Study on Public-Private Partnerships in Information and Communication Technology (ICT) for Education

(T8503-REG: Partnership in Innovation in Education in Asia and the Pacific)

Commonwealth of Learning

June 2015

Commonwealth of Learning

Researchers:

- Mr Neil Butcher
- Ms Sarah Hoosen
- Mr Vis Naidoo

Table of Contents

Chapter 1:   Introduction

Increasingly, countries across the globe are embracing a vision for development of Knowledge Societies and adopting policies and strategies to encourage this development. Education is of vital importance in the knowledge society, as a source of basic skills, as a foundation for development of new knowledge and innovation, and as an engine for socio-economic development. Education is, therefore, a critical requirement in creating knowledge societies that can stimulate development, economic growth, and prosperity. It is not only the means by which individuals become skilled participants in society and the economy, but is also a key driver expanding ICT usage.[1]

ICT use in education to build a knowledge society is not simply about teaching 'ICT literacy' – i.e. learning to operate the technology – but also about building higher-order skills, such as knowing and understanding what it means to live in a digitized and networked society and use digital technology in everyday life. This includes understanding how ICT applications and services function, as well as knowing where to search for certain information, how to process and evaluate information, and how to assess the reliability and trustworthiness of multiple sources of information (online and offline). It is especially important, when dealing with educational content, to be able to assess the quality and reliability of knowledge and to contextualize it effectively. In addition, there is a need for networking skills related to building, maintaining, and developing social interaction using ICT. Thus, effective education in a knowledge society must also deal with sharing information, knowledge, and other resources.[2] Critically, ICT is valuable only as a *means* to achieve genuine knowledge societies. The growth of ICT networks alone will not build a knowledge society.[3] Thus, ICT is a *facilitator* for major education reforms, but not a sufficient condition.

Seen within this context of social transitions towards a knowledge society, UNESCO outlines the following as broad reasons for growth in use of ICT within education systems:
- Development of knowledge-society attributes in students, including higher order thinking skills, lifelong learning habits, and the ability to think critically, communicate, and collaborate, as well as to access, evaluate, and synthesize information.
- Development of ICT skills and competencies in students, as preparation for operating in an ICT-rich workplace and society.
- Resolution of structural problems and deficits in education systems. This can include using ICT to enhance administrative and teaching efficiency, alleviate under-resourcing in specific areas (for example, a lack of textbooks or learning support materials), address equity issues through enabling equality of access to knowledge, resources and expertise, or support teachers who may be under-equipped to deal with new teaching challenges.[4]

The potential of ICT to tackle some of the challenges facing education has led many countries to invest heavily in ICT, placing it at the centre of their development strategies. ICT integration programmes benefit from a strong association with system-wide changes such as improved service delivery, curriculum

---

[1] UNESCO Asia and Pacific Regional Bureau for Education (2004) Guidebook 1 - ICTs in Education and Schoolnets. Retrieved from: http://www.unescobkk.org/fileadmin/user_upload/ict/e-books/SchoolNetKit/guidebook1.pdf

[2] Punie, Y., and Cabrera, M. (2005). The Future of ICT and Learning in the Knowledge Society - Report on a Joint DG JRC-DG EAC Workshop held in Seville, 20-21 October 2005. Seville: European Commission Directorate-General Joint Research Centre. Retrieved from http://ftp.jrc.es/EURdoc/eur22218en.pdf

[3] UNESCO. (2005). Towards Knowledge Societies. Paris: UNESCO. Retrieved from http://unesdoc.unesco.org/images/0014/001418/141843e.pdf

[4] UNESCO Asia and Pacific Regional Bureau for Education (2004) Guidebook 1 - ICTs in Education and Schoolnets. Retrieved from: http://www.unescobkk.org/fileadmin/user_upload/ict/e-books/SchoolNetKit/guidebook1.pdf

changes, or new quality assurance and production processes in business. In the formal education context, this may include moves towards decentralization, school-based management, and learner-centred philosophies.[5] However, developing countries generally face challenges in terms of capacity, capability, and resources (human and financial) to harness the potential of ICT successfully and effectively. They thus require sustained investments in education, innovation systems, infrastructure (including ICT itself), and implementation of policies that support such knowledge-based economic transformation in order to transform their economies.[6]

If done well, increased deployment of ICT can lead to greater digital opportunities, including economic and human development. Thus, ICT is regarded as a potent tool in reducing poverty, extending health services, expanding educational opportunities and generally improving the quality of life:

> *The leveraging of ICT to facilitate broader public goods including improved health care, literacy, civic responsiveness and equitable access to economic opportunity creates social capital essential for the full leveraging of economic development potential that can be achieved through the use of digital tools and telecommunications However, what is critical, is that ICT deployment be accompanied by simultaneous policies supporting equitable access to social institutions such as health care and education.[7]*

