INNOVATION ECOSYSTEM KNOWLEDGE PACK

WORLD BANK GROUP
Education

Overview of Innovation Ecosystem Knowledge Pack

WHO	WHY	WHAT?	HOW?

• Audience
• Purpose
• What is a Knowledge Pack?
	• Overview of the problem (during COVID-19 & beyond)
	• Why Innovation Ecosystem? Innovation Ecosystem as a tool to innovate on digital education materials for teachers and students.
	• Uses & Advantages of Innovation Ecosystem
	• What is the evidence for effectiveness of Innovation Ecosystem for children's education?
		• What is required before starting/enhancing Innovation Ecosystem?
		  • A Decision Tree to help navigate decision making in Innovation Ecosystems
		  • What capacity is required to interact in Innovation Ecosystems?
		• What are the key costs elements involved? How do you keep costs low?
		• What are common challenges & trade-offs? How can ministries plan for them?
			• What are the key steps to start/enhance Innovation Ecosystem?
			  • Relationship Mapping
			  • Start interacting with the Innovation Ecosystem
			• Case Studies: Insights from around the world
			• Examples of World Bank projects with Innovation Ecosystem components (during COVID-19)
			• Additional Resources

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Audience & Purpose:
Who & What is this Knowledge Pack Aimed at Serving?

- **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.
- **Purpose:** 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.
- **What is a Knowledge Pack?** A series of short, pragmatic guides developed by the World Bank's EdTech team on individual topics within EdTech to support the target audience to make informed yet quick decisions about EdTech interventions in their work with education ministries.

Click here for the World Bank's website on 'Remote Learning, EdTech & COVID-19' for more related resources.
Click here for country examples of using EdTech to support teachers and learners during COVID-19.
Click here to access a curation of resources from across the world being used to support teachers and learners with remote learning.

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Overview of the Problem

- The COVID-19 pandemic has left more than 1.1B children out of school with more than 65% of countries mandating school closures.[1,2] COVID highlights that education is everyone's responsibility.
- With the length of school closures uncertain, countries are attempting to support learning of student out-of-school and, in almost all cases, are turning to the use of education technology (EdTech) to support remote learning.[3]
- 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.[4]
- Low-resource contexts in Least Developed Countries (LDCs) and Fragile, Conflict, and Violence (FVC) affected environments lacking the necessary connectivity and devices are **deploying alternative EdTech tools such as educational television, radio, and mobile phones**, supported by print materials. Innovations come from all parts of the country.[5]
- 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 at 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, radio and TV stations. (World Bank Principle #4 for EdTech applied to remote learning during COVID-19)**

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Sources: 1,2 World Bank data as of June 30, 2020. 2,3,4,5 Remote Learning Knowledge Pack. World Bank 2020.

WHY 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 around doing business, legal framework, including property and IP protection, business associations, and policies to promote the innovation ecosystem, such as open data and innovation promotion[1]

However, 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 interacting 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
- incentives for the private sector to provide edTech products (conflict of interest can block procurement)
- transparency of procurement rules (bidding, awarding) so edTech companies can successfully navigate 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
- awareness 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 to build bridges to international markets and attract investors), and Tel Aviv (loans, state-backed incubators) benefitted from government support.

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Sources: 1 World Bank 2015.

Uses & Advantages of Innovation Ecosystems

Generate New Ideas for Distance Education	Ensure EdTech Innovations Account for Proper Pedagogy	Provide Financial Support for EdTech Innovation	Expand Broadband Access to Areas that Remain Offline
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.	**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.	**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.	**Telecom operators** can offer broader connectivity, which is critical to accessing online educational resources.

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Evidence for effectiveness of Innovation Ecosystems for education

Cautions	Elements for Success	Policy Level Conditions
A social structure of innovation and long-term view is needed (Kauffman, 2013)	Bring together educators, researchers, developers, investors, and students for an ecosystem exchange to inform program design and provide periodic feedback (Hughes, 2019).	Balance the contributions of academic, government, and private sectors (Kelly and Firestone, 2016).
Teachers' selections are important to edtech adoption (World Bank WDR, 2018 and Omidyar, 2019).	Understand edtech market dynamics globally, regionally, and locally (Holon IQ, 2019)	A highly risk adverse culture, especially in the Ministry of Education, bodes ill for program success (IDIA, 2017).
This is an iterative process and flexibility will be needed for any funding required (IDIA, 2017).	Involve universities and research centers to spread the gains of hub innovation (Kelly and Firestone, 2016).	The state of the education policy and strategy (Omidyar, 2019, see slide 45)
Be careful about government- and academic institution-led hubs. Demand and market drivers birthed the large majority of tech hubs in Africa (Kelly and Firestone, 2016).	Recognize the factors influencing scaling and sustainability (IDIA, 2017, see slide 44).	An enabling environment and incentives for innovation (World Bank WDR, 2018)

