

## HELPDESK RESPONSE 43

# Key considerations when developing an ICT in Education strategy

# About this document

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# About this document

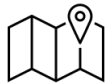
## **Acknowledgement**

This report was commissioned by UNICEF and produced under UNICEF and EdTech Hub's global partnership, in response to a request from the UNICEF Laos team that was submitted to the EdTech Hub Helpdesk. It presents key considerations on the overarching process to develop an ICT in Education strategy (e.g., components, stakeholders, timelines) and lists examples of other national ICT in Education and EdTech strategies. Many thanks to UNICEF Laos colleagues, including Rachel McCarthy, Trine Petersen and Aapo Kuusela for their support and input to develop this report.

## **About the EdTech Hub Helpdesk**

The Helpdesk is the Hub's rapid response service, available to FCDO advisers and World Bank staff in 70 low- and lower-middle-income countries (LMICs). It delivers just-in-time services to support education technology planning and decision-making. We respond to most requests in 1–15 business days. Given the rapid nature of requests, we aim to produce comprehensive and evidence-based quality outputs, while acknowledging that our work is by no means exhaustive. For more information, please visit <https://edtechhub.org/helpdesk/>.

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# Abbreviations and acronyms

|              |                                                      |
|--------------|------------------------------------------------------|
| <b>CLC</b>   | Community Learning Centres                           |
| <b>CSO</b>   | Civil society organisation                           |
| <b>EMIS</b>  | Education management information system              |
| <b>ICT</b>   | Information and communication technology             |
| <b>INGO</b>  | International non-governmental organisation          |
| <b>MoE</b>   | Ministry of Education                                |
| <b>NFE</b>   | Non-formal education                                 |
| <b>NGO</b>   | Non-governmental organisation                        |
| <b>SABER</b> | Systems Approach for Better Education Results        |
| <b>SEND</b>  | Special educational needs and disabilities           |
| <b>SIDA</b>  | Swedish International Development Cooperation Agency |

# Laos: current state

# ICT Development Strategy for Education (Draft)

A draft ICT Development Strategy for Education was revised by the Ministry of Education and other stakeholders in 2016.\*

Key points from the strategy are summarised below and in the following slides.

## **Vision**

"By 2030, ICT will be widely used, effective, innovative and sustainable to develop quality education and be able to integrate regionally and internationally."

“ຮອດປີ 2030 ໄອຊີທີ ຖືກນຳໃຊ້ ຢ່າງທົ່ວເຖິງ, ມີປະສິດທິພາບ, ປະດິດສ້າງ ແລະ ຍືນຍົງ ເພື່ອພັດທະນາການສຶກສາ ໃຫ້ມີ ຄຸນນະພາບ ແລະ ສາມາດເຊື່ອມໂຍງກັບພາກພື້ນ ແລະ ສາກົນ” (↑[Ministry of Education and Sports \(Laos\), 2016](#)).

\*Note that this draft has not been formally enacted, as of 2022.

# ICT Development Strategy for Education (Draft)

## Strategies

1. Improve, expand, and manage ICT infrastructure for education across the country (ປັບປຸງ, ຂະຫຍາຍ ແລະ ຄຸ້ມຄອງພື້ນຖານໂຄງລ່າງໄອຊີທີ ສໍາລັບການສຶກສາ ໃນຂອບເຂດທົ່ວປະເທດ)
2. Build and develop ICT capacity of teachers and staff (ກໍ່ສ້າງ ແລະ ພັດທະນາຂີດຄວາມສາມາດ ໃຫ້ແກ່ ຄູ ແລະ ບຸກຄະລາກອນ ດ້ານໄອຊີທີ)
3. Develop e-learning curricula and media (ພັດທະນາຫຼັກສູດ ແລະ ສື່ການຮຽນ-ການສອນ ແບບເອເລັກໂຕຣນິກ)
4. Develop and apply ICT in teaching, learning, and research (ພັດທະນາ ແລະ ນໍາໃຊ້ໄອຊີທີ ເຂົ້າໃນການຮຽນ-ການສອນ ແລະ ການຄົ້ນຄວ້າວິໄຈ)
5. Develop and deploy ICT in the administration and management of education and sports (ພັດທະນາ ແລະ ນໍາໃຊ້ໄອຊີທີ ເຂົ້າໃນການບໍລິຫານ-ຄຸ້ມຄອງ ຂະແໜງການສຶກສາ ແລະ ກິລາ)
6. Promote ICT technical services for education to society (ສົ່ງເສີມການບໍລິການວິຊາການ ດ້ານໄອຊີທີ ສໍາລັບການສຶກສາໃຫ້ແກ່ສັງຄົມ)

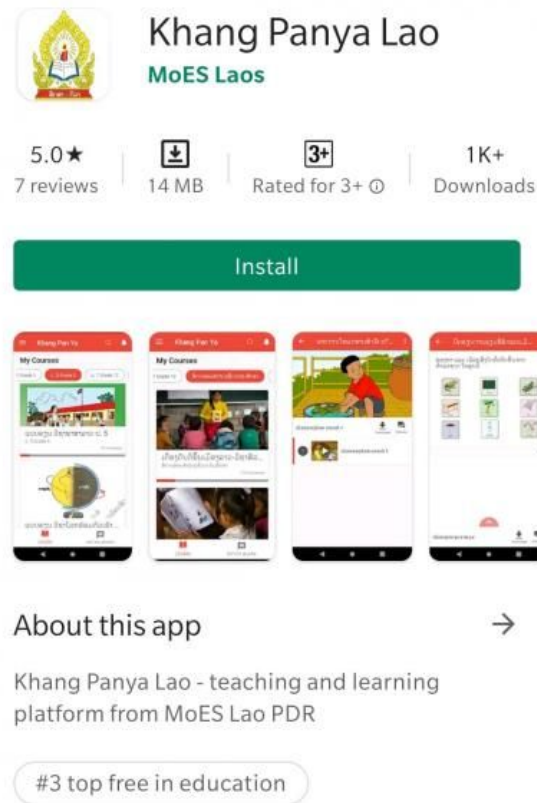


## Snapshot: Khang Panya Lao

**Khang Panya Lao** (ຄັງປັນຍາລາວ) is a digital platform with the following objectives (↑UNICEF, no date):

1. Facilitate the learning of children and adolescents, allowing for continuity of learning during school closures and as a supplementary learning resource to face-to-face classes and learning at home.
2. Enhance teaching by supporting the work and professional development of teachers, principals, pedagogical advisors, and education technical staff by providing resources and as a platform for blended trainings.
3. Enhance the digital skills of Lao children, young people, teachers and education staff

See: <https://laos.learningpassport.unicef.org/>



# Overview of ICT in Education strategies

## Current trends and global demands

- There is renewed interest and attention being placed on the development of ICT in Education strategies in 2022 as the Covid-19 pandemic evolves. Countries are consolidating existing efforts and planning for the future based on what is effective.
- Technical education specialists can be ill-equipped to include technology in education sector plans. Likewise, technology experts lack knowledge of effective educational approaches.
- Strategies that are not well thought out lead to wasted resources on impractical solutions.
- More up-to-date, practical, robust guidance on ICT / EdTech / digital learning strategies, or integration of this into broader education sector plans are needed.