Policymakers face the challenge of creating conditions that support these developments in their countries, whilst also creating policies and programmes that harness their effects to support economic growth and the public good. The improvement of educational systems and increased educational attainment are seen as primary ways that countries can prepare for these global, technology-based changes. As highlighted earlier, ICT is seen as a way to promote educational change, improve the skills of learners, and prepare them for the global economy and the information society. Similarly ICT is seen as a way to improve government service delivery, while increasing the productivity and efficacy of the private sector. Consequently, the desire to be globally competitive, grow national economies, and improve social conditions is often used to justify public sector investments in educational and developmental improvement through the application of ICT.[8]

In Asia and the Pacific region, there are many examples of e-Education being identified as critical strategic imperatives for education systems. For example, New Zealand's *Enabling the 21st Century Learner: The e-Learning Action Plan for Schools 2006–2010* outlines the action plan to achieve ICT integration into the curriculum. This document specifies that ICT literacy is an essential skill in a 'time of rapid social, cultural, economic, technological, and global change. Without ICT Literacy, there is a risk that people will be cut off from job opportunities and unable to take part in the full life of the community'.[9] Australia's *National VET E-learning Strategy 2012–2015* aims to develop sector-wide capability in using the new technological environment will, to stimulate innovative approaches to increasing participation in training and work, and improve the skill levels of its citizens.[10] *Malaysia's Policy on ICT in Education* recognises the importance of ICT as critical enabler of a knowledge-based economy.[11] In South Korea, educational technology is part of

---

[5] UNESCO Asia and Pacific Regional Bureau for Education (2004) Guidebook 1 - ICTs in Education and Schoolnets. Retrieved from: http://www.unescobkk.org/fileadmin/user_upload/ict/e-books/SchoolNetKit/guidebook1.pdf

[6] GeSCI (2009) Building a Knowledge Society for All.

[7] Mitchell, M and Gillis, B. (no date). Making Sense of the Relationship between Information Communication Technologies and Economic Development. Retrieved from: http://dgss.wsu.edu/di/docs/MakingSenseoftheRelationshipbetweenICTandEconomicDevelopment.pdf

[8] Kozma, R.B. (2005). National Policies That Connect ICT-Based Education Reform To Economic And Social Development. *Human Technology - An Interdisciplinary Journal on Humans in ICT Environments*. Volume 1 (2), October 2005, pp.117-156

[9] New Zealand Ministry of Education. Enabling the 21st Century Learner: An e-learning Action Plan for schools – 2006 – 2010. Retrieved from: http://www.minedu.govt.nz/~/media/minedu/files/rtf/educationsectors/primaryandsecondary/overviewofictprogrammesforschools.rtf.

[10] Australian Government, Department of Industry, Innovation, Science, Research and Tertiary Education (2012). National VET E-learning Strategy 2012–2015. Retrieved from http://flexiblelearning.net.au/shared/docs/national_vet_elearning_strategy_2012_2015_web.pdf

[11] Ministry of Education Malaysia, Malaysia National ICT Initiative, and Frost&Sullivan. (2010). Policy on ICT in Education Malaysia. Retrieved from

its long-term vision of preparing its population for future labour markets and bridging gaps in access to quality education, with it being the first country in the world to replace traditional textbooks with digital textbooks.[12]

However, there are several well-documented challenges related to implementing ICT for education. These include the need for more focused attention on practical and operation issues at the policy level; providing adequate infrastructure; making connectivity, hardware, and software available; ensuring adequate funding and budgetary allocations; providing technical support; ensuring systematic management support and adequately trained teachers; and changing mindsets about using ICT for education. Specifically within South Asia, a study by InfoDev and PriceWaterhouseCoopers (2010) noted that, despite recognition of the potential of ICT to improve access to quality education, "the utilization of ICTs in school education in the South Asian countries is still not at a very advanced stage … while appreciation of ICTs is high in the South Asia region, their actual availability for utilization is low."[13] This calls for greater commitment and willingness to share innovative solutions from both governments and the private sector.

The idea of Public-Private Partnerships (PPPs) has generated growing interest from governments around the world as a possible mechanism for developing and sustaining public infrastructure and services. For example, PPPs were identified at the 2002 World Summit on Sustainable Development as significant tools for achieving global sustainable development.[14] Many governments are turning to the private sector for the financing, design, construction and operation of infrastructure projects. Initially limited to a few countries and infrastructure sectors, PPPs are emerging as an important procurement option for governments to close the infrastructure gap.[15]

Such findings provide an opportunity to explore PPPs in ICT for education. The Asian Development Bank (ADB) believes that, in the education sector, ICT for education is a development area that can provide increasing opportunities for the design and implementation of well-defined, structured and productive PPPs.[16] Traditional models of providing for education and training can no longer meet the demand, opening up opportunities for PPPs at both the national and transnational levels.[17]

It is within this context that the ADB commissioned a study on PPPs supporting ICT interventions in education. The results of the study are presented in this report.