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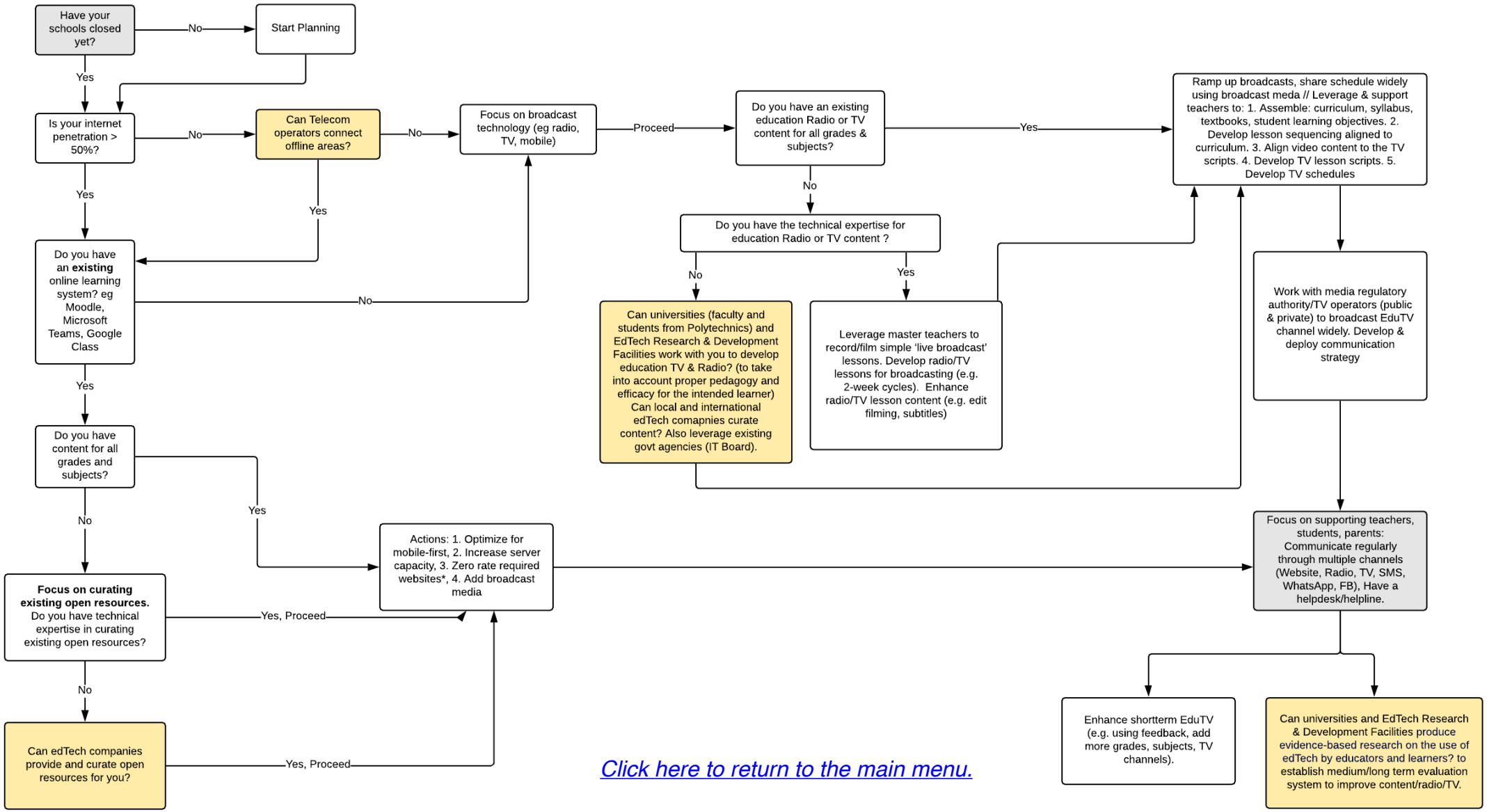
Decision Tree for Innovation Ecosystem Quick Start



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Capacity Required for 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

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Costs: Cost Elements & Keeping Costs Low

Biggest Cost Elements

- staff expenses (staff to liaise with edtech companies, incubators and accelerators, universities and research & development facilities, investment firms, private sector)
- if you decide to work with edtech companies to develop content: content development and production (e.g. research, filming, editing, assembly)
- if you decide to work with incubators and accelerators to develop programming: development of incubators and accelerators (budget in appendix)
- if you decide to work with universities and research & development 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 (eg teachers, 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 research & development facilities to incorporate pedagogy and run evidence-based research at subsidized/no cost
- work with telecom operators to providers to provide connectivity at subsidized/no cost

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Challenges & Trade-Offs of Innovation Ecosystems and How to Plan for Them

Challenges	Trade Offs

• Coordination across actors (edTech companies, incubators, accelerators, universities, research & development facilities, investment firms, broadband providers)
  • Work with central government to ensure innovation ecosystem partnerships are made a key priority during emergencies.
• Evaluation of student learning and impact from ecosystem partnerships
  • Use different ways to make education content engaging and interactive
• Data Ownership
	• 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