# ICT in Education strategies and education sector plans

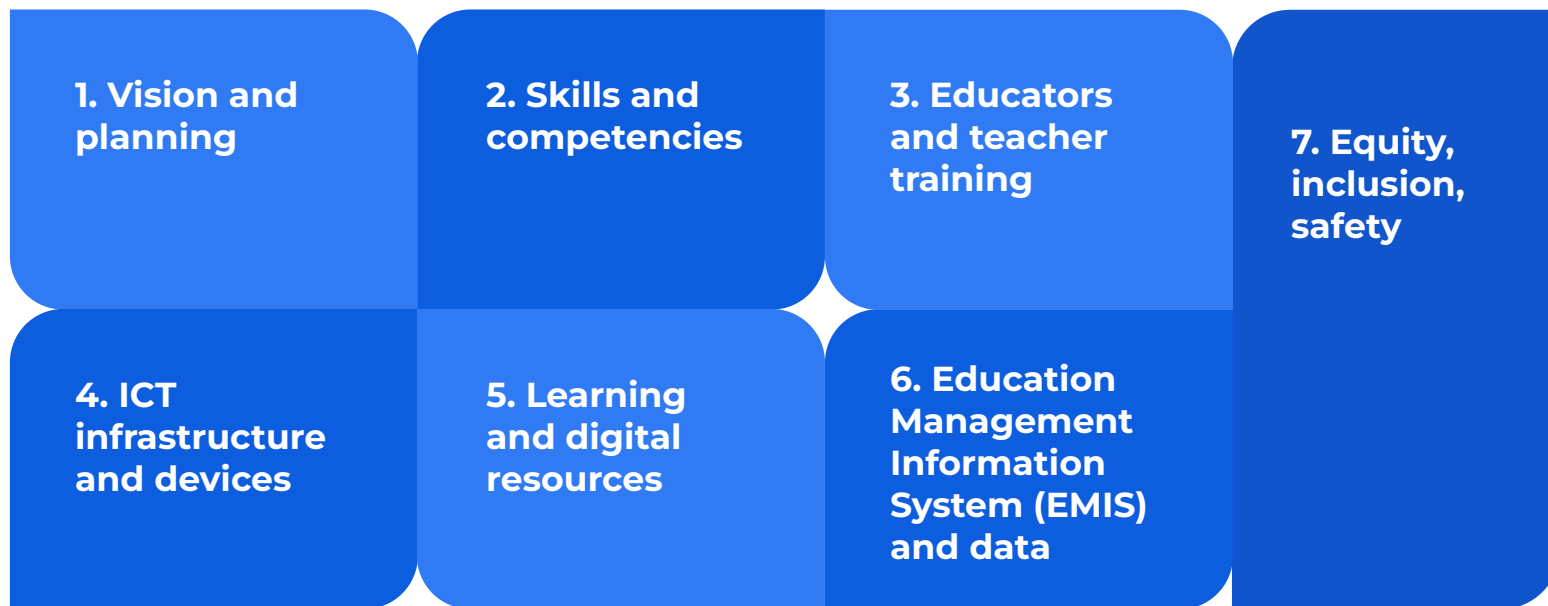
It is crucial that ICT in Education strategies are aligned to, and work in service of, the goals of wider national education sector plans and strategies.

Both ICT in Education and broader education sector plans should be:

- **Vision driven** — guided by an overall, long-term vision
- **Strategic** — providing practicable and evidence-based strategies to reach that goal
- **Holistic** — centring learners / students as the principal beneficiaries of the education system, and recognise all forms and sub-sectors of education
- **Evidence-based** — using recent, robust, and reliable data to inform the basis of strategies and approaches
- **Achievable** — providing a framework for budget and management decisions, and recognise that stakeholder ownership largely determines feasibility
- **Sensitive to country context** — based on a sound situational analysis of contextually specific vulnerabilities and address resilience (preparedness, prevention, risk mitigation)
- **Attentive to disparities** — identifying and attending to issues of equity (gender, religion, socio-economic status, disability) across the plan, including where disparities intersect, and addressing specific needs of different groups ([↑GPE & UNESCO, 2015](#)).

# Balancing comprehensiveness and feasibility

**Comprehensive** ICT in Education strategies often cover the following components:\*



\*These components are based on the **SABER-ICT policy framework** ([↑Trucano, 2016](#)). They were identified as a framework for ICT in Education strategies and also serve as a good theoretical framework for an analysis of the state of EdTech.

# Balancing comprehensiveness and feasibility

What makes these strategies specific and **feasible** is prioritising within those components and addressing questions such as:

- Do the objectives, programmes, and activities address the key challenges identified in the situational analysis?
- Are the objectives, programmes, and activities coherent and compatible with one another?
- Who will take ownership / responsibility for each objective, programme, or activity?
- Are the estimated costs compatible with the likely financial resources available?

# Examples

Singapore and Bhutan

# Component: Vision and planning

## Singapore's EdTech Plan



Ministry of Education  
SINGAPORE

(↑Ministry of  
Education  
(Singapore),  
2021)

“Over the next 5 to 10 years, educational technology will help make education more:

**Self-Directed:** By developing pedagogy, tools and structures to help students develop intrinsic motivation and take ownership of their learning.

**Personalised:** By creating learning experiences that customise the pace and path that cater to each child's needs.

**Connected:** By developing collaborative learning experiences and connecting students' learning to the community and the world.

**Human-centred:** By leveraging a data-driven understanding of how students' interests, attitudes and motivations can optimise learning.”

