

KNOWLEDGE PACK



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INNOVATION ECOSYSTEMS

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Introduction

What is a KP?

Knowledge Packages (KPs) are short, pragmatic guides on individual topics within EdTech, meant to provide sufficient knowledge and understanding so that non-technical stakeholders can make key planning, design, and procurement decisions for education.

They can be used as a starting point for the planning of technology deployment to improve education, especially with education ministries.

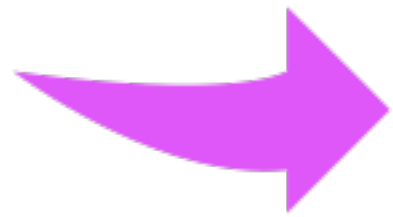
About this KP

This knowledge pack is designed to support the [main target audience](#) as they work with education ministries to leverage the innovation ecosystem for remote learning, especially during COVID-19 and other emergencies.

WHO are the main stakeholders ?



MAIN TARGET AUDIENCE



- **World Bank staff** (particularly, Task Team Leaders),
- **decision-makers** beyond the World Bank who support education ministries on education technology,
- **EdTech companies** and **innovators**, and
- **EdTech investors**.

WHY is this KP designed ?

PROBLEM STATEMENT

The COVID-19 pandemic has left more than 1.1B children out of school with more than 65% of countries mandating school closures COVID highlights that education is everyone's responsibility.

With the length of school closures uncertain, countries are attempting to support learning of students out-of-school and, in almost all cases, are turning to the use of education technology (EdTech) to support remote learning.

Middle- and high-income resource contexts in countries are **deploying online learning systems** (e.g., learning management systems, video conferencing) with some also **using broadcast media** (e.g., television, radio, mobile phones) and print media as supplementary channels of delivery. However, online learning has exposed huge digital divides within and

across countries.

Low-resource contexts in Lower Income Countries (LICs) and Fragile, Conflict, and Violence (FCV) affected environments typically lack the necessary connectivity and devices, so are almost solely **deploying basic EdTech tools such as educational television, radio, and mobile phones**, supported by print materials. Innovations are often localized and can come from all parts of a country.

Ministries of Education have limited capacity and cannot design and implement education programs alone. Policies can engage the broader ecosystem and engage innovators. As countries work quickly to support students at home, there is an opportunity to work better, faster, and in a more sustainable way through partnerships with local and global EdTech entrepreneurs

by way of incubators and accelerators, private sector investors, tech companies, and universities and research centers. **Education systems should take a whole-of-government and multi-stakeholder approach, both inside and outside the system. Education systems must bring together stakeholders like telecom companies, publishers, local EdTech startups, and radio and TV stations. (World Bank Principle #4 for EdTech applied to remote learning during COVID-19.)**

WHY is this KP designed ?

BENEFITS

INNOVATION ECOSYSTEMS AS A TOOL TO INNOVATE ON DIGITAL EDUCATION MATERIALS FOR TEACHERS AND STUDENTS

Government can be instrumental in enabling and scaling education innovations through the creation of **innovation-friendly policies** for doing business, reliable legal frameworks (including property and IP protection), business associations, and supportive innovation ecosystems, such as open data and innovation promotion.

At the same time, procurement and infrastructure can limit government's ability to enable innovation. To overcome these barriers, governments can leverage the expertise and resources of other actors that are also interested in improving education outcomes. We call this community/network/interconnected system of actors an ecosystem. We refer to the interconnected system of actors who are entrepreneurial and innovating an innovation ecosystem.

Governments can create:

- incentives for the private sector to invest in education
- transparency of procurement rules (bidding, awarding) so EdTech companies can successfully navigate procurement
- incentives for the private sector to provide EdTech products (conflict of interest can block procurement)
- universal service funds for connectivity where there is no commercial incentive (rural areas) to increase reach to underserved areas
- awareness of local end-user beneficiary preferences (e.g., preference for specific video streamers or social media platforms) so materials are designed to fit local context
- familiarity of supply/demand issues (e.g., sufficient supply of content but missing

channel/platform that is sufficiently engaging/interactive)

Government needs to think about its role in **centralizing or decentralizing education decisions** and funding, and how this creates/enables a market for EdTech companies' needs (policies, stimulus, being customer, ease of doing business).

Examples of Government Enabling EdTech Innovation:

Singapore (special visas, financial support), Berlin (financing for employee and office costs, subsidized health insurance), Stockholm (grants, alliance access international markets), and Tel Aviv (loans, state-backed incubators) benefitted from government support.



is this KP designed ?

BENEFITS

GOVERNMENTS CREATING INCENTIVES FOR INNOVATION

INITIAL PHASE OF INNOVATION HUB

Australia's EduGrowth was formed by a collaboration of public research universities.

MUNICIPAL SUPPORT

In Singapore, the Government provided seed money for EduSpaze and continues to be the primary sponsor.

PROCUREMENT

Finland's Helsinki Education Hub has working partnerships with the cities of Helsinki and Espoo.

PUBLIC EDUCATION SYSTEM COOPERATION

Enterprise Singapore gives EduSpaze companies preferred access to government procurement.

PUBLIC UNIVERSITIES

Boston's LearnLaunch Institute has a public-private partnership with the Massachusetts Department of Elementary and Secondary Education and the Massachusetts School Support Network EdTech Testbed (MassNET) to support personalized and blended

learning in its schools, including engagement by teachers. Entrepreneurs at Helsinki Education Hub and xEdu have access to Education Alliance Finland, a public-private organization that arranges for them to validate impact of learners by working with educators in Finland.

RENT

Australia's EduGrowth was formed by a collaboration of public research universities.

Differents countries' incentives

WHY is this KP designed ?

