

**SDG 9: Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation**

Target 9.B Support domestic technology development, research and innovation in developing countries...

Target 9.C Significantly increase access to information and communications technology

**Is UA-readiness a component or aspect of “resilient infrastructure”?**

| Short answer             | Long answer   | In short  |
|--------------------------|---|---|
| Yes                      | One of the reasons why the Internet did not fragment back in the late 2000s was because ICANN expedited the implementation of IDNs at the top level in what became known as the "IDN ccTLD Fast Track". This gesture showed the world that there was interest in making the DNS inclusive of all peoples. We need to remember that a single transnational DNS is a <i>voluntary</i> decision, that any country can step out of if they decide to. Therefore, promoting inclusion is more than a matter of good will, it is part and parcel of a resilient infrastructure.   | UA can foster consensus for a globally-unique Internet  |
| Yes, though only weakly. | Stable RFCs exist and implementations “in the wild” based on those RFCs also exist. Any system which cannot accommodate these new standards must at least be able to “fail safe” when they are encountered, even if the functionality intended by those RFCs is not supported. It can be argued that any system which does not “fail safe” reduces the resiliency to some degree.   | ?   |
| No                       | UA-readiness helps ensure the Internet’s reach. The term “resilient infrastructure” has a specific meaning, that is likely too precise for the outcome of a UA ready product. <sup>1</sup>  | Resilient infrastructure can exist without UA   |
| Yes                      | Domain names form a core part of the Internet’s infrastructure. The domain name system’s distributed nature provides inbuilt resilience, so long as the individual names function in every language.<br><br>UA-readiness helps to promote local solutions to infrastructure problems. It can mean that people unfamiliar with English or ASCII can still help build out, troubleshoot and repair infrastructure. Infrastructure is made more resilient by having local resources capable of maintaining it. UA-readiness means that the pool of people available to ensure that resilience is larger. There remain many other barriers to infrastructure resilience, but UA-readiness helps build an environment where resiliency is under greater local control. | The DNS is only inherently resilient if individual names function in every language.<br><br>UA-readiness supports local solutions to local problems; see notes below, in response to the next question. |
| Not directly             | The resilience of the DNS as a critical infrastructure is not affected by the lack of UA-readiness, [however] one can say that more diversity in terms of resources available to maintain/troubleshoot/develop infrastructure and application elements could enhance the resilience of those elements.  | Potentially in conflict with above comment on one point, resonant with another.   |

<sup>1</sup> One member considers the term “resilient infrastructure” mostly in the context of climate change, where it’s extensively used (see below). The term is also used by DHS to refer to their efforts around general infrastructure protection, including communications infrastructure, where they put the Internet. <http://www.oecd.org/environment/cc/policy-perspectives-climate-resilient-infrastructure.pdf> ; <https://www.dhs.gov/science-and-technology/critical-infrastructure-and-resilience> One concern is that by using “resilient infrastructure” as a term, it could (in an output, or messaging by the DC) take the place of more accurate definitions that better define what UA is attempting to do.

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**Does UA-readiness promote inclusive and sustainable industrialization?**

| <b>Short answer</b>                   | <b>Long answer</b>   | <b>In short</b>  |
|---------------------------------------|--|--|
| No                                    | No strong relation between sustainable industrialization and UA.   | --   |
| No opinion                            | --   | --   |
| Yes                                   | UA-readiness will create a multilingual system of unique identifiers for the Internet, which will extend the reach of domain names beyond the developed world, into communities which are striving to achieve inclusive and sustainable industrialization. A side effect of UA-readiness is that the pool of people available to promote the goal of inclusive and sustainable industrialization becomes larger. Technology is a tool of industrialization and should not be limited only to those who happen to speak English. Localization of technological development, maintenance and control makes it possible for industrialization to be more inclusive and sustainable.   | UA-readiness will enable people to maintain and develop technology in their native script. |
| Yes, more inclusive industrialization | Generally speaking, domain names and e-mail addresses support and promote industrialisation, irrespective of the languages and scripts used. UA-readiness can contribute to a more inclusive and sustainable industrialisation, but there is a matter of nuance here as well. Respondents to a survey conducted by SEEDIG in 2017 indicated the following among the reasons why they chose to register IDN domain names: to better satisfy customers, due to convenience for the local marketplace, to have/keep a brand mark in the local language, to protect the company's identity and reputation. Thus, UA-readiness enhances the usability of IDN domain names and e-mail addresses and allows businesses with such resources to reach a more extensive market. But many survey respondents also indicated that they registered IDN domain names to complement their ASCII ones. In this light, IDNs and UA-readiness are not a key element that drives industrialisation, as most entrepreneurs launch and run their businesses even when IDNs are not available/accessible. But UA-readiness can support a more inclusive industrialisation. | Domain names and email addresses support and promote industrialization.                    |

