

Enabling the e-learning journey for all your schools

Safeguarding nationwide internet rollouts by
fixing the connectivity problem



Tackle the urban-rural
digital divide - for this
generation not the next



Halve the lifetime cost of
sufficient connectivity for your
education system



ApplianSys is the world's
caching specialist, helping
schools in 155 countries



THE OBJECTIVE: Transform national education outcomes by travelling the e-learning journey

THE PROBLEM: Connectivity issues always make the journey harder and slower

THE ANSWER: Wherever they are on the journey, however much connectivity they have now, schools everywhere benefit from deploying **CACHEBOX**. From then on, the journey will be faster

APPLIANSYS: The world-leading specialist helping national education authorities to deploy caching successfully and cost-effectively:

- A total package to ensure successful nationwide deployment
- The only caching solution truly fit for a school — **CACHEBOX**
- All-in-one network appliance, **EDUGATEBOX**, helps schools get online for the first time

The e-learning journey is long: connectivity is an issue at all stages

	1 Initial connections	2 Integrate with curriculum	3. Multimedia classrooms	4. Full e-Learning
Pedagogy	Teaching in ICT room ICT skills and enthusiasm	Teacher front of class Use tech beyond ICT	Need engaging content Lessons depend on web	Full curriculum personalised learning
Content	Basic consumer software Digital skills software	Local context courses Collaboration - OER	Learning Object Repository Approved video material	E-learning platform Classroom Management
Devices	Computer lab Need low maintenance	Basic teacher devices Projector / large screen	Adv. teacher devices Laptop carts	1 student : 1 device / BYOD schemes
Teacher IT Skills	ICT teachers trained Sharing data	All: basic ICT training Collaboration	Working around low bandwidth	Using full classroom management toolkit
Technician Skills	Need local capability Need to buy in	Network training	Advanced troubleshooting	Local technician essential
Network	Simple gateway device 1 x Wi-Fi Access Point	Internal cabling or additional Wi-Fi	Content filtering/NG Firewall Upgrade/extend Wi-Fi	Full campus Wi-Fi Network kit upgrades
Connectivity	Initial rollout <= 10 Mbps bandwidth	Increased usage 5-50 Mbps	Bandwidth hogs 50-200 Mbps	Traffic peaks >200 Mbps

National Education Authorities must work hard across multiple pillars and in parallel, developing assessment, teacher capacity building, the provision of more devices, content, connectivity and more.

Every nation is on this journey with ambitions to do more at every stage - more lessons, more transformative practices, more student device time. It is a long, complex, expensive process that takes many years.

Today, progress can be far more rapid than it was for nations that set out on the journey 20 years ago - you can take action to avoid the connectivity problems they experienced. If you fail to do so:

- Insufficient connectivity will slow your journey, or even throw it off course
- But building connectivity is expensive and takes a long time
- Whenever you increase bandwidth supply, demand in schools will soon leap ahead of it again
- And at every stage there is the risk of the most rural schools being left behind

To unlock the promise of digital transformation, every nation must fix the connectivity problem for schools.

Caching is highly effective at handling school internet traffic

CACHEBOX is a low-cost, specialised appliance that is installed in each school and radically improves the efficiency with which the internet connection is used.



All schools share unique traffic characteristics:

- Most learning content is requested in a huge demand spike in the first minutes of a lesson
- **Most of the content** accessed is ‘repeat requests’

So, by intelligently storing a copy of the first request and re-using that content, **CACHEBOX** works particularly well in schools, helping to slash last-mile bandwidth requirements for **all** schools.

Deploying **CACHEBOX** is a quick, low-cost intervention that will accelerate every stage of your e-learning journey.

By combining caching with a raft of advanced schools-focused functions and features, **CACHEBOX** and **EDUGATEBOX** radically improve connectivity for remote rural schools.