BENEFITS

USES AND ADVANTAGES OF INNOVATION ECOSYSTEMS



Generate New Ideas for Distance Education

EdTech companies and entrepreneurs at incubators and accelerator programs in the innovation ecosystem can develop new EdTech products and services to support distance education for children out-of-school.



Ensure EdTech Innovations Account for Proper Pedagogy

Universities and Research & Development Facilities in the innovation ecosystem can ensure that EdTech innovations take into account proper pedagogy and efficacy for intended learners and produce evidence-based research on the use of EdTech by educators and learners.



Provide Financial Support for EdTech Innovation

Innovation-oriented investment firms and philanthropies in the innovation ecosystem can play an important role in scaling innovation by sharing knowledge and making strategic investments.



Expand Broadband Access to Areas that Remain Offline

Telecom operators can offer broader connectivity, which is critical to accessing online educational resources.

WHY

is this KP designed ?

EVIDENCE

EVIDENCE FOR EFFECTIVENESS OF INNOVATION ECOSYSTEMS FOR INNOVATION



CAUTIONS

- A social structure of innovation and long-term view is needed ([Kauffman, 2013](#)).
- Teachers' selections are important to EdTech adoption ([World Bank WDR, 2018](#) and [Omidyar, 2019](#)).
- This is an iterative process and flexibility will be needed for any funding required ([IDIA, 2017](#)).
- Be careful about government- and academic institution-led hubs. Demand and market drivers birthed the large majority of tech hubs in Africa, not government ([Kelly and Firestone, 2016](#)).



ELEMENTS FOR SUCCESS

- Bring together educators, researchers, developers, investors, and students for an ecosystem exchange to inform program design and provide periodic feedback ([Hughes, 2019](#)).
- Understand EdTech market dynamics globally, regionally, and locally ([Holon IQ, 2019](#)).
- Involve universities and research centers to spread the gains of hub innovation ([Kelly and Firestone, 2016](#)).
- Recognize the factors influencing scaling and sustainability ([IDIA, 2017](#)).



POLICY LEVEL CONDITIONS

- Balance the contributions of academic, government, and private sectors ([Kelly and Firestone, 2016](#)).
- A highly risk adverse culture, especially in the Ministry of Education, bodes ill for program success ([IDIA, 2017](#)).
- The state of the education policy and strategy ([Omidyar, 2019](#))
- An enabling environment and incentives for innovation ([World Bank WDR, 2018](#))



are the potential solutions?

INTERACTIONS WITH THE INNOVATION ECOSYSTEM

EXAMPLES OF EDTECH COMPANIES 1/2

Early Childhood

- [Kinedu](#) (Monterrey) — Early childhood development
- [Kide Science](#) (Helsinki) — Early childhood science ed
- [Lele Ketang](#) (Beijing) — Interactive K12 education
- [BIJU'S](#) (Bangalore) — K12 learning app

Mobile

- [Gnowbe](#) (Singapore) — Mobile-first skills development
- [Lab4U](#) (Santiago) — Mobile-first science education

Project-Based Learning

- [Crehana](#) (Lima) — Project-based learning platform
- [PenPal Schools](#) (Austin) — Student project-based learning

Subject-Specific

- [99Math](#) (Tallinn) — Live math competitions
- [Amboss](#) (Berlin) — MEdTech knowledge platform
- [Labster](#) (Copenhagen) — Virtual science lab
- [VIPKID](#) (Beijing) — Real-time language immersion
- [Bon Education](#) (UAE) — Business learning services

Engineering

- [Cherpa Education](#) (Beirut) — IT courses online for teenagers
- [Open Education](#) (Bogota) — Offers online certificates in digital technology specializations
- [Moringa](#) (Nairobi) — IT skills courses
- [Kenzie Academy](#) (Indianapolis) — Training software and UX engineers



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INTERACTIONS WITH THE INNOVATION ECOSYSTEM

EXAMPLES OF EDTECH COMPANIES 2/2

Payments

- [Zelda Learning](#) (Cape Town) — Bursary management platform
- [EdAid](#) (London) — Student's tuition payments
- [MPOWER Financing](#) (Bangalore) — Student digital lending

Curriculum-Focused

- [Faria Systems](#) (Taipei) — Curriculum-focused learning platform
- [Nafham](#) (Cairo) — Online school curriculum platform
- [Newsela](#) (New York City) — Instructional content platform

Content

- [Edraak](#) (Amman) — Free ed content platform
- [Maestrik](#) (Bogota) — Custom virtual classes
- [Ubungo](#) (Dar es Salaam) — Localized edutainment
- [Degreed](#) (San Francisco) — Upskilling platform
- [Toppr](#) (Mumbai) — After-school learning app
- [Brainshare](#) (Kampala) — E-learning platform
- [Everest Education](#) (Ho Chi Minh City) — Personalized learning for Vietnam

Assessments

- [Imbellus](#) (Los Angeles) — Gamified skills assessment

Other

- [Akilah Institute](#) (Kigali) — Women's postsecondary education
- [Teacherly](#) (Dubai) — Peer-to-peer coaching platform



are the potential solutions?

INTERACTIONS WITH THE INNOVATION ECOSYSTEM

EXAMPLES OF EDTECH INCUBATORS AND ACCELERATORS 1/2

EdTech accelerators and incubator programs support EdTech innovators as they build new companies through capacity development (bootcamps, skill training, legal advice, marketing, hiring), networking (meetups to foster the EdTech community, exposure to universities and EdTech research & development centers, introduction to innovation-oriented investment firms), and funding.

These programs fall into two categories, incubators and accelerators — distinguished by the types of startups that they support.

- **Incubators** focus on earlier stage companies, helping the founding team build out the business model and the innovation or disruptive idea.

- **Accelerators** focus on later stage companies, helping the team grow and scale the existing, but still startup stage, company.