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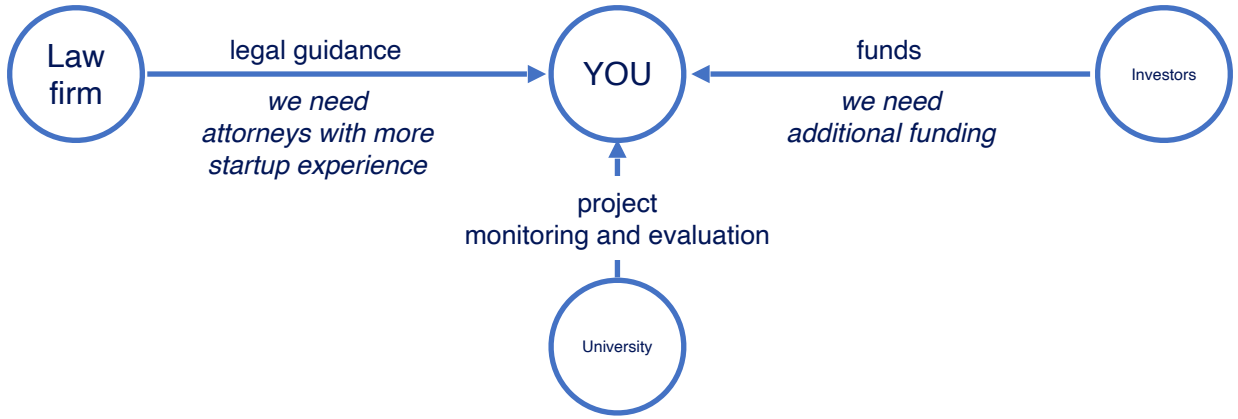
Relationship Mapping

1. **Take inventory** of your goals, the programs tied to these goals, and the partners for these programs.
2. **Map your existing partnerships** on a large piece of paper. Note the purpose of these partnerships (eg monitoring and evaluation, funding) and the status of the relationship:



3. **Reflect on the partnerships.** Are there ways to strengthen these relationships? Are other partners better suited to help you carry out your goals?

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Start Interacting with the Innovation Ecosystem

Working with EdTech Companies	Working with Incubator and Accelerator Programs	Working with Universities and EdTech Research & Development Facilities	Working with Innovation-Oriented Investment Firms	Working with Telecom Operators
Take inventory of your existing education online content for all grades and subjects.	Take inventory of your existing programs to support the next generation of edTech innovators.	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.	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.	Determine whether you have connectivity in all areas of your city/country.
Scan edTech company landscape to identify complimentary programs.	Scan edTech incubators and accelerators to identify complimentary programs.		Scan innovation-oriented, edTech-focused investment firms to identify complementary interests.	Scan telecom operators to leverage their expertise in reaching these areas.
Reach out to local or international edTech companies to leverage their existing content.	Reach out to local or international edTech incubators and accelerators to leverage their existing programs.	Scan universities and edtech research & development facilities to identify complimentary interests.	Reach out to firms to learn more.	Reach out to the telecom operators to explore a partnership to extend access.
Have educators/teachers on board before approaching government with edTech plans.		Reach out to universities and R&D facilities to explore partnership.		

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Start Interacting with the Innovation Ecosystem: Examples of EdTech Companies

Examples of early (under $5M raised) and growth stage (about $50M+ raised) edTech companies

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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Start Interacting with the Innovation Ecosystem: Examples of EdTech Companies

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

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Start Interacting with the Innovation Ecosystem: Examples of EdTech Incubators and Accelerators

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, exposure 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 were the best fit for additional investment. Funded by a venture firm. Serves and invests in European and North American companies.
- TecLabs Startups (Monterrey, Mexico) — affiliated with Tecnológico de Monterrey, which strengthen its learning research; has programs for early and later stage companies.

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Start Interacting with the Innovation Ecosystem: Examples of EdTech Incubators and Accelerators

- 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.
- 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).
- XJTLU Learning Mall (Suzhou) — part of XJTLU University (partnership of Xi'an Jiaotong University and the University of Liverpool), with emphasis on R&D and products from XJTLU and its partners.
- 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 Africa.
- 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.

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Start Interacting 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.

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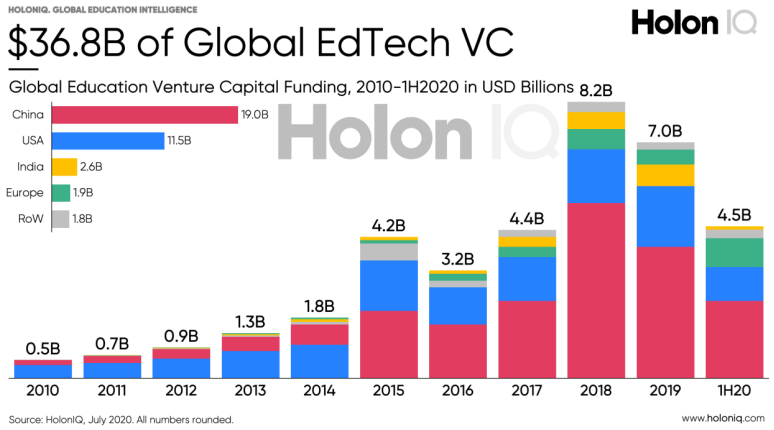
Start Interacting with the Innovation Ecosystem: Examples of Innovation-Oriented Investment Firms in EdTech

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 14x to $7B in 2019. Through COVID-19, the first half of 2020, EdTech attracted $4.5B of venture capital.[1]



Global EdTech venture capital is projected to triple over the next decade and Asia, Latin America, and Africa are growing rapidly.