- ✓ A broad overall 10-year vision
- ✓ Aligns to overall goals of education system
- ✓ Concise and specific. It provides orientation for the subsequent steps
- ✓ Specifics included in the vision help set priorities and strategies in the details of the plan
- ✓ Focuses on building agility in recognition of the emergent and rapid changes in technology
- ➡ The vision should take the country context into account; parts of Singapore's EdTech vision may not apply directly to Laos



# Component: Skills and competencies

## Bhutan's EdTech Plan



(↑Ministry of Education (Bhutan), 2019)

| Thrust 1: iAble<br>Enhance ICT competency of educators, learners and support staff. |                                                                     |
|-------------------------------------------------------------------------------------|---------------------------------------------------------------------|
| Programme 1.1<br>ICT Capacity Development of Educators                              | Project 1.1.1 ICT competency standards for teachers                 |
|                                                                                     | Project 1.1.2 Digital pedagogy in colleges of education             |
|                                                                                     | Project 1.1.3 Digital pedagogy for in-service teachers              |
| Programme 1.2<br>ICT Capacity Development of Learners                               | Project 1.2.1 ICT competencies of students                          |
|                                                                                     | Project 1.2.2 Digital citizenship for students                      |
|                                                                                     | Project 1.2.3 TVET-based ICT competencies of students               |
|                                                                                     | Project 1.2.4 Digital literacy for NFE and CLC learners             |
| Programme 1.3<br>ICT Capacity Development for Learning Support                      | Project 1.3.1 ICT competencies of educational leaders               |
|                                                                                     | Project 1.3.2 ICT competencies of library and laboratory assistants |

- ✔ Lays down clear competency standards for teachers, learners, and support staff
- ✔ Outlines learning and development outcomes to be measured at different stages of implementation
- ✔ Specifies which ministries and departments are responsible for different components and activities
- ➔ Building ICT capacity for Ministry of Education (MoE) staff and other government officials can be included as well

# Component: Skills and competencies

## Singapore's EdTech Plan



Ministry of Education  
SINGAPORE

(Ministry of  
Education  
(Singapore),  
2021)

### Primary

At the end of [primary school](#), students should:

- Be able to distinguish right from wrong.
- Know their strengths and areas for growth.
- Be able to cooperate, share and care for others.
- Have a lively curiosity about their surroundings.
- Be able to think for and express themselves confidently.
- Take pride in their work.
- Have healthy habits and an awareness of the arts.
- Know and love Singapore.

### Secondary

At the end of [secondary school](#), students should:

- Have moral integrity.
- Believe in their abilities and be able to adapt to change.
- Be able to work in teams and show empathy for others.
- Be creative and have an inquiring mind.
- Be able to appreciate diverse views and communicate effectively.
- Take responsibility for their own learning.
- Enjoy physical activities and appreciate the arts.
- Believe in Singapore and understand what matters to our country.

### Post-secondary

At the end of [post-secondary education](#), students should:

- Have moral courage to stand up for what is right.
- Be resilient in the face of adversity.
- Be able to collaborate across cultures and be socially responsible.
- Be innovative and enterprising.
- Be able to think critically and communicate persuasively.
- Be purposeful in pursuit of excellence.
- Pursue a healthy lifestyle and have an appreciation for aesthetics.
- Be proud to be Singaporean and understand Singapore in relation to the world.

✓ Captures the desired outcomes for learners across each key stage of the education system: primary school, secondary school, and post-secondary education

# Component: Educators and teacher training

## Singapore's EdTech Plan



Ministry of Education  
SINGAPORE

(↑Ministry of  
Education  
(Singapore),  
2021)

### “Designers of learning experiences who:

- Design physical and virtual learning environments that empower students to learn.
- Customise learning to cater to each student's needs.
- Iterate the design of learning experiences for continual improvements to student learning.

### Skilful practitioners who facilitate active learning in students by leveraging:

- Technology to mediate learning interactions between students and content, their teachers, their peers and the community.
- Learning data to provide better feedback and targeted interventions to students.

### Digital learners who continually develop themselves professionally to:

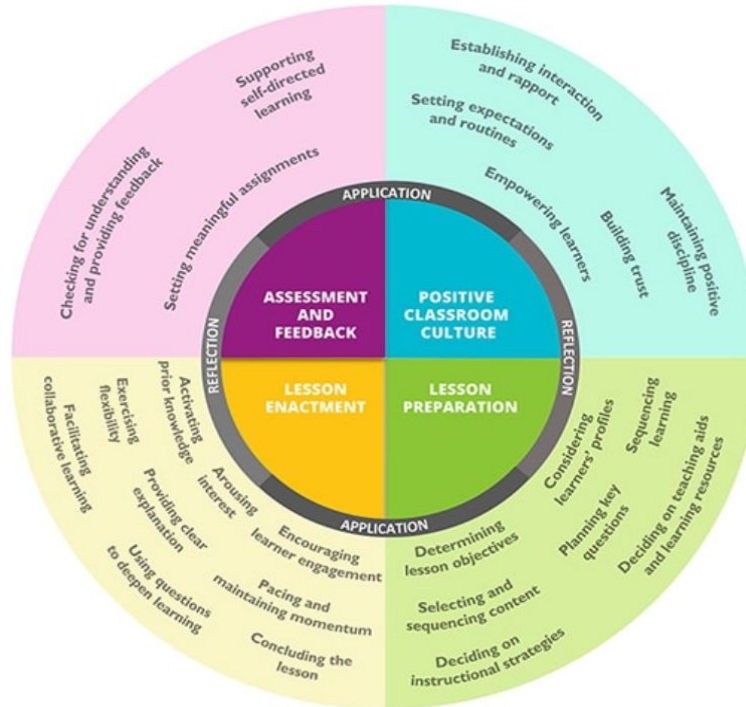
- Learn and share digitally.
- Keep up to date with technological developments for teaching and learning.”

✓ Offers specific considerations and action items for educators

➡ Teachers can share lessons learnt and good practices with each other through in-person or virtual groups

# Component: Educators and teacher training

## Pedagogical Practices



### Singapore's EdTech Plan



Ministry of Education  
SINGAPORE

(Ministry of Education  
(Singapore),  
2021)

✓ Offers a model of teaching and learning to guide and strengthen effective teaching

✓ Offers specific pedagogical practices, corresponding to teaching areas, that facilitate learning

## Component: ICT infrastructure and devices

### Singapore's EdTech Plan



Ministry of Education  
SINGAPORE

(Ministry of  
Education  
(Singapore),  
2021)

#### **“Develop a school environment that supports seamless learning by:**

- Continually improving ICT infrastructure and systems to support teaching and learning in school and at home.
- Reimagining learning spaces to enrich learning interactions beyond the classroom.”

✓ Aims to develop responsive environments that support learning anytime, anywhere

➡ Should consider how to reach learners with limited access to internet / devices at home

## Component: Learning and digital resources

### Bhutan's EdTech Plan



(↑Ministry of Education (Bhutan), 2019)

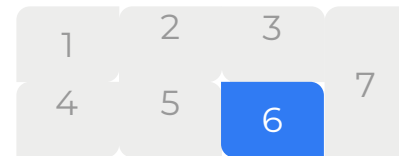
#### **“Pervasive Use of Digital Educational Resources**

- Digital interactive textbooks project
- Content adaptation for special needs
- Digital educational resources for schools
- Digital educational resources for non-formal education (NFE).”

✓ Aims to ensure availability and accessibility of digital resources

✓ Considers how to ensure inclusivity for learners with special educational needs and disabilities (SEND)

# Component: Education Management Information System (EMIS) and data



## Bhutan's EdTech Plan



(↑Ministry of Education (Bhutan), 2019)

### Objective

Develop an integrated and comprehensive EMIS.