Governments can leverage the talent in these communities: for example to design, build, and sustain digital platforms.

Examples of EdTech Incubators and Accelerators:

- [EduSpaze](#) (Singapore) — public (Enterprise Singapore)-private (Spaze Ventures) partnership developing an ecosystem for Southeast Asia; based on xEdu model.
- [Emerge Education](#) (London) — EdTech-focused venture fund established an

innovation hub to expand its deal flow and determine which companies are the best fit for additional investment. Funded by a venture firm. Serves and invests in European and North American companies.

- [Institute for the Future of Education](#) (Monterrey, Mexico) — affiliated with Tecnológico de Monterrey, which strengthens its learning research; has programs for early and later stage companies.
- [LearnLaunch](#) (Boston) — partnership between a non-profit focused on providing proven EdTech innovations to benefit underserved learners, the State of Massachusetts K12 system, and university researchers. The entity also conducts research studies on EdTech. It includes companies worldwide.



are the potential solutions?

INTERACTIONS WITH THE INNOVATION ECOSYSTEM

EXAMPLES OF EDTECH INCUBATORS AND ACCELERATORS 2/2

- [USC Rossier EdVentures](#) (Los Angeles) — allied with School of Education. A rethinking of the incubator-accelerator model, making it primarily virtual, with a personalized curriculum, and composed of entrepreneurs who are largely women and people of color. It is funded by the university and private sources. Portfolio companies are global, including lower income countries (from six continents).
 - [WISE EdTech Accelerator](#) (Doha) – part of the larger education network of the Qatar Foundation and WISE, which supports innovation, conducts new research into EdTech, and is building a global EdTech community.
 - [Imagine K12](#) (Silicon Valley) — was independent and became the education arm of [Y Combinator](#). Review the operations of Y Combinator in Silicon Valley, arguably the most respected incubator-accelerator.
 - [Learn Space](#) (Paris) — focuses on Europe and post-secondary education companies, as well as providing services for universities.
 - [Injini](#) (Cape Town) — grew out of a local economic development initiative and serves African startups, with programs throughout the continent .
 - [Mastercard Foundation](#) (Kigali) — newly started regional program for early-stage EdTech companies in Uganda addressing the future of work.
 - [xEdu](#) (Helsinki) — a global program soon to partner with [UNTIL](#). One of the original EdTech incubators-accelerators, which took advantage of the innovative mindset of the educational system in Nordic countries. They have been supported largely by companies and public-private partnerships. Emphasis on pedagogy.
- [Zhongguancun Internet Education Innovation Center](#) (Beijing) — focuses on domestic online ed & test prep as part of large and integrated tech cluster that has government support.
 - [EDUGILD](#) (Pune, India) — part of Maharashtra Institute of Technology, collaborating with the school of engineering and centered on South Asia market.
 - [EduGrowth](#) (Melbourne, Australia) -- formed by several universities and a large EdTech company; includes an incubator and does advocacy.



are the potential solutions?

INTERACTIONS WITH THE INNOVATION ECOSYSTEM

EXAMPLES OF UNIVERSITIES AND R&D FACILITIES FOR EDTECH

- [Wits School of Education](#) (Johannesburg) — Division of Educational Information and Engineering Technology; does ICT evaluation.
- [Peking GSE](#) (Beijing) — Department of Educational Technology & a Learning Science Lab.
- [HKU Faculty of Education](#) (Hong Kong) — Centre for Information Technology in Education & UNESCO Chair for comparative research
- [Nanyang National Institute of Education](#) (Singapore) — significant global partnerships & research
- [Cambridge Faculty of Education](#) (Cambridge) — home of EdTech Hub & research on Education & International Development.
- [Helsinki Faculty of Educational Sciences](#) (Helsinki) — specialist group on Maker culture, Design learning and Technology (MaDe); collaborates with xEdu accelerator.
- [UCL Institute of Education](#) (London) — UCL Knowledge Lab on media, technology and communication in the digital age & Centre for Education and International Development.
- [Tecnológico de Monterrey](#) (Monterrey) — Observatory of Education Innovation has affiliated incubator, accelerator, research, and an active media presence.
- [University of Tokyo](#) — Advanced School for Education and Evidence-Based Research accumulates evidence from secondary and higher education schools in Japan.
- [Queen Rania Teacher Academy](#) (Amman) — developed with MoEd; many affiliations with universities & development organizations worldwide; focus on educators in the Arab World.
- [Harvard GSE](#) (Boston) — degree program in Technology, Innovation & Education; analyzes policy interventions in developing nations along with the OECD & World Bank.
- [USC Rossier](#) (Los Angeles) — center for combining engineering thinking with education; first prominent GSE to offer grad programs online; hosts the USC Rossier EdVentures innovation hub.
- [Stanford GSE](#) (Palo Alto) — combines the University's expertise in design with learning sciences & technology for degree programs and research.

WHAT are the potential solutions?