Geographic Focus

- Kaizenvest (Singapore) — focus on emerging Asian markets
- Blue Elephant Capital (Beijing) — China's first edTech fund

Workforce Skills Focus

- Rethink Education (New York City) — focus on life skills and vulnerable learners
- Achieve Partners (New York City) — focus on skills gap and future of work
- Emerge Education (London) — invests in work-skills

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Sources: 1 HolonIQ 2020.

Start Interacting with the Innovation Ecosystem: Examples of Innovation-Oriented Investment Firms in EdTech

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 emphasis

Other

- Owl Ventures (Silicon Valley) — world's largest edTech VC fund
- Reach Capital (Silicon Valley) — emphasis on teachers and students
- Startup Chile (Santiago, Chile) — public startup accelerator with investments in edtech

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Start Interacting 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

- If you are part of a NRENS (National Research and Education Network) you may want to link with the system to help you get started.
    - Africa: three regional clusters of NRENS under AfricaConnect2 and 3.
    - Kenya: iLab and iBiz tech hubs are members of KENET (Kenya's NREN) which boosts relationships with universities, research institutes, and government.
    - Turkey: Turkish Academic Network and Information Centre (ULAKBIM) is a high speed network for universities & research institutions.
    - GÉANT: world's largest R&E network, formed for Europe's e-infrastructure.
- Navitas Ventures (Australia) evaluated the edtech environments of 20 countries.

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Cases: Insights from Around the World

Cases Based on Cities and Countries	Case Based on Ecosystem Actors
• Tech Innovation Ecosystems: Chile, China, Indonesia, USA[1] 20 Diverse Cities[2]) • Kenya has a great 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. http://ppra.go.ke/agpo/ • For the U.S., the creation of telecom technologies allowed for the use of distance education, but Integrated telecom systems and digital communications have been necessary for flexible remote learning (AECT, 2011)	• 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.

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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.

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Additional Resources

- World Bank EdTech & COVID-19 Resource Page
- 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.)
- World Bank's Rapid Response Guidance Note: Educational Television & COVID-19 (4 pages) along with a blog that summarises this guidance note (both using 40+ examples of countries using EduTV to response to school closures during COVID-19).
- World Bank EduTech Podcast

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- Jane Swift, LearnLaunch
- Joel Reyes, World Bank
- Berkin Ilhan Demirsoy, World Bank

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Contact Details

- Twitter: https://twitter.com/WBedutech
- Blogs: https://blogs.worldbank.org/edutech
- Website: https://www.worldbank.org/en/topic/edutech

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Annexes

SUPPLEMENTAL EDTECH COMPANIES

* Is growth stage company having raised about $50M

Africa

Brainshare (Kampala) - E-learning platform to support self-paced study for students as well as online teaching for educators or schools

Moringa (Nairobi) - Courses consisting of pathways that branch into either full stack development or mobile development

Ubungo (Dar es Salaam) - Localized edutainment for children

Unicaf (Larnaca, Cyprus) - Partners with universities in the UK, Europe and Africa to offer online, quality postsecondary degrees to eligible students in Africa

Zelda Learning (Cape Town) - Bursary management platform that helps organizations find and filter talented youth and fund their university studies

Asia

*BIJU'S (Bangalore) - Learning app for K-12 students and competitive exams

Everest Education (Ho Chi Minh City) - Tech-enabled personalized learning for students in Vietnam

Faria Systems (Taipei) - Transitions schools off paper and on to a curriculum-focused learning platform

*MPOWER Financing (Bangalore) - Cross-border digital lending platform to finance international students

*Toppr (Mumbai) - India's leading after-school learning app

*VIPKID (Beijing) - Connects children with teachers around the world for real-time online English immersion learning

Europe

*Amboss (Berlin) – Medtech knowledge platform

*Brainly (Krakow) - Platform allows kids, parents, tutors, teachers or experts ask and respond to questions using a points-based system

*EdAid (London) - Partners with universities and professional schools to defer student's tuition payments, interest-free

Freeed (Helsinki) - Free tool for teachers to share and find the best educational materials and ideas

*Kahoot! (Oslo) - Transforms presentations and training with engagement

*Labster (Copenhagen) - Virtual laboratory to teach science

Positive (Helsinki) - Documents the skills, talents and achievements in students so that they know where they excel

LAC

Apli (Mexico City) - On-demand jobs marketplace with end-to-end recruiting solution driven by machine learning to profile candidates, match workers to jobs, and assign backup workers

*Crehana (Lima) - Project-based learning platform for creative professionals in Latam and Spain

Lab4U (Santiago) - Technologies to use mobile devices as a science instrument, delivering low-cost solutions for science education

*Open Education (Bogota) - Offers online certificates in digital technology specializations

UBITS (Bogota) - Alternative corporate training programs with courses that are short and personalized

MENA

Bon Education (UAE) - Leverages HX design to develop innovative learning services for business

Cherpa Education (Beirut) - Interactive online platform offering tech courses to teenagers to prepare them for marketable skills

Edraak (Amman) - Free platform to access educational content on a variety of subjects

Nafham (Cairo) - Online platform providing school curriculum video lessons, life skills courses, and online tutoring services

Teacherly (Dubai) - Collaborative planning and peer-to-peer coaching platform with a focus on flexible teaching and interactive curriculum

U.S.

