobile economy.

- The annual growth in the Internet users in Africa is +10% accounting for 42 million compared to +1.6% in Europe 11 million and +2.3% in the Americas 18 million

source: <https://thenextweb.com/podium/2020/01/30/digital-trends-2020-every-single-stat-you-need-to-know-about-the-internet>



source: [www.icann.org](http://www.icann.org)



Source: The Mobile Economy in Sub-Saharan Africa 2019. GSMA 2019

<https://www.brookings.edu/blog/africa-in-focus/2019/09/26/figure-of-the-week-africas-growing-mobile-economy/>

- Given the promising potential in the African domain name market investing in UA readiness makes sense.
- Given the growing mobile economy in Africa, making mobile apps UA ready and having EAI apps for mobile platforms makes sense.



# Challenges for UA in Africa

- Underlying Internet infrastructure. The lack of resources to update the ICT infrastructure, including required UA readiness.
- The lack of web content in local languages is an obstacle towards the expansion of the IDNs in Africa, leading to lack of interest in investing in UA in relation to IDNs
- Lack of awareness about the existence of new gTLDs and IDNs leading to lack of demand and contributing to the chicken and egg problem
- The public sector not yet ready to lead the way, fully adopt UA and create incentives to the private sector to follow UA is not yet a priority



Image source: <https://thenextweb.com/podium/2020/01/30/digital-trends-2020-every-single-stat-you-need-to-know-about-the-internet/>



# Solution for UA readiness in Africa

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- Governments considering IDNs a public good as they promote digital and economic inclusion. The nations digital inclusion strategy should include UA readiness
- Governments creating incentives to private sectors to become UA ready, like contracts with suppliers could have standard clauses requiring UA readiness
- Governments considering promoting EAI by cooperating with the private sector to offer EAI with ASCII email boxes
- Local content in native languages is essential for the uptake of registrations of IDNs. E-government services increase local content and could encourage the CTOs in charge to update the systems to be UA complaint
- The DNS Entrepreneurship Center (DNS-EC) and similar bodies adopting the topic and working on engaging the academic sector, students and researchers, the private sector and the community At-Large
- Creating platforms like the DNS-EC for the community to share their experiences and work on connecting compliant platforms

# Solution for UA readiness in Africa

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- Creating local initiatives that could work with the government, the community and groups working on UA readiness to:
  - ❑ Develop the skills of IT people to carry on the adoption of UA readiness
  - ❑ Develop EAI-ready open source email and updating open source programming language libraries
  - ❑ Provide specific material and documentation about how the systems could be updated and developed
  - ❑ Raise the awareness of the local communities about the existence of new gTLDs and IDNs in order to trigger the demand side and influence the willingness of the IT companies to update their systems
  - ❑ Make Email apps for mobile platforms and software UA ready
  - ❑ Listen to the African community in order to get an insight about what needs to be done. Listen to the public and private sector across the countries in Africa

# Questions?

Useful links

<https://uasg.tech/>

<https://uasg.tech/information/>