INTERACTIONS WITH THE INNOVATION ECOSYSTEM

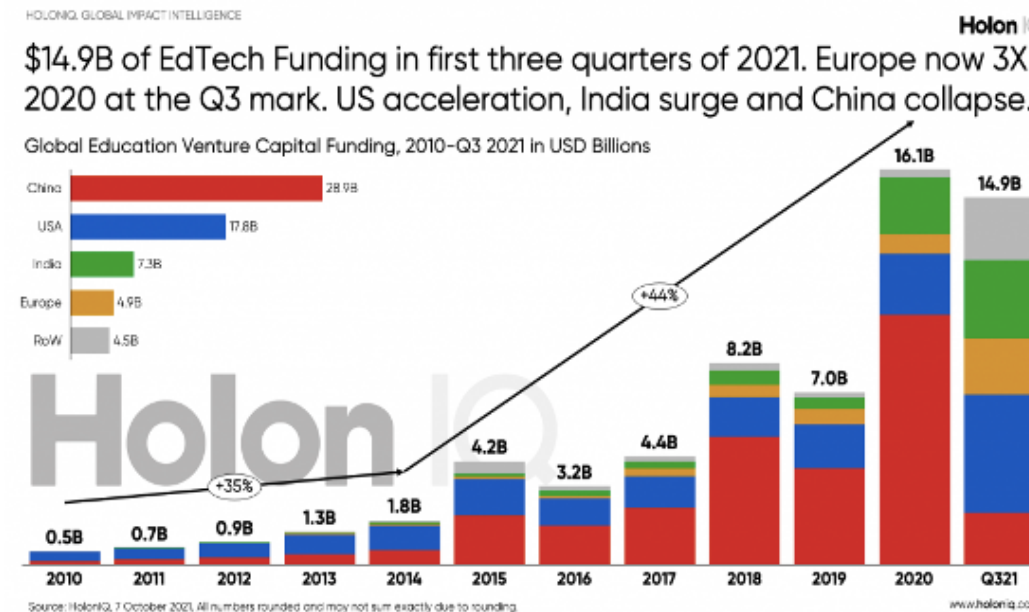
EXAMPLES OF INNOVATION-ORIENTED INVESTMENT FIRMS IN EDTECH 1/2

Government needs to think about how it is diversifying funding for education.

Private sector tech companies and investors who invest in education can play an important role in scaling innovation by sharing knowledge and making strategic investments.

Governments can create incentives for the private sector to invest in education, and in doing so diversify funding.

EdTech started 2010 with \$500M of venture capital and grew 32x to \$16.1B in 2020. Through the first three quarters of 2021, EdTech attracted \$14.9B of venture capital.¹



Global EdTech venture capital is projected to triple over the next decade and Asia ([SE](#) and [South](#)), [Latin America](#), and [Africa](#) are growing

Geographic Focus

- [Kaizenvest](#) (Singapore) — focus on emerging Asian markets.
- [Blue Elephant Capital](#) (Beijing) — China's first EdTech fund.

Workforce Skills Focus

- [Achieve Partners](#) (New York) — focus on skills gap and future of work.
- [Emerge Education](#) (London) — finances work-skill companies.
- [Lumos Capital Group](#) (San Francisco, New York) — invests in knowledge services, EdTech and workforce development.
- [Rethink Education](#) (New York) — focus on life skills and vulnerable learners.



are the potential solutions?

INTERACTIONS WITH THE INNOVATION ECOSYSTEM

EXAMPLES OF INNOVATION-ORIENTED INVESTMENT FIRMS IN EDTECH 2/2

Creativity Focus

- [Brighteye Ventures](#) (Paris) — invests at intersection of learning, entertainment and creativity.
- [LEGO Ventures](#) (Bilund, Denmark) — funding at the intersection of creativity, learning, and play.

Age Focus

- [EDU Fund](#) (Beijing) — run by New Oriental Group targeting PreK-12.
- [OceanOne Capital](#) (Shanghai) — K-12 concentration.
- [Reach Capital](#) (Silicon Valley) — emphasis on teachers and students.

Other

- [Owl Ventures](#) (Silicon Valley) — world's largest EdTech VC fund.
- [Startup Chile](#) (Santiago, Chile) — public startup accelerator with investments in EdTech.



are the potential solutions?

INTERACTIONS WITH THE INNOVATION ECOSYSTEM

EXAMPLES OF WORKING WITH TELECOM OPERATORS

Connectivity is critical to accessing online educational resources. Many rural areas remain offline. To expedite broader connectivity and leverage the private sector, the government can incentivize connectivity in areas where there is no commercial value.

In countries where physical distance and transportation barriers are obstacles to bring people together for an ecosystem, broadband access allows them to do so virtually.

EdTech Examples Improved by Broadband Access

- [NRENS](#) (National Research and Education Networks) were established for the creation, development and use of advanced, reliable Internet

connectivity among teaching, learning and research communities. Since such communities will likely be part of your edtech ecosystem, if you are not a NREN member you may want to join.

- Africa and Middle East: three regional clusters of NRENS – [UbuntuNet Alliance](#) (for East and South Africa), [WACREN](#) (West and Central Africa) and [ASREN](#) (Pan-Arab) under [AfricaConnect3](#) in affiliation with the EU.
- Asia: the region is connected primarily through [APAN](#), the Asia Pacific Advanced Network.
- Latin America: [RedCLARA](#) provides regional and global interconnection by way of Europe’s GÉANT, the U.S. network [Internet2](#), the clusters noted above in Africa and Asia, as well as in

- Oceania ([AARNET](#)).
- Eastern Europe: [GÉANT](#) is the world’s largest R&E network, formed for Europe’s e-infrastructure and typically working in conjunction with the regional efforts mentioned

Please also consult these additional resources that can help you plan EdTech solutions in contexts where there’s no connectivity or where connectivity is low:

Devices KP



WHAT are the potential solutions?

CHALLENGES AND TRADE-OFFS

CHALLENGES

- Coordination across actors: EdTech companies, incubators, accelerators, universities, R&D facilities, investment firms, and broadband providers
 - » Work with central government to ensure innovation ecosystem partnerships are made a key priority during emergencies

It is also important to note that the potential effectiveness of ecosystems are also a function of trust and collaboration, even when there is technical capability, infrastructure, and a market.
- Evaluation of student learning and impact from ecosystem partnerships
 - » Use different ways to make education content engaging and interactive
- Data Ownership

TRADE-OFFS

- Speed of developing programs vs quality of programs
 - » Coordination among partners takes time in exchange for better designed, better implemented programs
- Autonomy in developing programs vs shared control
 - » Partnerships allow for better designed, better implemented programs

WHAT are the potential solutions?

