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PROJECT TAWASOL

CONNECTING PRIMARY SCHOOLS IN TUNISIA TO CREATE AN INTERNET-EMPOWERED NEXT GENERATION

An IEEE Sight workshop at Sadiki School, Tunis. Photo courtesy IEEE Sight, Tunisia Chapter

EXECUTIVE SUMMARY

Project Tawasol is a project in Tunisia that's led by IEEE Sight, Tunisia chapter and People Centered Internet. The aim of the project is to connect primary schools across the country to the Internet, and train students to use the Internet through ICT skills workshops conducted by IEEE.

CONTEXT

Internet penetration in Tunisia stood at 46 percent in 2014, according to the International Telecommunications Union. A predominant majority of the population accesses the Internet through mobile broadband subscriptions, with more than 4.5 million subscriptions to 3G mobile data plans which far exceeds the number of fixed broadband subscribers, around 500,000 in number.

As of 2016, 48% of the schools in Tunisia have access to an Internet connection. However, not all of these schools are equipped with labs that can train these children with ICT skills, and connections are more often than not provided to the administrative staff for coordination purposes.

Country Statistics: Tunisia			
Land area (sq. km.)	163,610	**Mobile cellular subscriptions (per 100 people)**	98.6 (2014)
Population	11 million (2015)	**Number of active users (Mobile)**	4.5 Million (2016)
Population below the poverty line (as a % of total population)	3.8 (2014)	**Number of Active Users (Fixed)**	500,000 (2015)
Labor force	4 million (2014)	**Broadband Users (% of population)**	4.5 (2012)

CHALLENGES

Lack of access to Internet-enabled devices: Most schools in Tunisia do not have computer labs that have Internet enabled devices, which forms the first barrier to students that are trying to use the Internet. With low rates of home broadband connectivity in rural areas, schools and community anchor institutions are crucial points of contact for connecting to the Internet.

Lack of training: ICT training is introduced at the higher secondary level, at the age of sixteen. Most students are unable to harness the resources Internet offers to them prior to that. Training of teachers in the latest technology as well as updation of skills is very poor, which forms another challenge to digital literacy education.

Disparities in access: Rural areas suffer most from the lack of Internet connectivity. While coastal areas have relatively high rates of home broadband subscribers, schools still lag behind. Most homes still depend on copper, and while fiber connectivity is available to large enterprise, it is still out of reach for most households. In rural areas, wireless connectivity is restricted to 2G networks, whose coverage is very poor in remote areas in the interior regions of Tunisia.

THE TAWASOL SOLUTION

The project seeks to provide students small Raspberry Pi operated devices with hard disks that can be updated periodically with relevant content such as Wikipedia pages, TED Talks and other educational content from the Internet. The devices have been developed by IEEE Sight in Tunisia with aid from the San Francisco chapter. They are capable of automatically updating content when connected to Wi-Fi or 3G networks.

In December 2016, the Sadiki school in Tunis has been identified as the first "Connected School" for the dissemination of these devices coupled with digital literacy training workshops by members of IEEE Sight. With support from the government, the project aims to connect, by the end of 2017, 24 such schools – one school in each region within Tunisia. The project focuses on primary schools, with an aim to make the next generation aware of new technologies and information that can be accessed through the Internet.

As part of the project, technical talks and digital literacy as well as ICT training workshops are organized by IEEE Sight, Tunisia. These talks cover interactive sessions that teach students how to build their own websites using drag and drop interfaces. The first workshop conducted in 2016 had a 50% participation by women, a key step in enabling gender parity in Internet access and skills.

IMPACT

In digital literacy training workshops that have been conducted by IEEE Sight, students have built their own prototype websites such as a school blog using HTML, CSS and modular website building interfaces. The reactions in post-workshop surveys conducted thus far have been tremendously positive. "Most students asked us when we will return to provide them with their own devices for development," says Skander Mansouri, one of the IEEE Sight members that conducted these training workshops.

The project aims to impact 24 primary schools by the end of 2017 through the provisioning of low-cost Wi-Fi enabled Raspberry Pi operated devices, impacted close nearly a 1000 students overall.

KEY TAKEAWAYS

Providing primary school connectivity can be an important enabler of education and opportunities for young students, as it provides access to the vast troves of information that is available on the Internet.

ICT Skills training is a crucial component of connectivity projects targeted at youth. This training is more successful when conducted in an interactive setting and aimed at achieving an output (such as a website).

Lowering the cost of devices needed to access the Internet can enable more students at an optimal level, especially in rural areas and for poorer households where affordability is a concern.