### Responsible Bodies

Directorate of Services, MoE (Lead)  
Policy and Planning Division, MoE  
Department of School Education, MoE for collaboration and support  
Bhutan Council for School Examinations and Assessment for collaboration and support

### Implementation Plan and Costing

| Activity                                                                                                | Timeline |      | Cost (Mil. Nu) |
|---------------------------------------------------------------------------------------------------------|----------|------|----------------|
|                                                                                                         | Start    | End  |                |
| 1. Develop EMIS<br>1.1 Conduct requirement analysis (1.00m)<br>1.2 Develop EMIS (17.00m)                | 2019     | 2021 | 18.00          |
| 2. Implement EMIS<br>2.1 Develop capacity on EMIS usage (10.00m)<br>2.2 Carry out data cleaning (2.00m) | 2021     | 2022 | 12.00          |
| Total                                                                                                   |          |      | 32.00          |

✓ Includes a plan to upgrade the MoE's EMIS, which was developed in 2011, to enhance user experience. The upgrade will add usability features such as ease of data entry, use of data analytics to track students' performance, etc.

➡ The stated objective could be expanded upon further



# Component: Equity, inclusion, and safety

1

2

3

4

5

6

7

## Singapore's EdTech Plan



Ministry of Education  
SINGAPORE

(Ministry of  
Education  
(Singapore), 2022)

The Cyber Wellness curriculum is organised into 5 topics:

| Topics              | What your child will learn about                                                                                                                                                      |
|---------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Cyber use           | <ul style="list-style-type: none"><li>Maintaining a healthy balance of online and offline activities</li></ul>                                                                        |
| Cyber identity      | <ul style="list-style-type: none"><li>Developing a healthy online identity</li><li>Appropriate online expression</li></ul>                                                            |
| Cyber relationships | <ul style="list-style-type: none"><li>Netiquette</li><li>Cyber bullying</li><li>Developing safe, respectful and meaningful online relationships</li></ul>                             |
| Cyber Citizenship   | <ul style="list-style-type: none"><li>Understanding the cyber world</li><li>Handling online content and behaviour</li><li>Having a positive presence in the cyber community</li></ul> |
| Cyber Ethics        | <ul style="list-style-type: none"><li>Creating and sharing of online content in a responsible manner</li><li>Respecting copyright</li></ul>                                           |

✓ Approaches inclusion, equity, and safety as an integral part of an ICT for education strategy

✓ Outlines key messages for each stakeholder group (learners, parents, educators) to equip them about cybersecurity



# Process of developing an ICT in Education strategy

# Process

**What** has already been done? How did it go? What challenges remain?

**Who** needs to be involved? How does the strategy relate to existing conditions, laws, policies, etc?

**Why** are we looking to use EdTech? What do we want to achieve with it?

**How** will EdTech support and integrate with wider initiatives?

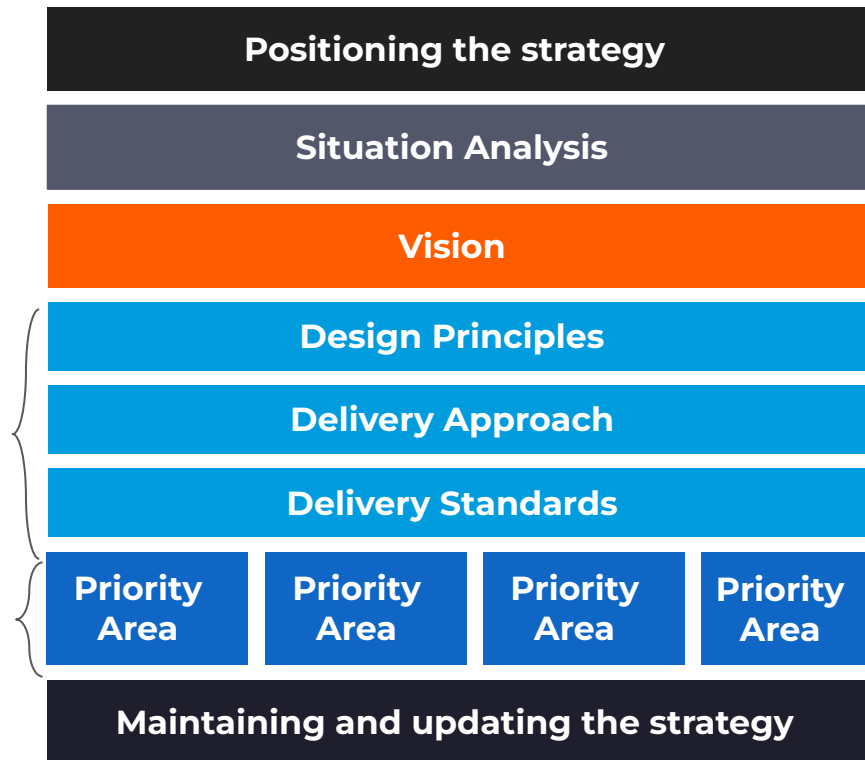
**Principles:** equity, minimising / mitigating digital divide, agile, principles for digital development

**Approach:** agile (discovery, alpha, beta, trial, scale)

**Standards:** educational and digital

**What education outcomes** do we want to achieve with EdTech?

**How** will you adapt and iterate upon the strategy using feedback and data? What is the timeline and life cycle of the strategy?



# Positioning the strategy

Prior to developing the strategy, it is important to ask three key questions:

## **1. What has already been done?**

This may include ...

- ICT strategies and policies that are already drafted / established
- EdTech pilots or initiatives
- Devices that have been procured for other EdTech initiatives

## **2. How did it go?**

Further questions that one could ask ...

- Has the ICT strategy already been implemented? Why or why not?
- What is the status of each initiative?
- What are the lessons learnt from this work?

## **3. What challenges remain?**

Common challenges may include ...

- Limited digital literacy of learners, teachers, and government staff
- Lack of access to devices and internet
- Gaps in digital learning materials

# Situation analysis

## How does the strategy relate to existing ICT conditions, laws, policies, etc?

In terms of digital adoption, and despite investments in digital infrastructure, Laos continues to lag behind the rest of East and Southeast Asia. There are several obstacles to digital adoption in Laos:

**Affordability:** Many still cannot pay for the high cost of internet (USD 53.41 per month for fixed broadband on average). In comparison, neighbouring Cambodia and Thailand have average internet rates of USD 33.17 and USD 23.30 per month, respectively.

**Rural-urban divide:** only 0.3% of rural households have fixed broadband, 2% have computers, 49% have television, and 15% have radios ([↑Runde et al., 2022](#)).

|                                        | Access to<br>the<br>internet | Mobile phone<br>subscriptions per<br>100 people |
|----------------------------------------|------------------------------|-------------------------------------------------|
| Laos                                   | 43%                          | 61                                              |
| The East Asia<br>and Pacific<br>Region | 70%                          | 126                                             |

# Situation analysis

What stakeholder groups are typically involved in developing EdTech strategies?