WHAT HAS BEEN DONE IN OTHER COUNTRIES

CASES: INSIGHTS FROM AROUND THE WORLD

Cases Based on Cities and Countries

- Tech Innovation Ecosystems: [Chile, China, Indonesia, USA, 20 Diverse Cities](#)
- Kenya has a practical example of using procurement to promote startups - by reserving 30% of all government procurement to youth and women and disabled (but intention was really to encourage these groups to set up companies) and relaxing the procurement requirements. This has greatly enabled startups to take off and thrive ([AGPO Program](#)).
- For the U.S., the creation of telecom technologies allowed for the use of distance education, although integrated telecom systems and digital communications have been necessary for flexible remote learning ([AECT, 2011](#))

Case Based on Ecosystem Actors

- The m:Lab East Africa in Nairobi is a positive example of a tech (not necessarily EdTech focused) hub that brought together stakeholders from the private sector, academia, and the World Bank ([Kelly and Firestone, 2016](#)).
- Although China's Zhongguancun Internet Education Innovation Center in Beijing was government-created, it is geared toward promoting [market-based innovations in online learning](#); it houses venture capital companies and [video production studios](#).
- EDUGILD in Pune was started by Maharashtra Institute of Technology and operates two to three cohort acceleration programs yearly while giving companies [access to multinational tech companies](#) and a [global impact investment fund](#).

WHAT are the potential solutions?

WHAT HAS BEEN DONE IN OTHER COUNTRIES

EXAMPLES OF WORLD BANK PROJECTS WITH INNOVATION ECOSYSTEM COMPONENTS (INCLUDING DURING COVID-19)

Turkey: Safe Schooling and Distance Education ([P173997](#))

- Through a US\$160M emergency project, the Bank will support the government in developing a new digital learning platform and also create an innovation hub to engage the broader ecosystem of EdTech entrepreneurs, universities and individuals to curate and create new content and applications. The project will benefit around 6 million students.
- A Roundtable discussion was organized on June 3 with participation from Omidyar network, Mastercard Foundation, EkStep Foundation and USC EdVentures.

Nigeria: Edo Basic Education Sector and Skills Transformation Operation ([P169921](#))

A US\$75M project, is supporting the Edo State Government to adapt and accelerate the existing [EdoBEST](#) program, an innovative public-private partnership that uses technology and insights from science of learning to improve teaching and learning for all 325,000 students in Edo State.

Chile: Building and sustaining national ICT/education agencies: Lessons from Chile - Enlaces ([SABER-ICT Technical Paper Series - #07](#))

- The Enlaces program was supported by the World Bank in the 1990s as a mechanism for implementing education technology projects. It was the EdTech innovation hub for Chile.
- Early on it developed successful alliances with schools, regional universities, and the private sector. However, it became less able to encourage sound EdTech innovation the more it became part of the Ministry of Education.

To learn more about the World Bank's work in EdTech, consult the [World Bank EdTech](#) web pages. The World Bank and others have participated in projects that seek to develop economic hubs with a focus on IT infrastructure in [Africa](#), [Barcelona](#), [Cabo Verde](#), [Sri Lanka](#), and [Tuvalu](#).

HOW to implement next steps ?