---

http://www.mscmalaysia.my/sites/default/files/pdf/publications_references/Policy%20on%20ICT%20in%20Education%20Malaysia%202010.pdf

[12] Severin, E., and Capota, C. (2011). The Use of Technology in Education: Lessons from South Korea Inter-American Development Bank.

[13] InfoDev and PriceWaterhouseCoopers. (2010). Information and Communication Technology in Education in India and South Asia. Volume 1, Extended Summary. Retrieved from www.infodev.org/infodev-files/resource/InfodevDocuments_890.pdf

[14] United Nations. (2002). Report of the World Summit on Sustainable Development. Johannesburg, South Africa, 26 August–4 September 2002. Retrieved from www.un.org/jsummit/html/documents/summit_docs/131302_wssd_report_reissued.pdf

[15] Deloitte. (2006). Closing the Infrastructure Gap: The Role of Public-Private Partnerships. Retrieved from www.infrastructureaustralia.gov.au/publications/files/Closing_the_Infrastructure_Gap-The_role_of_PPPs_Deloitte_2006.pdf

[16] Asian Development Bank. (n.d.). ADB TA: Partnership for Innovation in in Education in Asia and the Pacific. Terms of Reference—Study on Public-Private Partnerships in ICT for Education. (See http://adb.org/projects/details?page=overview&proj_id=47211-001 .)

[17] Pillay, H., and Hearn, G. (2010). Public-Private Partnerships in ICT for Education. Digital Review of Asia-Pacific 2009-2010, pp. 77–87. Retrieved from www.digital-review.org/uploads/files/pdf/2009-2010/ppp_in_ict4e.pdf

1.1 Methodology

1.1.1 Research Objectives

The research had the following objectives:

1) Conduct a global literature review to identify key principles/attributes that characterise PPPs suited to the education sector, and especially for ICT adoption in education. In particular, note the various definitions of PPPs and their implications for risk and profit-making opportunities.
2) Identify and describe examples of PPPs currently established to support ICT adoption in the secondary education, technical and vocational education and training (TVET) and higher education subsectors.
3) Analyse and describe how identified key PPP principles/attributes are being applied to existing partnerships supporting ICT adoption.
4) Analyse and describe currently established and operational PPPs that support ICT services in the sector (for example, access to connectivity including Internet connectivity, development and supply of e-learning resources, maintenance and services agreements, capacity development of public sector staff and impact on end users).
5) Based on the case studies, analyse the potential value addition that may be achieved by the public education sector with the adoption of ICT in partnership with the private sector, how the value addition may have evolved over time and how it may be expected to evolve in the future.
6) Analyse and present issues of feasibility, enabling factors and scalability of PPPs in ICT for education in the three education subsectors in the context of developing countries in Asia and the Pacific.
7) Provide recommendations for improving the strategies and operational models of development partners, such as the ADB, in supporting developing countries in their efforts to pursue PPPs in ICT for education.

The main focus of the research was to conduct a detailed desktop review of available data. However, locating examples specifically relevant to Asia and the Pacific region proved challenging. Thus, additional data were gathered through telephone and Skype interviews. The data collection methods are outlined below.

1.1.2 Desktop Research

The desktop research was useful in preparing an understanding of PPPs. It began with searches for documentation to explain the concept of a PPP, and then focused on locating information pertaining to PPPs and ICT for education.

However, it did not reveal a clear picture of PPPs in ICT for education. Initial searches revealed few "proper" PPPs, while even the PPPs identified at the start of the process (and documented when preparing the draft framework for the study) did not fit in with definitions and understandings of what properly constitutes a PPP. Furthermore, it was evident that people had very different understandings of what a PPP entails, particularly with regards to ICT for education. Thus, the desktop research revealed limited meaningful data on the subject.

The researchers therefore made contact with colleagues and experts who work in ICT for education and have an understanding of ICT for education initiatives in the region. This network included contacts from

the World Bank, the ADB, UNESCO Bangkok and higher education institutions in the region. In total, 78 people were contacted to assist with the study, though unfortunately relatively few responded. The responses that were received revealed that few PPPs — new or existing — were available in the field, although all leads provided were pursued.