**Ministry of Education**  
(and specific departments)

**Government ministries** working on ICT / technology

**End-users** (Parents, caregivers, teachers, children, youth)

**Private sector representatives**

**Research and evaluation communities**

**Community and local leaders** and representatives

**Professional education groups**, such as teachers' unions

**INGOs, NGOs, CSOs**

Multilateral and bilateral **development partners**

As the digital infrastructure in Laos requires further development, partnerships with the Ministry of Technology and Communication and with mobile network operators may be especially crucial.

# Situation analysis

## How do we involve stakeholder groups in this process?

| Group                                                                                    | Who is it made up of?                                                                                                                                                                                              | How should you consult it?                                                                         | Why should you consult it?                                                                                                                                            | Possible role in implementation                                                                               |
|------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|
| <b>Government ministries (and organisations with authority to establish regulations)</b> | Representatives of organisations responsible for regulations, quality assurance, qualification frameworks of institutional staff, intersectoral public funds, regulating pricing of hardware, and digital services | Focus groups<br><br>Regular meetings of the governing board                                        | Review the feasibility of regulations, quality assurance mechanisms, qualification schemes, universal service funds, zero rating, and legal procedures for tendering. | Endorse regulations and provide capacity development                                                          |
| <b>End-users</b>                                                                         | Representatives of learners, teaching staff, ICT support staff, leaders of educational institutions, and parents who are asked to facilitate home-based learning                                                   | Focus group discussions<br><br>Interviews with selected groups<br><br>Continuous knowledge sharing | Elicit feedback on the feasibility of the desired change<br><br>Gain insights into teaching and learning practices<br><br>Build awareness and capacities              | Integrate ICT into daily teaching and learning practices in the classroom<br><br>Create and share innovations |

# Situation analysis

## How do we involve stakeholder groups in this process?

| Group                                      | Who is it made up of?                                                                                                                | How should you consult it?      | Why should you consult it?                                                                     | Possible role in implementation                                                 |
|--------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|
| <b>Private sector representatives</b>      | Representatives of private companies that supply hardware, digital services, and content                                             | Focus group discussions         | Elicit feedback on the regulations specifically concerning the private sector                  | Mobilise funding and resources from the private sector                          |
|                                            |                                                                                                                                      | Interviews with selected groups | Mobilise inputs on components of the masterplan relating to technology                         | Adopt regulations and promote digital innovations as public goods for education |
|                                            |                                                                                                                                      |                                 | Advocate the humanistic principles                                                             |                                                                                 |
| <b>Research and evaluation communities</b> | International and local experts and representatives from national educational institutions, universities, and the research community | Focus group discussions         | Elicit feedback and input on the vision, objectives, indicators, and actions of the masterplan | Implement capacity-building programmes                                          |
|                                            |                                                                                                                                      | Interviews with selected groups | Mobilise inputs on the methodologies planned for monitoring and evaluation, and research       | Execute or facilitate evaluation and research                                   |
|                                            |                                                                                                                                      | Knowledge sharing               |                                                                                                |                                                                                 |

# Situation analysis

## How do we involve stakeholder groups in this process?

| Group                                                  | Who is it made up of?                                                                                                           | How should you consult it?      | Why should you consult it?                                                                    | Possible role in implementation                          |
|--------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|---------------------------------|-----------------------------------------------------------------------------------------------|----------------------------------------------------------|
| <b>Community and local leaders</b>                     | Representatives of the local public community, especially from libraries, community service centres, and charitable foundations | Public surveys                  | Raise awareness and reach consensus                                                           | Help minimise any public resistance                      |
|                                                        |                                                                                                                                 | Focus group discussions         | Elicit general feedback                                                                       | Mobilise external funding and resources                  |
|                                                        |                                                                                                                                 | Continuous knowledge sharing    |                                                                                               |                                                          |
| <b>Multilateral and bilateral development partners</b> | Representatives of international organisations including the UN, NGOs, and foreign aid agencies                                 | Focus group discussions         | Elicit feedback                                                                               | Plan and execute collaborative programmes                |
|                                                        |                                                                                                                                 | Interviews with selected groups | Explore synergies with ongoing or planned programmes and with international community funding | Share funds and resources                                |
|                                                        |                                                                                                                                 | Continuous knowledge sharing    |                                                                                               | Facilitate the exchange of ideas and collective learning |



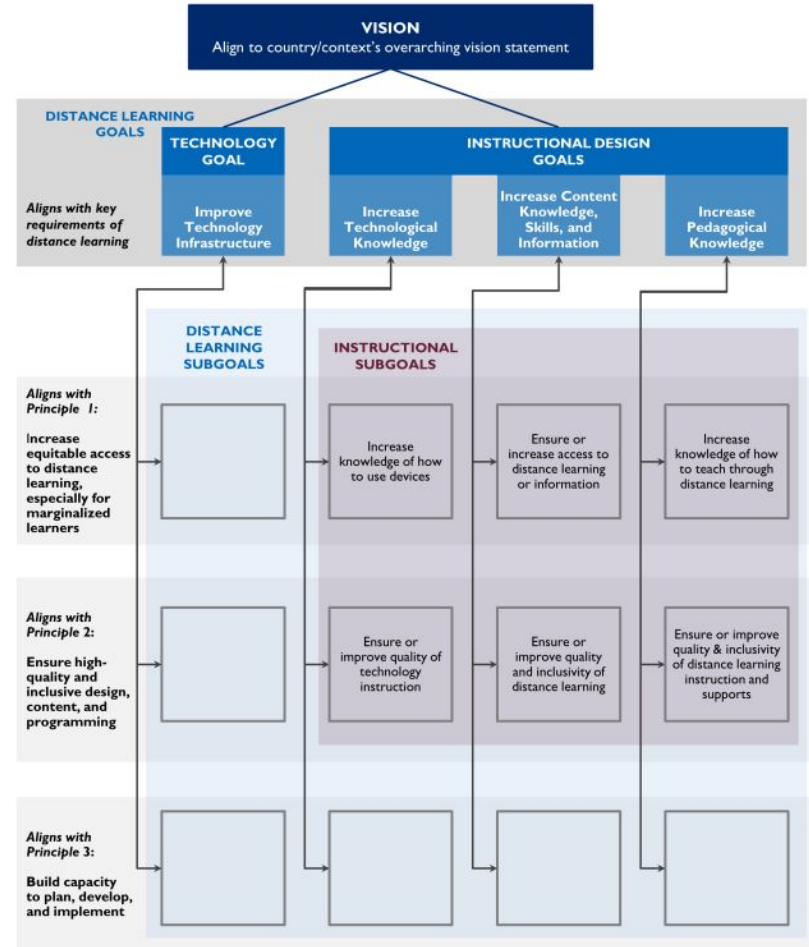
# Vision

According to UNESCO, “a policy vision should express a clearly articulated view of what should change and what the result should be when the policy is successfully implemented” (↑[UNESCO, 2022](#)).