Amira Learning (SF) - First Intelligent Reading Assistant that listens, assesses & coaches,

*Dreambox (Bellevue, WA) - K-8 online math program that supplements core instruction

Imbellus (LA) - Gamified skills assessment

*Kenzie Academy (Indianapolis) - Online and on-campus school training software and UX engineers

Mursion (SF) - Virtual reality environment where professionals practice and master complex interpersonal skills

*Newsela (NYC) - Instructional content platform with integrated assessments and insights

Osmosis (Baltimore) - Personalized learning for clinicians

PenPal Schools (Austin) - Online platform that connects students from across the world through project-based learning

*Quizlet (SF) - Learning tools for students and teachers

TeachFX (Menlo Park) - Measures student talk, wait time, open-ended questions, academic language, and equitable participation in class

*ThinkCERCA (Chicago) - Personalized literacy platform that helps educators teach critical thinking skills through argumentative writing

Wonda VR (Brooklyn) – Remote teacher training, CZI funding

COMMON CHARACTERISTICS THAT DISTINGUISH INCUBATOR / ACCELERATOR PROGRAMS

- Program has a relationship with a university or foundation vs being independent
  - University-related: up-front credibility, sharing of costs, and access to expertise of faculty/staff (EduGrowth)
  - Independent: avoid time and money spent dealing with a bureaucracy and lack of restrictions on sponsorships (Emerge Education)
- Program charges participating companies a fee vs being a free program
  - Fee-based: cover some of program expenses (xEdu)
  - Free: greater choice of companies and more diverse entrepreneurs (USC Rossier EdVentures)
- Program requires equity from companies vs not requiring equity
  - Equity: compensates for some of work on companies and potential for a windfall return (EduSpaze)
  - No equity: startup edTech companies rarely achieve significant returns since customers are often public sector entities (USC Rossier EdVentures)
- Companies attend the program full-time and in-person (residency) vs participating virtually
  - Residency: entrepreneurs can focus more fully on the program and networking is enhanced (LearnLaunch)
  - Virtual: lower cost, applicants not limited by geography, and scheduling flexibility (USC Rossier EdVentures)
- Program curriculum is broad-based vs personalized
  - Broad-based: off-the-shelf, proven, and not labor-intensive (xEdu)
  - Personalized: advice should be more impactful and closer relationship developed between operators and entrepreneurs (LearnLaunch)

Sample Profiles

	EduSpaze (Singapore)	LearnLaunch (Boston)	xEdu (Helsinki)
Geographic Focus	South East Asia	Global (with focus on Massachusetts K-12)	Global
Company Focus	Early-stage companies	Early-stage companies	Early- and growth-stage companies
Program Features	• Singapore's first edtech accelerator with a focus on evidence-based pedagogy • **Funding:** Seed funding up to S$500 for small equity stake, based on valuation • **Capacity Development:** 100-day acceleration program, customized to each startup • **Networking:** Educators-in-Residence to help provide an educator's perspective	• **Funding:** milestone-based funding from two investment-focused programs • **Capacity Development:** investment-focused programs, personalized bootcamps for edtech companies across early ed, K-12, higher ed, and workforce • **Networking:** 1x1 venture partner & mentor support	• One of two oldest edtech accelerator in Europe • **Funding:** did minor investments early on but no longer. • **Capacity Development:** intense 3-month program of business models, coaching, events, co-creation with schools and other activities • **Networking:** mentoring, access to the xEdu alumni network
Supported by	Enterprise Singapore, Spaze Ventures	Private sponsors and philanthropies	Private sponsors and government
Website	www.eduspaze.com	https://learnlaunch.com/accelerator/	https://www.xedu.co

INCUBATORS / ACCELERATORS

- In the ecosystem of business incubators and accelerators, such entities serving edTech founders are comparatively recent. They are often operated with some relationship to nearby universities. Incubators and accelerators often form the backbone of an innovation hub for edTech.
- The vast majority of existing edTech innovation hubs in higher income markets were created with little or no public money. They were largely capitalized by universities (USC Rossier EdVentures), successful entrepreneurs (Imagine K12), edTech venture funds (Emerge Education), and non-profits with an edTech mission (LearnLaunch). The founding entrepreneurs and venture funds of these entities also regard this as an investment and expect the incubators-accelerators to produce a profit over time from the equity stake that they have taken in the participating companies.
- **Being as many of the perspective edTech innovation hubs, at least in lower income countries, may not have such able benefactors, the public sector may need to provide the seed capital (perhaps including office space) to establish the edTech innovation hub.** The public sector (and a university) may be prohibited from taking an equity stake in private companies with the goal of making a profit. Consequently, there is no need to require participating companies to provide an equity stake to the operators. International sources of capital from the entities mentioned above may be willing to capitalize an edTech innovation hub in your country, particularly if they have an existing connection.
- For information on the global network of business innovation hubs, consult the International Business Innovation Association website.