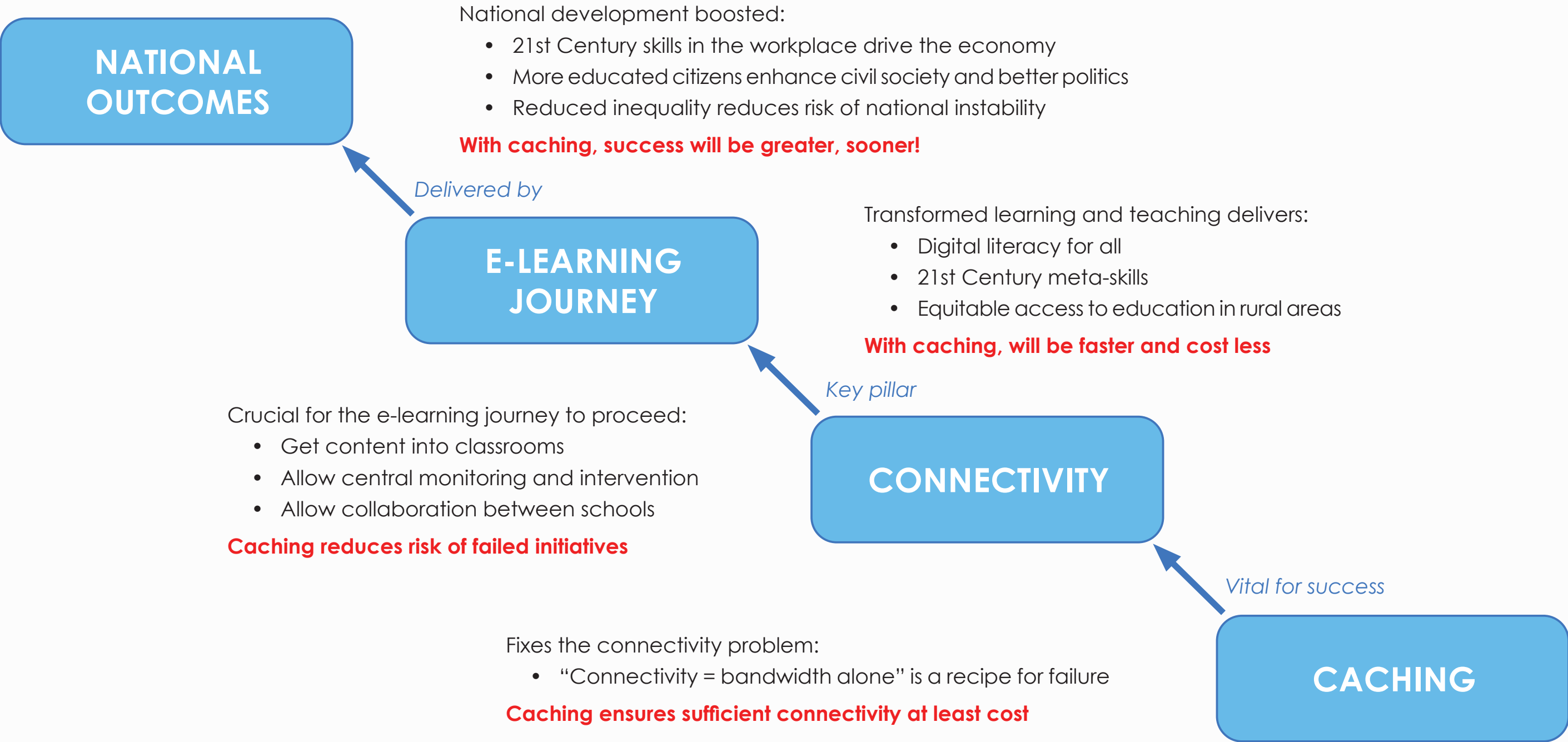
As a result, rural schools don’t get left behind:

- smaller, lower-cost connections properly support whole-class e-learning;
- they can be connected sooner, no need to wait for fibre rollout;
- unconnected schools make meaningful progress along the e-learning journey.

ApplianSys takes care of the details that make national caching deployments straight-forward:

- Design a rapid, cost-effective fleet roll-out
- Establish and support a centralised management service – the only approach that makes sense for national rollouts.

Caching impacts everything by ensuring sufficient connectivity at least cost



Transforming e-learning with 1Mbps satellite links



EDUGATEBOX allows first-time connected Ecuadorian schools to use online digital resources for whole-class activities.

Combined with a 1Mbps satellite connection, **EDUGATEBOX** contains everything the project needs in one small appliance – cache, firewall, traffic shaper and Wi-Fi for 50-150 concurrent users. It saves 99% of the data it takes to access MINEDUC content. Teachers can share content with students via a simple on-board content repository and usage data can be sent back to the Ministry.

Whilst home-schooling, students come to the schoolyard with their devices and connect to the Wi-Fi to download their assignments. In the evenings, bandwidth is shared for community use.

With the connectivity problem fixed, Educational Psychologist, Victoria Teran, is working with MINEDUC to deliver light but powerful teacher interventions to accelerate e-learning adoption.

Scan the QR code to hear Victoria's first-person account.



Read more

Caching enables teachers to use e-learning effectively on 4G



In Senegal, schools had devices and content, but limited internet capacity blocked whole-class student access to video. Only two teachers were keen to use the computer lab.

CACHEBOX made whole-class e-learning a reality.

- Internet performance is no longer a blocker to the adoption of online learning
- All students can use online video at the same time on their own devices, studying at their own pace for better comprehension and retention

- Every teacher now wants to use IT in their classes. Teachers are freed to support students
- Lesson objectives are reached in record time. Students developing 21st Century skills.

ApplianSys is now working with the Senegalese Ministry of Education to roll out **CACHEBOX** nationally as part of its digital transformation programme.

Senegalese teachers described their experience with **CACHEBOX** in a video: scan the QR code to view.



Read more

ApplianSys is the education caching specialist

For over 20 years, ApplianSys has safeguarded nationwide internet rollouts to schools by fixing the connectivity problem which exists for schools in the developing world, and in remote schools everywhere. Because of our global experience over this time, we understand the critical success factors not just for our own specialist area and technology - we have seen lessons learned on the whole range of factors which you must manage for national success on the e-learning journey.

*“ApplianSys makes big claims about 'Fixing The Connectivity Problem', and from where I'm sitting, I can fully endorse those claims. By fixing the connectivity problem, **CACHEBOX** properly supports our e-learning goals.”*

Ahmed Afzal, Minister of State for Communication Science and Technology, Maldives

We would be delighted to meet with you and your team for a brief explanation of why our specialist area is vital to your plans and identify whether we can help you as you develop your national initiatives.

Head Office - UK ApplianSys House Harry Weston Road Coventry CV3 2UB t: +44 8454 50 51 52	Asia Pacific Level 16 Wisma UOA Damansara II 6 Changkat Semantan Bukit Damansara 50490 Kuala Lumpur t: +60 3 6419 5014	Americas 5900 Balcones Drive Suite 4987 Austin, TX 78731 t: +1 512 696 1420	Asia Pacific Southdowns Ridge Office Park Irene Centurion 0157 South Africa +27 12 003 3271
--	---	---	--