Executive Summary

The Government of the State of Rajasthan in India's **RajMail** project has provided all its citizens with a free email address in either Hindi or English, using its own secure email platform provided by local company XgenPlus. This is an important step in the state's eGovernance project.

Situation Overview

Rajasthan is a state in the north western region of India. As a key driver of India's economy, which is one of the fastest growing large economies in the world, the government of Rajasthan stands apart as a worldwide leader in helping its 69 million residents reap the social, cultural and economic benefits of the Internet.

To understand why Rajasthan is a pioneer, one must first understand a basic truth about the Internet's naming structure, the Domain Name System (DNS). The technologies underpinning the Internet are constantly evolving, yet the benefits of these changes are distributed unevenly. The DNS Root Zone has experienced explosive growth since 2010, with more than 1,500 top-level domains (TLDs) now including suffixes that speak to individuals' interests and affiliations (e.g., .COLLEGE or .PARIS) or are in languages other than English (e.g., .世界 or .ОНЛАЙН), known as Internationalized Domain Names, or IDNs. But while the infrastructure has changed dramatically, the software that supports Internet-enabled applications has not. It is still based on rules set up more than two decades ago, which heavily favor the English script – and by extension, the regions of the world where English is the dominant language.

Due to the rapidly changing domain name landscape and outdated software, many applications do not recognize or appropriately process these new domain names or emails associated with them. This causes inconsistencies in how TLDs are handled by systems around the world. Universal Acceptance (UA) is the technical compliance process that allows organizations to ensure consistency across all domain names and email addresses wherever users are, and whatever language they choose to use on the Internet. An important component of UA is Email Address Internationalization (EAI), which allows email addresses to use non-English scripts. UA-compliance helps ensure that users around the world can experience the full benefits of the Internet.

The government of Rajasthan recognized that there was a need to make it easier for residents to engage with government services, and wanted to be able to better communicate with its citizens directly. So, it embarked on an ambitious project to provide every resident with a free email address in Hindi or English, and in doing so blazed a trail toward UA in India – which has 22 official languages and is one of the most linguistically and demographically diverse countries on Earth.

Universal Acceptance Case Study:

Government of Rajasthan

"India is a country that is very divided by language. Giving people a way to experience the Internet in their native language opens up a world of opportunities for each citizen of India as well as the country's economy as a whole. It is our hope that the RajMail project will inspire other government leaders to follow suit and bring the benefits of the Internet to all the people of India."

— Vasundhara Raje
Former Chief Minister, Rajasthan State

Universal Acceptance Approach

In 2015, Rajasthan introduced the e-Governance IT and ITES Policy, outlining the next chapter for e-Governance and defining a common framework for the state's online architecture and services. The government's goal was to create an incentive and a mechanism for bringing its residents online. A crucial component of this policy was working with Rajasthan-based firm XgenPlus to create a RajMail email account, in either Hindi or English, for every resident. In late 2017, RajMail was made available to all of Rajasthan's 69 million residents, a majority of whom own and access the Internet through smartphones.

Executing a project of this scale meant addressing two key obstacles. First, the government needed the ability to authenticate each user uniquely, without discriminating, by providing equal access to every resident. To address this issue, XgenPlus – which handled the installation, configuration and integration – integrated each user's account with their government-issued unique identity number (UID), thus providing identity confirmation for each account. The second issue was one of the technology itself, which is not widely commercially available. XgenPlus is one of the few operators that supports hosting non-English email addresses.

The Infrastructure

RajMail is hosted on the Rajasthan State Data Center run by the Department of Information Technology and Communications (DoITC) and is managed by the state's own IT team, with at least initial support from XgenPlus.

The application and data are stored on the Rajasthan State Data Center and deployed in a mirrored environment using the DoITC's diverse infrastructure.

Because the project was based on existing products, it took only 30 days from set-up to configuration to integration. The only significant development effort was to integrate the email accounts with each citizen's UID and Rajasthan State Single Sign-On infrastructure.

Promotion

The government of Rajasthan is promoting RajMail via banners, events, multi-media visual displays on major highways, and also as a default footer on all official government email communications. Residents can also find information about RajMail at information kiosks located throughout the state.

About:

RajMail Software

The RajMail software consists of:

* XgenPluse EAI-capable mail servers – providing the Mail Transport Agent (MTA) services, mail storage, etc. These are running on Redhat Linux operating system and Postgresql database.

* The XgenPlus MTA also supports POP3 and IMAP access by third-party MUAs (end user mail clients) such as Microsoft's Outlook 2016. This means that users don't have to use the RajMail client if they have a different preferred email client.

* SPAMJadoo, which is an EAI-ready anti-abuse, anti-spam, anti-malware filter software.

* Web-based MUA (Mail User Agent) that provides access to the mail from any browser.

* RajMail – a custom configuration of the XgenPlus email client for iOS and Android.