INCUBATORS / ACCELERATORS

- These entities commonly provide some or all of the following: broadband access, business plan pitch events, capital, customer introductions, entrepreneurship curriculum, IT equipment, legal services, mentor pool, presentation skills, supplies, web storage, and workshops. As people saw the value of technology incubators and accelerators, some governments (along with the private sector) began to support business incubator and accelerator programs to encourage entrepreneurial talent in their city or country and to catalyze regional or national economic development.
- The global experience with edTech innovation hubs is relatively recent – i.e., over the last twenty years – and they have characteristically been formed independently of one another, focused on the needs of a metro/regional market. As such, cooperation and communication among the hubs has been informal and infrequent. However, there is a nascent move by some of the hubs – in Helsinki, Los Angeles, and Singapore – to collaborate on best practices, communication among entrepreneurs, workshops, demo days, investment sources, etc.
- In the context of COVID-19, where we need more urgent solutions, there's an opportunity to expedite innovation by working collaboratively with existing incubators-accelerators across the globe, while creating such entities where they have not existed at the local, national, and regional level.
- The World Bank will be helping to organize that collaboration to assist with new innovation hubs in middle and lower income countries. Countries should consult with the Bank on connecting with this collaboration and joining it to short-circuit their learning path, while contributing their ongoing knowledge and linking their edTech entrepreneurs with others. In partnership with DFID, the World Bank recently formed the EdTech Hub, which reports on research and innovation in edTech so that entrepreneurial efforts and government interventions have a greater opportunity for success.

BUSINESS DECSIONS FOR INCUBATORS / ACCELERATORS

- School related vs independent
- Fee-based vs free
- Equity vs no equity
- Residency vs virtual
- Curriculum that is general vs personalized
- Education sector focus
- Efficacy emphasis
- Involvement of teachers & students
- Operational costs
- Application process procedures
- Evaluation of companies criteria
- Number of entrepreneurs
- Role of diversity (geographic, gender, ethnicity, age, experience, sector)
- Cooperation with Hubs outside of your country

INCUBATORS / ACCELERATORS

Costs to Building Community

- In higher income countries, the cost could range from about $100K to over $1M a year (see the attached budgets).
- If a program is virtual, affiliated with an entity (i.e., a university education school or foundation) which has sunk costs for IT and staff who can add value to a program, costs can be limited to an experienced operator's salary (about $100K/year).
- For an incubator accelerator that does not operate as leanly, cost will largely depend on the following factors:
  - Office space: Most incubator-accelerator programs have a residency requirement (weeks or months) for participating entrepreneurs to be immersed in opportunities for in-person networking and mentorship. As such, they will need office space that likely requires commitment to a multi-year lease plus utilities. Some programs also provide housing for entrepreneurs. Since most programs are held in larger cities this could be expensive. Such programs charge fees that could range from about $5K-20K/company to help offset the lease expenses.
  - Personnel and administration: If entrepreneurs pay fees for a program and are dedicated to their startup full-time, they will rightly expect commensurate services. This will require hiring several staff, particularly operators and program coordinators (for speakers, mentors and events). In addition, office supplies, equipment, and food should be available to entrepreneurs and guests. For fees at the lower end of the scale, entrepreneurs will be expected to be more self-directed. Part of these costs can be defrayed by partnering with a university or foundation.
  - Investment in companies: In many cases, acceptance into an accelerator program comes with initial investment funding of approximately $10K-150K/company. In return, companies are required to give up an equity stake (perhaps 3-10%). The more established multisector technology incubators-accelerators get some of this capital from venture funds in exchange for them having a "first look" at the companies. They also anticipate being able to cash-in on their equity, usually when a company is purchased or has an Initial Public Offering (IPO).

Refer to slide 39 for line item budget.

BUDGET[1]: EDTECH INCUBATOR / ACCELERATOR[2]

	Residential & Full Service Program	Virtual & University Program[2]
Salaries (& benefits)		
Executive Director	$180,000.00	$80,000.00
Business Manager	$120,000.00	
Marketing Manager	$96,000.00	
Client Services Coordinator	$72,000.00	
Receptionist & admin support	$48,000.00	
Business services (accounting, audit, taxes, etc.)	$10,000.00	
Food (catering)	$10,000.00	$10,000.00
Furnishings (capital)	$80,000.00	
Insurance	$10,000.00	
IT & telecom equipment (capital)	$50,000.00	
IT & telecom services (phone, internet, web hosting)	$10,000.00	
Janitorial & security services	$10,000.00	
Lease of office space (15,000 SF at $3/SF)	$360,000.00	
Legal services	$10,000.00	
Marketing	$10,000.00	$10,000.00
Office equipment (capital)	$20,000.00	
Office equipment (rental & services)	$10,000.00	
Office supplies	$5,000.00	
Travel	$5,000.00	$5,000.00
Utilities	$20,000.00	
TOTAL	**$1,136,000.00**	**$105,000.00**

[1] Annual budget including startup capital costs.

[2] Hub located in U.S. large metro area. Costs can be defrayed by charging for services.

[3] University supplies labor (including some portion of Executive Director's salary & benefits), as well as all equipment, space, services, and supplies.

UNIVERSITIES AND RESEARCH & DEVELOPMENT FACILITIES

If a relationship is sought with a university, the point of contacts will depend on whether the university is publicly or mainly private funded.