PREREQUISITES

CAPACITY REQUIRED TO START INNOVATION ECOSYSTEMS

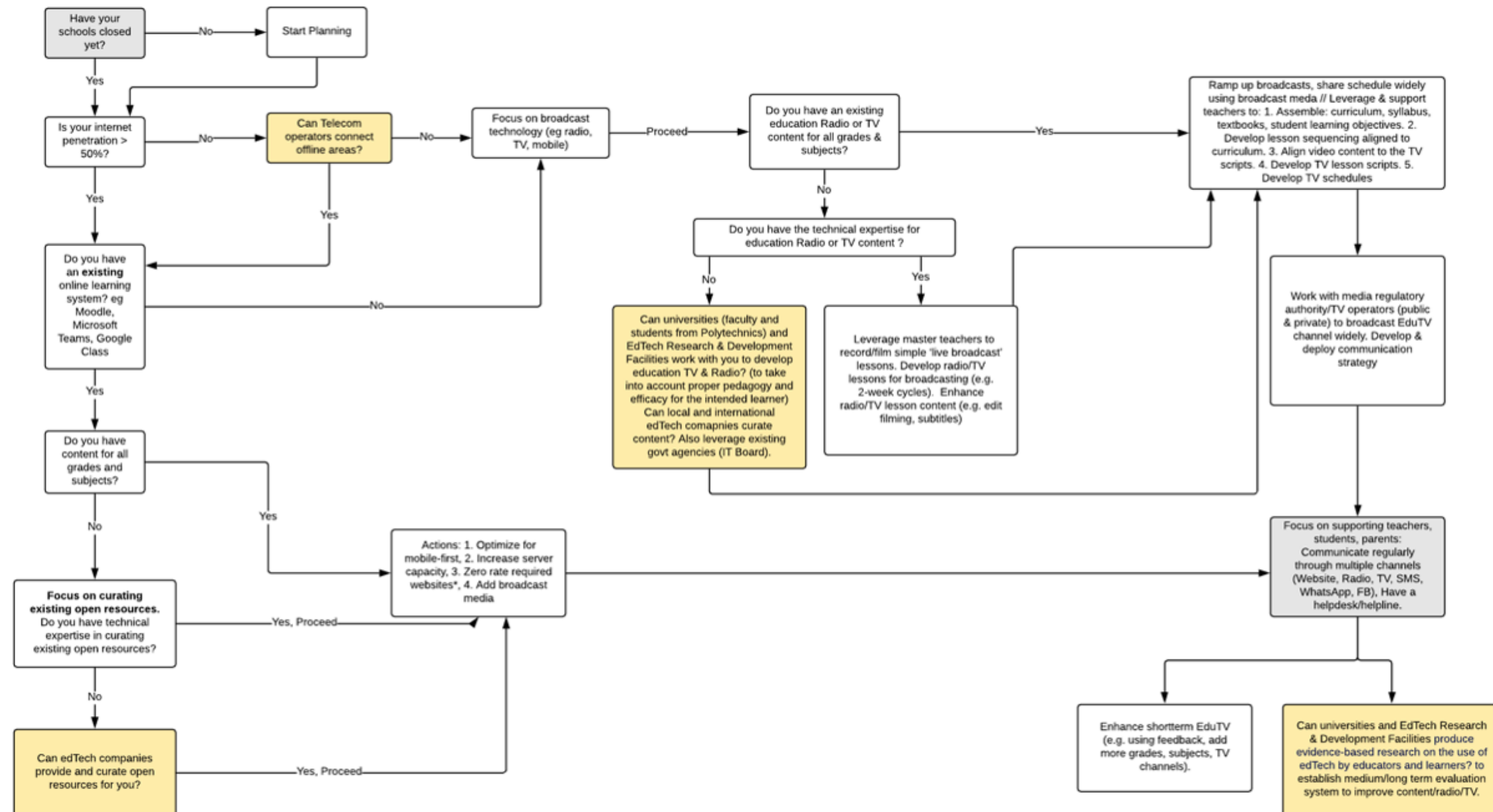
Content & Related Personnel

- teachers/education experts to present and support development of lessons with EdTech companies
- partnerships with incubators and accelerators to develop programming
- partnerships with universities and research & development facilities to incorporate pedagogy and run evidence-based research
- personnel with technical expertise in EdTech investments
- personnel with expertise in connectivity

HOW to implement next steps ?

FIRST STEPS

DECISION TREE FOR INNOVATION ECOSYSTEMS QUICK START





to implement next steps ?

FIRST STEPS

START INTERACTING WITH THE INNOVATION ECOSYSTEM

Working with EdTech Companies	Working with Incubator and Accelerator Programs	Working with Universities and EdTech R&D Facilities	Working with Innovation-Oriented Investment Firms	Working with Telecom Operators
<p>Take inventory of your existing education online content for all grades and subjects.</p> <p>Scan EdTech company landscape to identify complimentary programs.</p> <p>Reach out to local or international EdTech companies to leverage their existing content.</p> <p>Have educators/ teachers on board before approaching government with EdTech plans</p>	<p>Take inventory of your existing programs to support the next generation of EdTech innovators.</p> <p>Scan EdTech incubators and accelerators to identify complimentary programs.</p> <p>Reach out to local or international EdTech incubators and accelerators to leverage their existing programs.</p>	<p>Evaluate whether your education online content takes into account proper pedagogy and efficacy for the intended learner. Determine whether you already produce evidence-based research on the use of EdTech by educators and learners.</p> <p>Scan universities and EdTech research & development facilities to identify complimentary interests.</p> <p>Reach out to universities and R&D facilities to explore partnerships.</p>	<p>Determine whether your education spending decisions are decentralized (at the school level) or centralized (state level) and whether you have funding for education online content for all grades and subjects.</p> <p>Scan innovation-oriented and EdTech-focused investment firms to identify complementary interests.</p> <p>Reach out to firms to learn more.</p>	<p>Determine whether you have connectivity in all areas of your city/ country.</p> <p>Scan telecom operators to leverage their expertise in reaching these areas.</p> <p>Reach out to the telecom operators to explore a partnership to extend access</p>

HOW to implement next steps ?