It should also be:

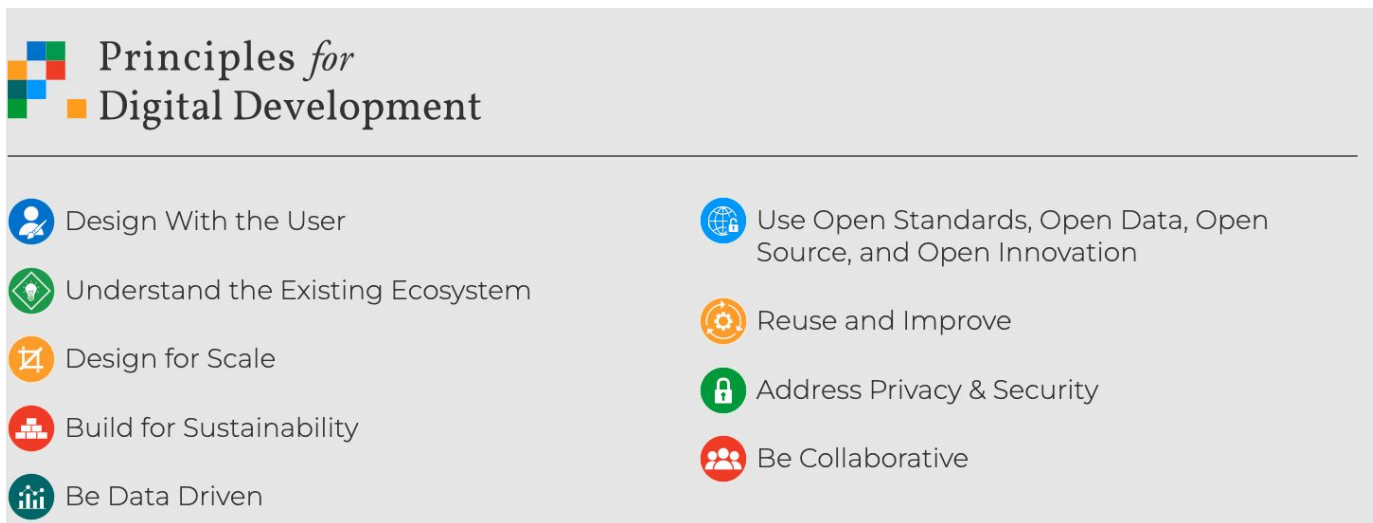
- concise and specific
- informed by the situation analysis
- aligned with broad priority areas for the development of the country

The template created by USAID on the right includes example goals such as: improve technology infrastructure, increase technological knowledge, etc. (↑[Morris & Tan, 2021](#)).



# Design principles, delivery approach and standards

The [Principles for Digital Development](#), developed by various stakeholders including the Gates Foundation, SIDA, UNICEF, World Bank, and USAID, can be applied to the strategy development process.



# Design principles, delivery approach and standards

- 1. Design With the User:** Gather information about the user through conversation, observation and co-creation; and use the gathered information in building, testing, and redesigning tools until they effectively meet user needs.
- 2. Understand the Existing Ecosystem:** Consider the particular structures and needs that exist in your country, and dedicate time and resources to analysing the ecosystem to ensure that the selected technology tools will be relevant and sustainable and will not duplicate existing efforts. Ecosystems are defined by the culture, gender norms, political environment, economy, technology infrastructure and other factors that can affect users' ability to access and use technology.
- 3. Design for Scale:** Achieving scale can have different meanings in different contexts, but it requires adoption beyond a pilot population and often necessitates securing funding or partners that take the initiative to new communities or regions. Designing for scale means thinking beyond the pilot and making choices that will enable widespread adoption later, as well as determining what will be affordable and usable by a whole country or region.

## Design principles, delivery approach and standards

**4. Build for Sustainability:** Sustainability is essential if user and stakeholder contributions are not to be minimised due to interruptions, such as a loss of funding, and it is thus vital to maximise long-term impact. A programme built for sustainability is more likely to be embedded into policies, daily practices, and user workflow.

**5. Be Data Driven:** Decision-making needs to be informed by quality data collected through rigorous methods. Investigating the readiness of national infrastructure and users (both learners and teachers) is essential for making informed decisions. If possible, break down the collected data geographically and demographically.

**6. Use Open Standards, Open Data, Open Source, and Open Innovation:** An open approach can help to increase collaboration and avoid duplicating work that has already been done. Programmes can maximise their resources — and ultimately their impact — through open standards, open data, open source technologies and open innovation.

## Design principles, delivery approach and standards

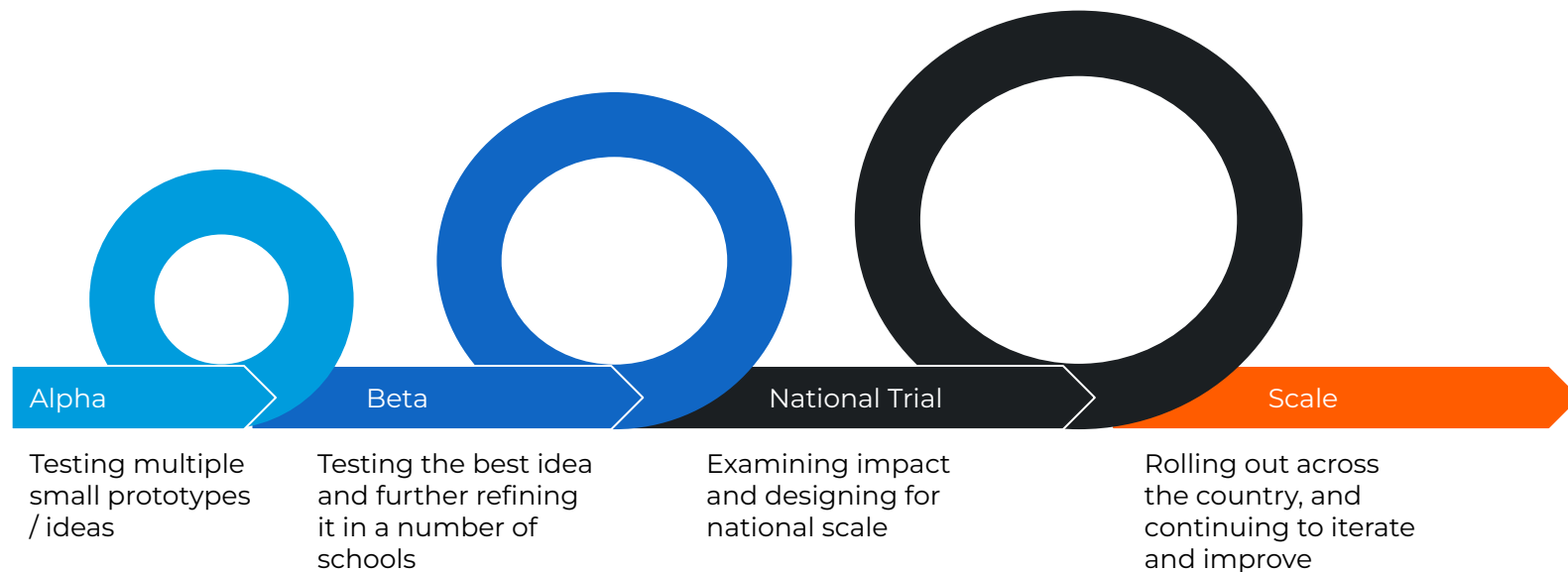
**7. Reuse and Improve:** Instead of starting from scratch, look for ways to adapt and enhance existing products, resources, and approaches. Start by identifying relevant technology tools and digital content that have already been tested. While an existing tool may not exactly fit all your needs for reuse, consider improving and building on it, rather than creating something entirely new. Reusing and improving can also dramatically reduce the time needed for development and testing, and reduce your costs.