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**Does UA-readiness foster innovation?**

| <b>Short answer</b> | <b>Long answer</b>   | <b>In short</b>   |
|---------------------|--|---|
| Yes                 | As the Internet becomes bigger and reaches farther, the saturation of the Namespace becomes a real issue which combines with cybersquatting to create a complex environment for innovation. This makes a more proactive strategy necessary to keep the market strong and accessible. Being able to support the DNS in more languages and extensions is a measure that furthers innovation.   | Innovation opportunities in light of resource constraints     |
| Yes                 | It provides opportunities for local entrepreneurs to create functionality to support their communities, and for larger orgs to engage certain communities more closely.  | Access to new local community markets                         |
| No                  | UA-readiness allows a greater number of people access the Internet in ways that are natural to them. Whether that use is “innovative” or not is not dependent on UA-readiness.   | Innovation occurs after the Internet is accessed.             |
| Yes                 | UA-readiness guarantees the availability of a key element of the Internet’s infrastructure (domain names) to innovators who speak any world language...Domain names create a web presence for start-ups and innovators, and are a low-cost, highly-available tool for innovators to reach a local or international audience...For countries and territories where ASCII domain names lack meaning and memorability for local audiences, UA-readiness is an essential component for fostering innovation. | Domain names are an important tool for innovators.            |
| Yes                 | Innovation is not connected strictly or exclusively with UA-readiness. But UA-readiness can foster certain types of innovation: innovative business ideas with an online presence in both ASCII and IDNs can certainly benefit from UA-readiness.  | Innovative businesses can maintain online presence with IDNs. |

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**Would UA-readiness significantly increase access to information and communications technology?**

| Short answer | Long answer   | In short   |
|--------------|---|--|
| No           | I wouldn't say it increases access, but it makes that access more natural, turning the Internet experience into something more seamless to everyone.  | UA encourages access but does not increase access                                |
| Yes          | UA-readiness allows users to access the Internet in ways that are natural to them. This decreases barriers to Internet uptake and increase access to information and technology.  | UA decreases barriers to Internet uptake   |
| Yes          | <p>The World Report on Internationalised Domain Names has demonstrated a persistent link between IDNs and enhanced linguistic diversity of web content. The range of languages supported by IDNs is greater, and the instance of English language web pages is lower, with IDNs than with their ASCII counterparts. This finding suggests that <b>where IDNs are in use, they support local languages, which are essential to motivate local language communities to come online.</b></p> <p>Yet, our research in 2019 indicates that the proportion of low-quality content (parking pages, single page sites) is higher with IDNs than with ASCII domains. Without UA-readiness, the user experience of IDNs is unpredictable and poor. This would tend to inhibit the range of local language content, and limit the access to ICTs for minority and endangered language communities.</p> | Language is an access issue. UA supports linguistic diversity online.            |
| Yes          | IDNs bring more people online by promoting multilingualism and cultural diversity; IDNs thus contribute to making the Internet more inclusive as the possibility of accessing and registering domain names in more languages and scripts empower more people to use the Internet. Respondents to the [SEEDIG] 2017 survey also indicated that: 1) IDNs are one of the many tools needed to help bridge the digital divide and accommodate new Internet users, who are more comfortable in using the Internet in their native scripts. 2) IDNs promote multilingualism (71% of the respondents), cultural diversity (63%) and help bring more people online (50%).   | UA-readiness helps bridge the digital divide and accommodate new Internet users. |
| Yes          | Local language use and local language script use via the Internet will be a key enabler.  |  |