FIRST STEPS

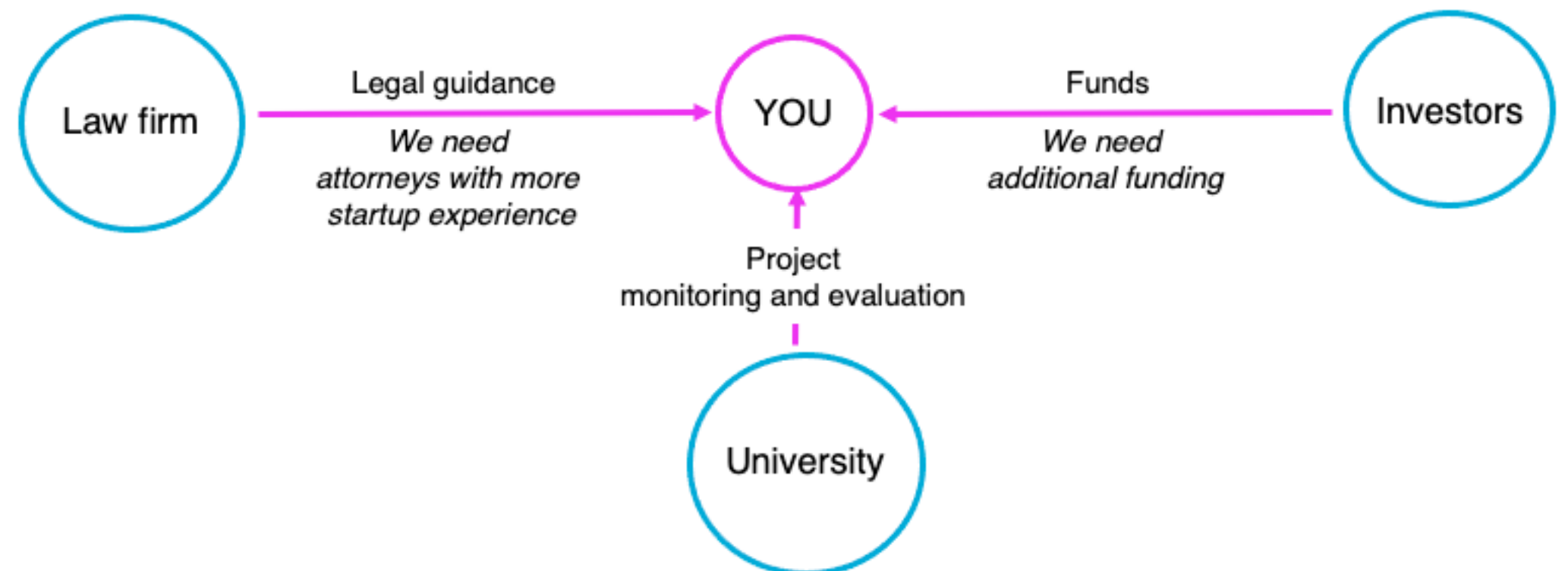
RELATIONSHIP MAPPING

- 1. Take account of your goals** to build an edtech ecosystem and current programs tied to those goals. Do those goals need to be adjusted and/or augmented?
- 2. What technology** is being used for education? How is the edtech market changing and is rationale for the current technology still relevant and scalable?
- 3. How is the edtech being used?** Does it enhance access for all? Does the evidence in your context merit its use?
- 4. Map your existing partnerships** – public, private, non-profit, etc. – at the intersection of education and technology. Note the purpose of these partnerships (e.g., supplemental learning, monitoring and evaluation,

funding) and the status of the relationships.

- 5. Reflect on and modify the partnerships.** Which are helpful in building a supportive ecosystem for practical innovation in edtech to raise educational quality and equity and which

are not? Do they match your edtech needs and capacity? Are there ways to strengthen the relationships worth maintaining? Are other partners better suited to help you carry out your goals? Are there shifting challenges that require new ecosystem partners?





to implement next steps ?

COSTS

COSTS ELEMENTS AND HOW TO KEEP COSTS LOW



BIGGEST COST ELEMENTS

- staff expenses: staff to liaise with EdTech companies, incubators and accelerators, universities and R&D facilities, investment firms, and the private sector
- if you decide to work with EdTech companies to develop content and production: research, filming, editing, and assembly
- if you decide to work with incubators and accelerators to develop programming: development of incubators and accelerators (see budget in Appendix)
- if you decide to work with universities and R&D facilities to incorporate pedagogy and run evidence-based research: researchers
- if you decide to invest in innovation: investments
- if you decide to invest in connectivity: connectivity costs



KEEPING COSTS LOW

- leverage staff already on government payroll: teachers and content developers
- instead of developing content, curate existing content from EdTech companies
- work with incubators and accelerators to use existing programming
- work with universities and R&D facilities to incorporate pedagogy and run evidence-based research at subsidized/no cost
- work with telecom operators to provide connectivity at subsidized/no cost

HOW to implement next steps ?

COMMUNITY OF PRACTICE

CREATION OF EDTECH INNOVATION HUB COMMUNITY OF PRACTICE (COP)

Creation of the Community of Practice

(CoP): In response to the growing number of EdTech innovation ecosystems and the absence of collaboration among those ecosystems, the World Bank's EdTech Team initiated the creation of a global CoP, using this Knowledge Pack as its foundation.

Mandate of the CoP: Building edtech capacity and ecosystems globally and, especially, in LMICs.

- Facilitate the conduct and dissemination of testbed-based research to accelerate the availability of reliable, third-party research on edtech impact and efficacy. Thus, contributing to fill a gap on the evidence base regarding EdTech ecosystems*
- Participate in network workshops and events – globally and regionally -- in order to share best practice and innovations.
- Assist in the implementation of edtech proof of concept pilots in countries.

- Manage and participate in opensource global public good initiatives and contextualize to Member regions and countries.
- Introductions to, and the building of, a repository of early stage education investors from around the world.
- Contribute to a global directory of talent within cohort companies and talent (entrepreneurial, operational, technological, etc.) required by those companies.
- Facilitate venture participation in testbed projects, as well as promotion through industry dialogues and events.
- Initiate and take part in innovation competitions and hackathons, especially those which evaluate and implement other edtech global public goods and address edtech challenges.

Composition of the CoP: The World Bank has partnered with WISE (Qatar Foundation)

to organize and administer the CoP.

- The CoP Members are a diverse group of less than 20 multi-stakeholder ecosystems originated by governments, the private sector, and philanthropies. The core CoP comprises the Centre for Innovative Teaching and Learning Approach (Kigali), EDUCATE (London), Helsinki Education Hub, Injini (Cape Town), LearnLaunch (Boston), MindCET (Israel), Ministry of Turkish National Education, General Directorate of Innovation and Educational Technologies (Ankara), Monterrey Tec Institute for the Future of Education (Mexico), SuperCharger Ventures (HongKong/London), USC EdVentures (Los Angeles), and WISE (Doha). Other CoP Members are in Australia, China, France, Germany and Singapore."

If you would like to Participate in the CoP: Contact the World Bank's [EdTech Team](#).

*Note :there is evidence on broader ecosystem approaches in other sectors yet there is still a need to increase research and evaluations on EdTech ecosystems.

Conclusion

WHO

The ecosystem includes key stakeholders such as **students, teachers, school leaders, parents/caregivers, NGOs, donor agencies, academia, and private sector companies**, as well as other governmental agencies and authorities. Innovative digital educational content, software, applications, algorithms, 'edutainment' and EdTech-enabled services are provided by many **organizations – some local, some regional, and some global**.

WHAT

This Knowledge pack has provided an **overview of the main benefits** of engaging a wide ecosystem to deploy EdTech interventions, including some **key examples, challenges and tradeoffs, a decision tree to help planning**, as well as some additional **ideas on relationship mapping and costs**.