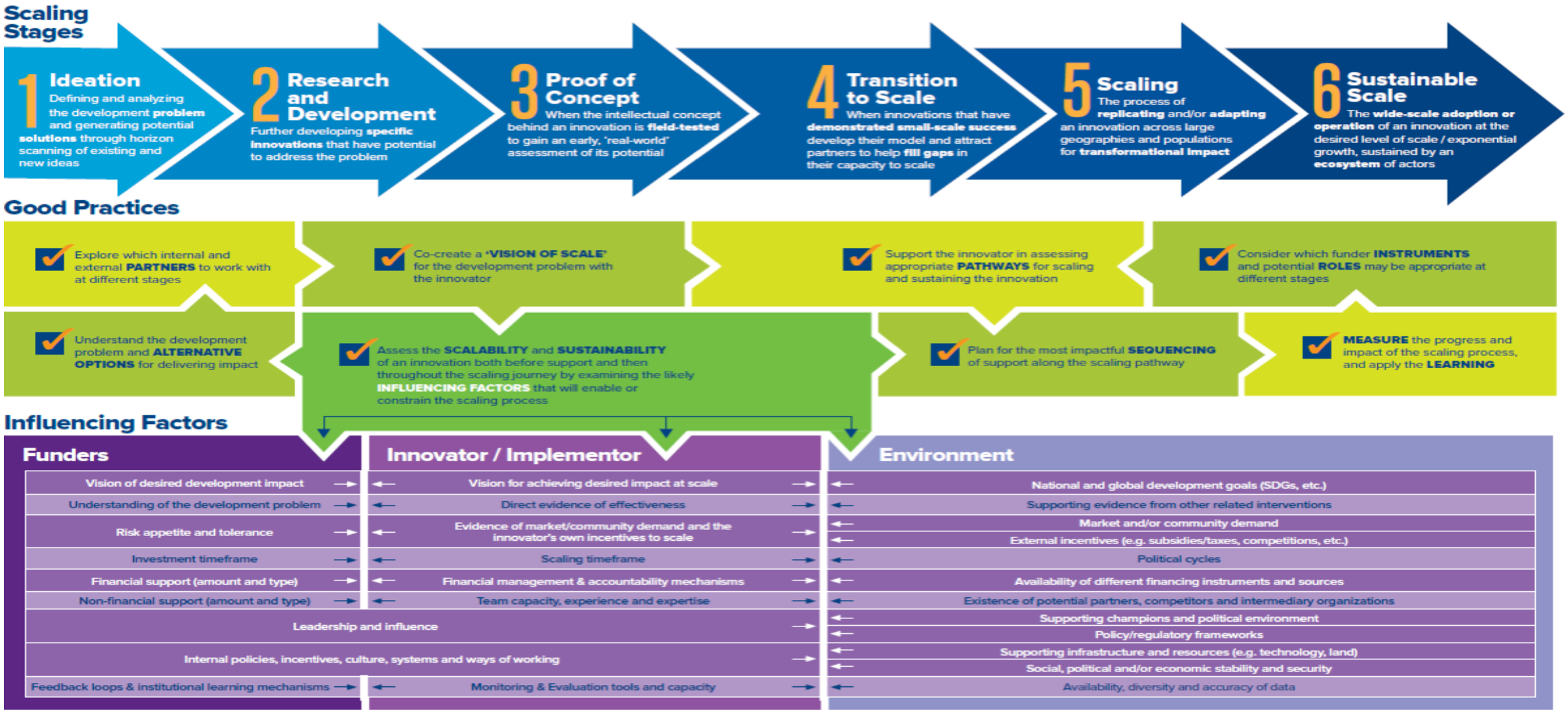
- If a public university, the initial points of contact may be the national governing body for public universities, the president of the university, and the head of the school of education, if there is one. If not, the schools of business and/or engineering could be approached.
- For a private university, the connections may best be taken through a trustee who shares your interest in edTech, the president or provost of the university, and the head of a faculty of education, business, or engineering (probably in that order).
- A research & development facility (often focused on technology) is typically controlled by a university and/or arm of government. If a university, see the point of contacts above. If an arm of government, one should contact the political and institutional operators of that entity.

INVESTORS

- In the initial phases of private sector investment in a country's edTech companies, the capital will typically come from angel investors (individuals as opposed to venture capital firms) in exchange for equity or debt that is convertible to equity. Such investors and accelerators also use a newer investment instrument: a SAFE, a simplified agreement to provide upfront capital in exchange for equity later when the share price is set by other investors.
- The stages of funding are: seed (to start a business), early (when company has made progress) , and growth (evidence of market demand is clear).
- Most of the world's large technology companies have education practices available to assist edTech incubators-accelerators with workshop speakers. To a lesser degree, they may provide sponsorships, mentors, and cloud storage credits (AWS, MS, Google).
- Government investment in venture capital funds has a mixed record (NBER, 2020; CAE, 2019; Strategic Change, 2019). Their goals are often not aligned. They also rarely have a presence in MICs/LICs. You can work with the World Bank to develop an edTech ecosystem to grow companies that will attract institutional investment, but it will take time.
- In the interim, ask for help to encourage and nurture angel investors. Also seek alliances with sources of blended capital like philanthropies and impact investors.
- There are other large technology funds and companies that invest in edTech, but not solely. A representative number of funds have indicated a willingness to help to build a global ecosystem, sharing their knowledge, and the characteristics of edTech companies that attract private investment. The World Bank can provide you with a list of edTech early-stage venture capital funds and angel investor groups.
- In the wake of COVID-19, tech companies Google and Facebook and investors Owl Ventures have created COVID-specific education support tools.