"With the RajMail project, Rajasthan has established itself as a leader in India's digital transformation. The UASG is proud to recognize the work of the Rajasthan government and their partner XgenPlus for this important initiative in bringing millions of people online."

— Ram Mohan
Chair, UASG

The government of Rajasthan has also made its own email set-up EAI-ready. Prior to this e-Governance initiative, Rajasthan government departments were largely fragmented. In order to speed up implementation and unify under a common vision and strategy, Rajasthan's government introduced a holistic e-Governance architecture spanning the state and departments.

In order for the government to spread awareness of the RajMail program and larger e-Governance initiatives, they introduced incentives for local businesses making investments to help push this IT policy forward, such as reduced land taxes, reduced VAT on goods and services like electricity, and subsidies for private sector ISPs[1]. Another core component of the digitization of Rajasthan government was the automation of services, making it easier for citizens to access public services.

The Future

Rajasthan's government has not yet reached 100 percent UA compliance across its web properties; the process is ongoing. The state intends to continue making progress on UA and making sure that all their services can be accessed using an EAI address. They have now started, including a UASG-recommended clause[2] in their tendering documents to ensure that future IT products are compliant.

The state's DoITC and XgenPlus are also working with existing businesses to make their own systems UA-ready and to make sure that their email systems can at least receive (and send) EAI addresses.

The government is also providing free email hosting to all start-ups based in Rajasthan, so that they can have their own EAI email addresses.

Rajasthan's government did not wait until all conditions were perfect before implementing RajMail and other UA initiatives. The state is taking incremental steps while planning its program of work over the next few years, all in service of its vision for a more linguistically diverse Internet.

About:

Rajasthan

* The capital of Rajasthan is Jaipur.

* Rajasthan means "The Abode of the Rajas."

* At 342,238 square km (132,139 square miles), it is the largest state in India based on area.

* Chief Minister Vasundhara Raje was the state's first female chief minister, who was elected to office in 2003 (serving until 2008), and again in 2013 (serving until 2018).

* Population: 69 million

* Primary industries: agriculture, manufacturing and tourism

* Internet penetration: 7.3 million[3]

[1] http://rajasthan.gov.in/wp-content/uploads/2018/08/IT-Policy-2015.pdf

[2] https://uasg.tech/wp-content/uploads/2017/06/UA009-Quick-Guide-to-Tender-and-Contractual-Documents-16-04-28.pdf

[3] https://inc42.com/buzz/digital-rajasthan-yatra-tracking-rajasthans-tech-revolution-plan-for-next-10-years-in-10-days-live-blog/

सत्यमेव जयते
राजस्थान सरकार
Government of Rajasthan

Results and Implications

While this initiative is expected to be a multi-year effort, more than 4 million people signed up for email accounts via RajMail in its first 10 months. With 7.3 million Internet users in Rajasthan as of 2016[4], more than half of the state's Internet users have opted in to RajMail. In addition to providing early adopter residents with a sense of digital identity and a means of accessing the Internet in their native language, Rajasthan's government has provided a blueprint for other government leaders in India and other countries who are grappling with similar challenges. English speakers can and always have been able to access the Internet in a powerful way. But only 20 percent of the world's population speaks English. In order to bring the next billion Internet users online, these users and others around the globe will need to be able to navigate the Internet in their native languages.

With RajMail, Rajasthan residents have been equipped with a powerful tool for engaging with their government, with business and with society. Initial progress is good, but more remains to be done. Until Universal Acceptance is truly universal, some users with email addresses in non-English scripts (EAI addresses) will be locked out from online services.

That's why the Universal Acceptance Steering Group (UASG), a consortium of more than 120 companies including Afilias, Apple, GoDaddy, Google, ICANN, Microsoft, Verisign and XgenPlus, is working to address UA readiness issues and provide support. The UASG exists to help organizations ensure their systems are UA-ready and able to accept all domain names and email addresses in any valid script.

In November 2018, the UASG recognized the former Chief Minister of Rajasthan, Vasundhara Raje, with a **Universal Acceptance Thought Leader Award** for her work on RajMail. Government and business leaders who would like more information about Universal Acceptance or the RajMail project are encouraged to get in touch with the UASG at https://uasg.tech/contact/.

About:

UASG

The Universal Acceptance Steering Group is an Internet community initiative that was founded in February 2015 and tasked with undertaking activities that will effectively promote the Universal Acceptance of all valid domain names and email addresses. The group is made up of members from more than 120 companies (including Apple, GoDaddy, Google, Microsoft and Verisign), governments and community groups. The UASG receives significant financial and administrative support from ICANN. For more information, visit https://uasg.tech/.

[4] https://inc42.com/buzz/digital-rajasthan-yatra-tracking-rajasthans-tech-revolution-plan-for-next-10-years-in-10-days-live-blog/

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