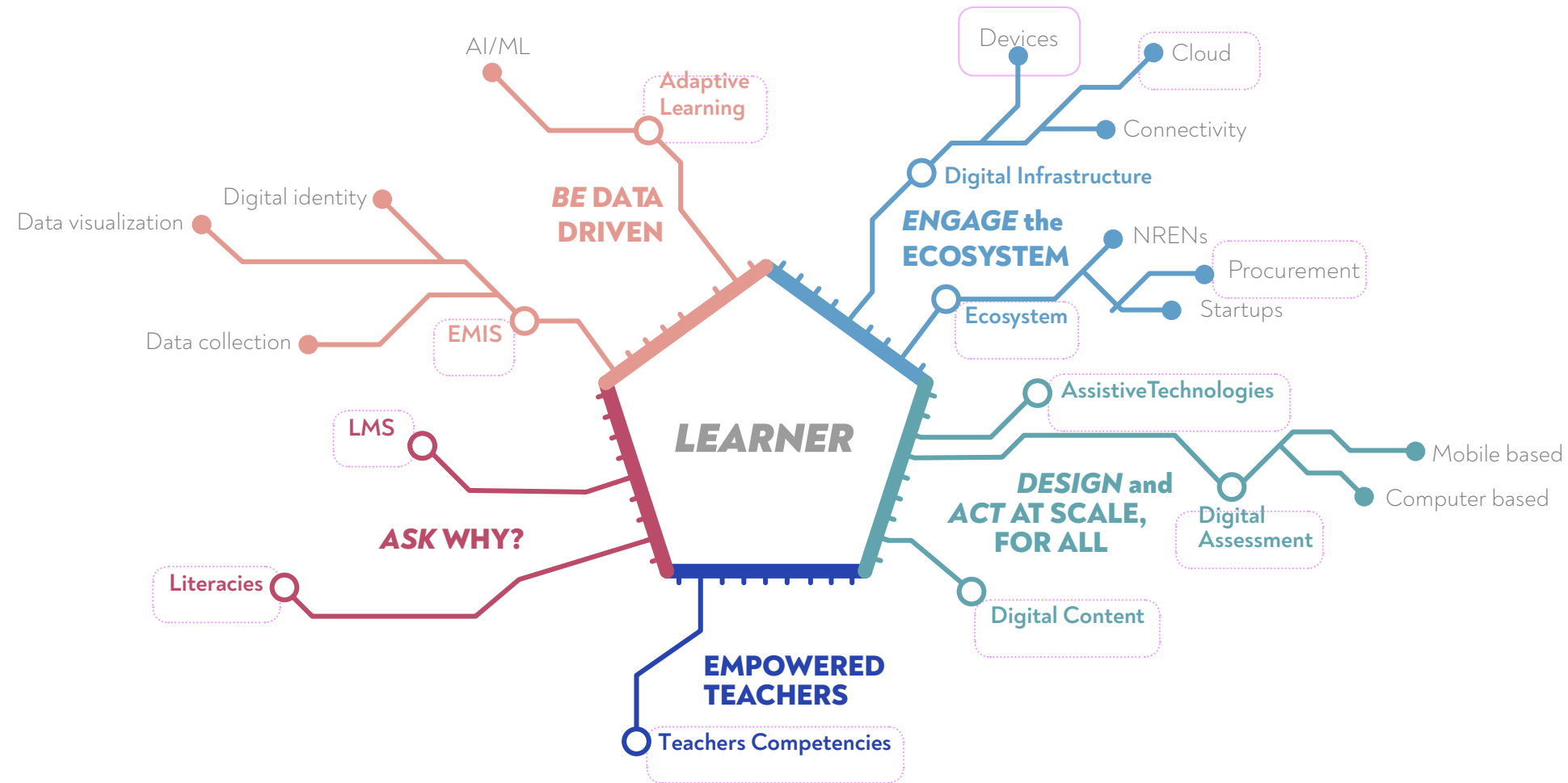
WHY

Education systems should take a whole-of-government and multistakeholder approach **to engage a broad set of actors to support student learning**.

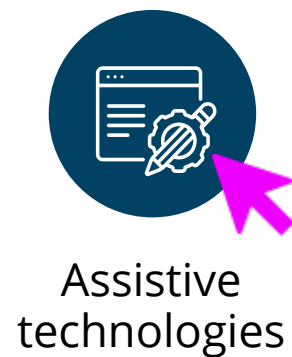
HOW

Ministries of Education should **engage, incentivize, and leverage a wide and diverse set of stakeholders, inside and outside of the education system**, when developing and implementing EdTech programs and policies, as explained by the [WB's EdTech Approach Paper](#).

To go further CLOUD OF KPs



OTHER EXISTING RELATED KPs



RELATED SOURCES



For further resources refer to the [Annexes](#)

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Annexes

ADDITIONAL RESOURCES

LINKS OF INTEREST

- The World Bank's EdTech approach is in [Reimagining Human Connections: Technology and Innovation in Education](#)
- Included in the Five Principles is [Engage the Ecosystem](#)
- [World Bank EdTech & COVID-19 Resource Page](#)
- World Bank's [Rapid Response Guidance Note: Educational Television & COVID-19](#) (4 pages) along with a blog that summarizes this guidance note (both using 40+ examples of countries using EduTV to response to school closures during COVID-19)
- [World Bank EduTech Podcast](#)
- [World Bank Knowledge Packs](#)
- [Remote Learning Knowledge Pack](#) that provides support on how to navigate through remote learning, especially during emergencies, aimed at supporting education ministries and related decision makers. (More Knowledge Packs are in development (e.g., Radio, Mobile Learning, Remote Teaching) and will be uploaded on the [World Bank EdTech & COVID-19 resource page](#) once ready.)



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