**8. Address Privacy & Security:** Carefully consider which data you will collect and how it will be acquired, used, stored, and shared. Ensure that there are measures in place to protect confidential information and the identities of individuals represented in data sets from unauthorised access and manipulation by third parties.

**9. Be Collaborative:** Share information, insights, strategies, and resources across projects, organisations, and sectors to increase efficiency and impact.

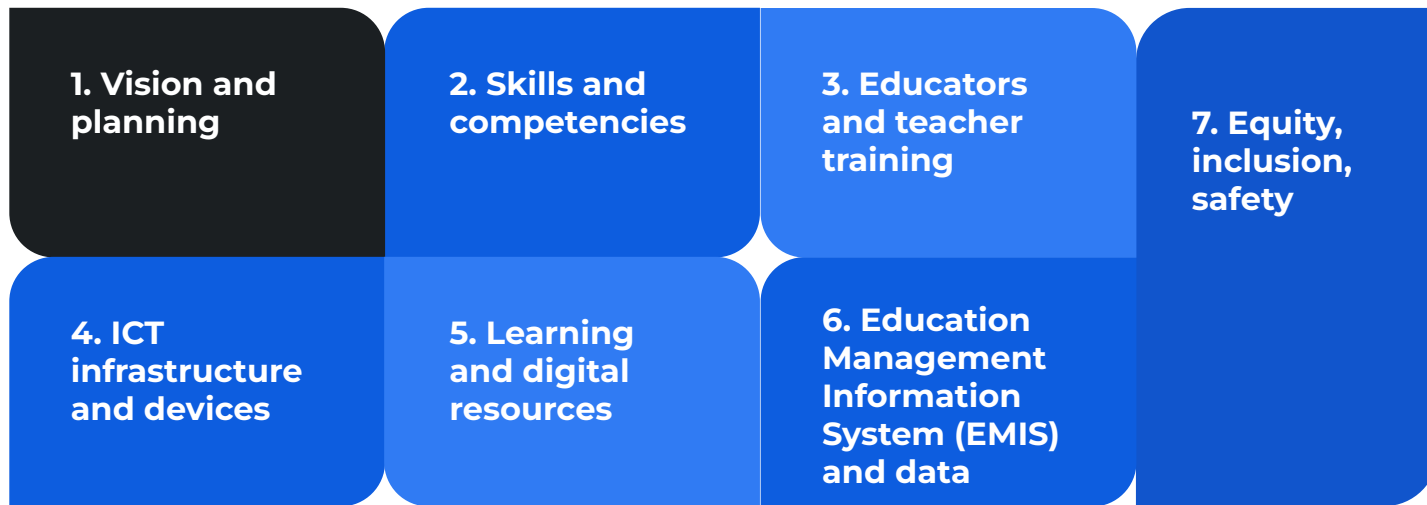
# Design principles, delivery approach and standards

Adopting agile and adaptive practices can lead to better-designed and more responsive strategies ([Government of the United Kingdom, 2021](#)).



## Priority areas

Choosing which of the following components to prioritise will depend on the local context, the specific challenges that a country is experiencing, and the opportunities that are available. The priority areas should be aligned to the vision and informed by the situation analysis.



# Priority areas

Example action items, aligned to priority areas, might include:

## 3. Educators and teacher training

- Streamline strategies for pre- and in-service teacher training and ongoing support
- Establish standards for teachers' ICT competencies
- Support the development of professional networks and communities of practice
- Leverage ICT to improve the quality of learning in core subject areas

## 4. ICT infrastructure and devices

- Build a database and analyse the state of the digital infrastructure available for schools
- Ensure there is adequate technical support (e.g., help desk, troubleshooting software)
- Determine implementation for providing digital infrastructure to schools

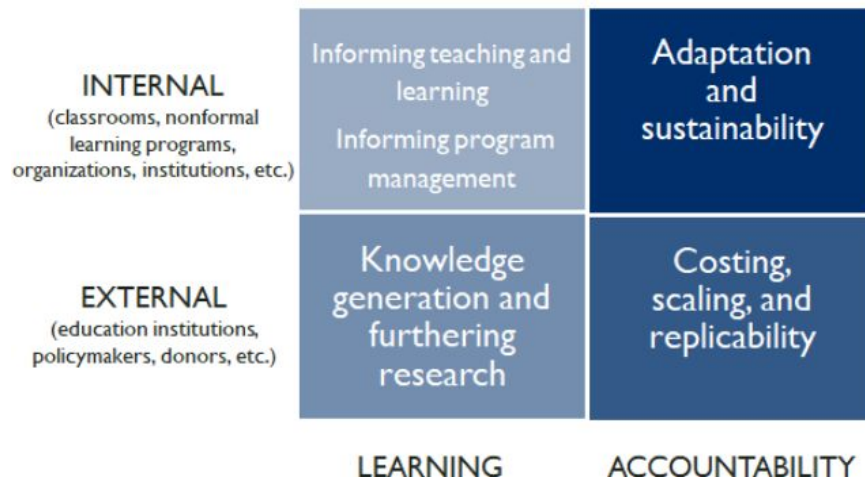


# Maintaining and updating the strategy

Maintaining and updating the strategy will require elements of monitoring and evaluation (M&E).

**Monitoring** is “a process that tells us what is going well or where we should pay more attention” ([↑Kaye et al., 2020](#)).

**Evaluation** “is a process that attempts to determine as systematically and objectively as possible the relevance, effectiveness, efficiency, and impact of activities in the light of specific objectives” ([↑Khalayleh et al., 2021](#)).



## Maintaining and updating the strategy

M&E requires establishing key performance indicators (KPIs) to compare goals with what has actually been achieved. Each KPI should have:

- ❑ a baseline and
- ❑ an identified source of data.

↑UNESCO (2022) states:

“Quantitative KPIs can be defined to serve two types of objectives. The first is measuring shares or index values and informing the progress: for example, the rate of teachers with ICT skills before the intervention and each year after its implementation.