Scaling Innovation

A High-Level Architecture for Scaling Innovation



Insights on Scaling Innovation (IDIA, June 2017)

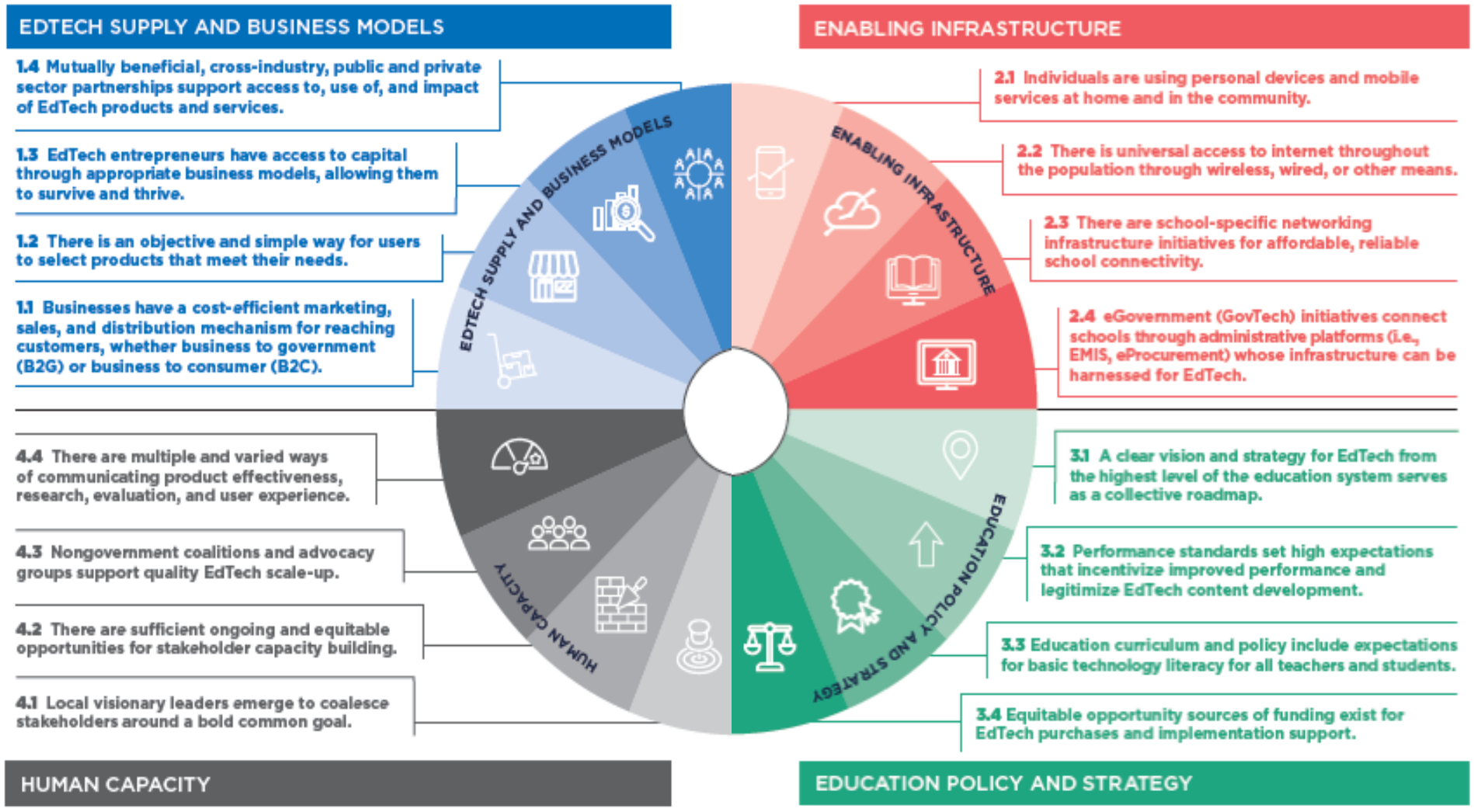
Scaling and Sustainability

Matrix of Factors Influencing Scaling and Sustainability

FUNDER	INNOVATOR / IMPLEMENTOR	ENVIRONMENT
Vision of desired development impact →	← Vision for achieving desired impact at scale →	← National and global development goals (SDGs, etc.)
Understanding of the development problem →	← Direct evidence of effectiveness →	← Supporting evidence from other related interventions
Risk appetite and tolerance →	← Evidence of market/community demand and the innovator's own incentives to scale →	← Market and/or community demand
		← External incentives (e.g. subsidies/taxes, competitions, etc.)
Investment timeframe →	← Scaling timeframe →	← Political cycles
Financial support (amount and type) →	← Financial management & accountability mechanisms →	← Availability of different financing instruments and sources
Non-financial support (amount and type) →	← Team capacity, experience and expertise →	← Existence of potential partners, competitors and intermediary organizations
Leadership and influence →		← Supporting champions and political environment
		← Policy/regulatory frameworks
Internal policies, incentives, culture, systems and ways of working →		← Supporting infrastructure and resources (e.g. technology, land)
		← Social, political and/or economic stability and security
Feedback loops & institutional learning mechanisms →	← Monitoring & Evaluation tools and capacity →	← Availability, diversity and accuracy of data

Insights on Scaling Innovation (IDIA, June 2017)

EdTech Ecosystem Model



Scaling Access and Impact (Omidyar, 2019)