



## Essentials

NuvlaBox helps reach developing countries' students and teachers in both urban and rural schools with 21st century technology to prepare young populations for the future:

**1 Content Distribution:**

Enables distribution of learning content at the click of a button, even for non-IT experts.

**2 21st Century Teaching:**

Supports concepts like distant learning, multigrade teaching and eLearning

**3 Rural Application:**

Addresses the TOP5 challenges of IT utilization in rural areas: Power Supply, Affordability, Robustness and ease of use including low maintenance.

## The rise of emerging economies calls for scalable education solutions

With the rise of emerging economies in Asia, Africa and South America, the demand for quality and scalability in education is increasing. Although most developing countries have managed to significantly increase their enrollment rates in primary education, quality still lags behind, particularly in rural communities. Key challenges include lack of teaching material, teacher training and adequate teacher deployment, shortage of classrooms as well as insufficient school inspections, support and administration.

Furthermore, children in rural areas often face intense pressure to support their families in farming and other survival-related tasks. Long walks to school create an additional barrier, especially to achieving continuous enrollment and secondary education.



# Rural Schools

Adapt technology to the circumstances

The Millennium Development Goal of achieving universal primary education made good ground in the early 2000s but has now stagnated. Rural children are twice as likely to be out of school as their urban counterparts. The current distribution of resources, driven by efficiency and preference, often leaves rural areas, settlements and pastoral communities behind. At the same time, the economic rise of emerging economies, and therefore increasing demand for a knowledgeable workforce, is making quality education a number one priority for governments in developing countries.

Whereas countries such as Germany, which has 35,000 schools in total, or the USA, with about 100,000 schools, manage a relatively small number of educational establishments, some of the emerging economies handle multiples of those. India alone operates 700,000 rural public schools. An additional challenge is to engage those children currently not enrolled in any school, which, for example, is about 1,000,000 children in Kenya and 4,700,000 in Nigeria.

## Bridging the divide

Information Technology can help to democratize entry to primary and secondary education and even to higher education by reducing the hurdles of access and affordability.

Learning applications and content need to be available at the point of delivery, which in this case is the rural school. Pupils and teachers must be able to work and learn on a daily basis independently of network availability.

Following recent massive investment in mobile network, operations and management costs can be lowered.

In order to keep costs low, it is essential that the management of the local infrastructure, as well as content and application updates, can be performed remotely. This should be possible even over low quality and low bandwidth networks.

## Adapt technology to the circumstances; don't wait for circumstances to adapt

SixSq solutions are built to help governments, development organizations, for-profit and non-profit organizations, and even individuals deploy a scalable IT infrastructure that is tailor-made to support rural schools and distance learning in IT-challenging environments. SixSq products follow the ICT4D (Information and Communication Technology for Development) approach and address the key hurdles faced in rural and underdeveloped regions such as power supply, connectivity, environmental constraints, manageability and ease of use, as well as affordability.

With SixSq NuvlaBox, schools can benefit from cloud technology in small and large scale scenarios, depending on the existing power and network supply, from establishing their own local Wi-Fi to highly interconnected remote controlled deployments. SixSq NuvlaBox runs on 19v which can be supported by the most basic methods of power supply, including solar energy or even battery. To make NuvlaBox as robust against environmental effects as possible, it comes with no moving parts. NuvlaBox is a fanless computer cooled by a smart heat-pipe system resulting in fewer parts that can fail, yet it is only the size of 2 Swiss chocolate boxes.

But NuvlaBox is not just about hardware, it's the software it runs inside that makes the difference. NuvlaBox is built on open source technology and includes a Linux operating system and SixSq Swiss-quality IaaS and PaaS layers. NuvlaBox provides the foundation for deploying eLearning applications, school administration software and teacher training in a flexible and automated manner. NuvlaBox can support a multitude of collaborations between administrators, teachers and students within a secured environment. As NuvlaBox comes with an enterprise proven Application Store, ease of use is guaranteed. Applications can be started and stopped at the click of a button. No IT specialist is needed.

Centralised and online application and content delivery solutions require highly available connectivity and good bandwidth. These are generally not available in rural regions. However, NuvlaBoxes can be securely remote-controlled and their hosted applications or content updated via low bandwidth connectivity. Off-site specialists can remotely manage each box and its hosted applications, saving on travel costs and improving response time. The ability to securely manage and to control NuvlaBoxes remotely also means that IT knowledge can be centralized, yielding even higher savings, whilst delivering a higher level of service. And all this without relying on high quality and bandwidth networks.

Prepare young populations for a better future

Affordability is key in improving the availability of IT in development scenarios. NuvlaBox addresses this by replacing up to 8 physical servers with a single box, reducing hardware and maintenance costs and the need for on-site expertise.



## Call for action

Whether you are a government or NGO representative, a developer, system integrator or an individual, if you want to help us grow the necessary eco-system or you have ideas which could effectively support our mission, please contact us. We are keen to provide developing countries with solutions for better education. This in turn will reduce the digital divide and inequalities, thus helping to secure employment and growth for the respective countries and populations.

## Contact us

To learn more about how SixSq products, solutions and services can help your business, IT challenge or humanitarian project, please contact our global business development team at [biz@sixsq.com](mailto:biz@sixsq.com) or visit us at [www.sixsq.com](http://www.sixsq.com).



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