The second one is indicating the status of progress towards a normative goal, which is sometimes disaggregated into segments on a spectrum. For example, if the goal is ‘all primary schools provide their pupils with access to the internet at least once a week’, the indicators can be grouped as e.g. less than 25 per cent of pupils, 25–50 per cent of pupils, 50–75 per cent of pupils, and nearly all pupils.”

# Recommendations for the Laos team

# Applying the process to the Laos context

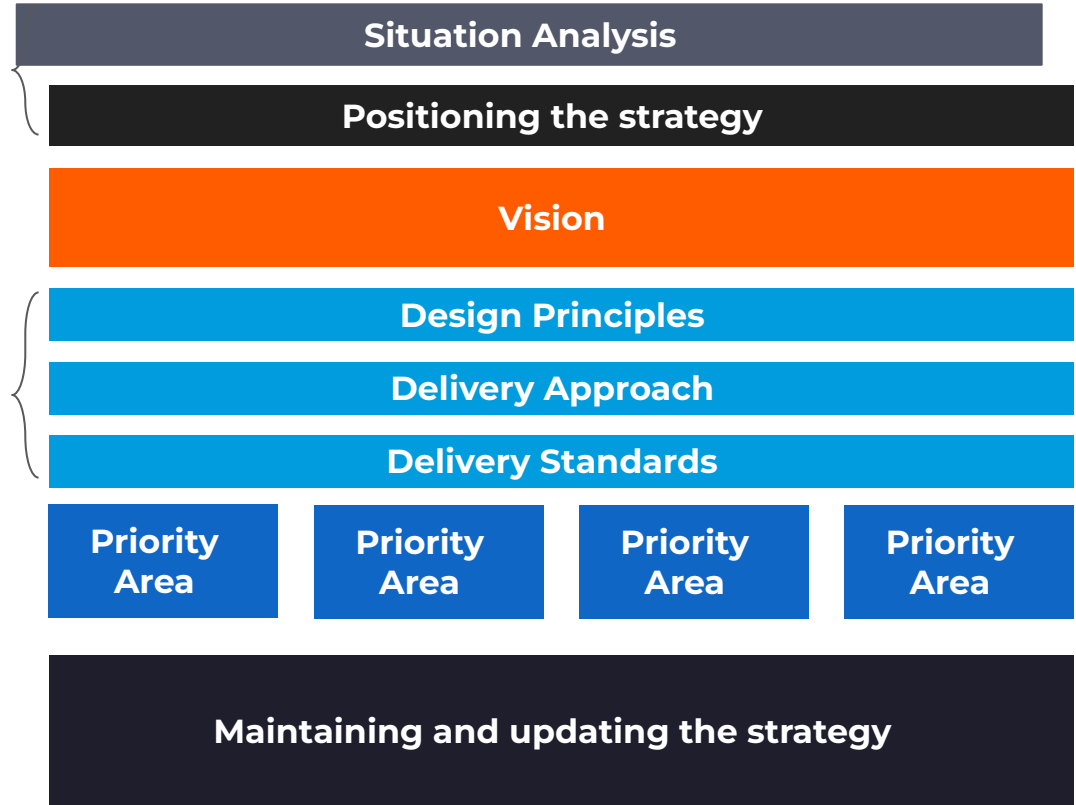
✓ Use existing assessments and resources to inform future iterations of the strategy

→ Update the vision from the 2016 draft strategy to reflect latest developments with remote learning during Covid-19 and efforts to “build back better” and more resilient education systems

→ Emphasise equity, designing for scale, and building for sustainability throughout the ICT in Education strategy

✓ Reflect the six strategies listed in the 2016 draft strategy in this section

→ Regularly collect data to map patterns of use of ICT in education and digital competencies and skills. Establish a clear understanding of the lifecycle of the strategy — when it is next expected to be updated — and how to feed information into this process



## Additional recommendations: align and collaborate with government and other stakeholders

- Form working committees to lead the development and implementation of the strategy
  - Directors and other staff from the MoE should spearhead this effort (e.g., Department of Teacher Education, Department of Vocational and Technical Education, Information and Communication Technology Centre)
  - The Information and Communication Technology Centre Director can liaise with the Ministry of Technology and Communication to ensure that the strategy applies across the government
- Involve development agencies, civil society organisations (CSOs), non-governmental organisations (NGOs), teachers and the private sector
- Partner with IT firms, internet service providers and other private sector organisations to facilitate equitable use of ICT

## Additional recommendations: focus on digital skills and ICT infrastructure

- Ensure that digital skills are a key part of teacher training
- Prioritise development of ICT competencies at every level of the government and schools. The following steps can be undertaken:
  - Conduct a baseline survey of existing ICT skills and initiatives
  - Map future digital skills needs across the digital skills curriculum ranging from basic and intermediate to advanced
- Partner with the Ministry of Technology and Communication to invest in ICT infrastructure at the ministerial and school levels

## Additional recommendations: incorporate a lens of equity and inclusion

- Identify groups of students that are at risk of being marginalised when accessing education (e.g., students from low-income families, students with special educational needs and disabilities, girls)
- Employ a data-driven, multi-modal approach (e.g., low-tech and high-tech devices) to ensure that all learners are reached
- Promote and monitor access to education and ICT in education initiatives for marginalised learners

## Example high-level timeline for next steps

| Month                                                                                                                                   | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|-----------------------------------------------------------------------------------------------------------------------------------------|---|---|---|---|---|---|---|---|---|----|
| <b>Positioning the strategy:</b> Establish working committees to oversee the design and implementation of the ICT in Education strategy |   |   |   |   |   |   |   |   |   |    |
| <b>Situation analysis:</b> Gather additional data (as needed)                                                                           |   |   |   |   |   |   |   |   |   |    |
| <b>Vision and design principles, approach and standards:</b> Reach consensus on vision and guiding principles for the strategy          |   |   |   |   |   |   |   |   |   |    |
| <b>Priority areas:</b> Reach consensus on key components to focus on (e.g., teacher training, digital resources)                        |   |   |   |   |   |   |   |   |   |    |
| <b>Priority areas:</b> Design a work plan to implement each priority area                                                               |   |   |   |   |   |   |   |   |   |    |
| <b>Maintain and update the strategy</b>                                                                                                 |   |   |   |   |   |   |   |   |   |    |



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## Further reading

- Themes & characteristic components of ICT in Education (EdTech) policies ([World Bank rubric](#))
- ICT in Education Policy Toolkit ([UNESCO toolkit](#))
- Guidelines for ICT in education policies and masterplans ([UNESCO book](#))
- Toolkit for Designing a Comprehensive Distance Learning Strategy ([USAID toolkit](#))
- EdTech Vision 2025 ([EdTech Advisory Forum report](#))
- National EdTech strategies: what, why, and who ([EdTech Hub blog](#))