1.1.3 Telephone Interviews

Telephone and Skype interviews were conducted with members of identified organisations, companies and government institutions. Interviews were conducted between January and June 2015. Prior to each scheduled interview, interviewees received a list of questions that were used to guide the interview so that they could get a sense of the nature of the content sought. In total, 14 interviews were conducted. These were with:

- Microsoft (Malaysia)
- Microsoft (Indonesia)
- DataWind (India)
- National Skills Development Corporation (India)
- Talentsprint (India)
- Higher Education Commission (Pakistan)
- Intel (Indonesia)
- Ministry of Education (Philippines)
- Infrastructure, Leasing and Financial Service (IL&FS) (India)
- Dimagi (Myanmar)
- Virtual University of Pakistan (Pakistan)
- Oxford College of Information Technology (Private Sector Partner of Virtual University of Pakistan)
- Computer Connection Institute (Private Sector Partner of Virtual University of Pakistan)
- BlueSky (Samoa)

These interviews formed the basis of the case studies.

1.1.4 Case Studies

Case studies were pursued principally on the basis of recommendations from those working in the field, who had identified them as examples of PPPs. The following case studies were identified:

1) Microsoft Partners in Learning Programme (secondary education)
2) Intel Teach (secondary education)
3) India's National Skills Development Corporation (NSDC), for its involvement in the TVET sector
4) India's work with the Aakash tablet (higher education)
5) Gearing Up Internet Literacy and Access for Students (GILAS) Initiative in the Philippines (secondary education)
6) India's IL&FS (secondary education)
7) Virtual University of Pakistan (higher education)
8) Samoa's education network with BlueSky (secondary education)

It should be noted that not all interviews resulted in case studies, primarily in instances where the information yielded during the interview did suggest the presence of a possible PPP.

The case studies were based on interviews conducted with members of organisations involved in these projects, as well as additional project documentation provided by them and located through desktop research. Following preparation of the case study, each respondent was provided with a draft write-up of their case study and an opportunity to verify the information contained within.

1.1.5 Limitations of the Research

The identification and description of examples were based on available data and research. Unfortunately, there was a poor response rate from potential interviewees. Of the 78 people contacted, approximately half (46%) did not respond to email requests for information (despite repeated efforts to make contact in such instances). Further, 34% of the 40 people who did respond provided leads in terms of contacts and initiatives, all of which were followed up, but many of which linked to initiatives or activities that were manifestly not PPPs. In two instances, interviews were conducted but the responses did not reveal the presence of PPPs; a further 7% of all people contacted agreed to provide information or participate in an interview, but either did not attend the interview at the scheduled time or did not respond to further requests and reminders for information. Two respondents refused to participate in the research.

There were some identified PPPs such as a partnership involving assessments in Singapore and an institution offering TVET in India. However, efforts to contact such institutions and companies to confirm and understand the partnership were not successful. Thus, it is not possible to determine whether or not these were actually PPPs or are just being labelled as such for marketing or advocacy purposes.

The study was limited to English-speaking countries. Furthermore, there is a bias towards the secondary schooling sector as this was where most of the information was located. There is also a bias towards India, possibly because there appears to be strong support in that country for PPPs "as a mechanism that can introduce innovation and create models of quality within the government system."[18]

---

[18] Central Square Foundation. (2014). Public Private Partnerships for School Education: Learning and Insights for India. Working Paper. Retrieved from http://centralsquarefoundation.org/pdf/ppp_in_school_education.pdf

Chapter 2:   Defining the Attributes of a PPP

2.1 Introduction

As will become clear when reading the findings from the above research exercise, the term "PPP" is used very liberally in education to denote a wide range of different kinds of partnerships between the public and private sectors. This appears to be particularly the case in ICT for education, possibly because the private sector — and particularly large global companies such as Microsoft, Intel, Cisco, Apple and Google — has been very actively involved in education. There are many reasons for this, some of which involve corporate social investment (CSI) and many of which focus on building markets and seeing educational institutions as seminal sites in which future ICT consumers (that is, learners) develop their technology preferences and skills. Although many such collaborations are described as PPPs, relatively few of them are actually true public-private partnerships, based on globally accepted definitions of the term. Consequently, it is important to begin by setting out clearly what is understood by the term.

2.2 Understanding PPPs

2.2.1 Definitions

PPPs are typically legal agreements between government and private sector entities for the purpose of providing public infrastructure, community facilities and related services. It is important to note that, in a PPP, the partners typically share risk, reward and responsibility — for a shared investment.[1] The World Bank Group defines a PPP as a long-term contractual relationship:

> *A long-term contractual arrangement between a public entity or authority and a private entity for providing a public asset or service in which the private party bears significant risk and management responsibility.[2]*

PPPs are commonly used for the development of large-scale economic infrastructure (such as roads and railways), amenities (water, sanitation, refuse disposal and other utilities) or social infrastructure (schools, hospitals and sports facilities).[3] They can take the form of multi-stakeholder arrangements. Public partners in a PPP are typically government entities, such as ministries, departments, municipalities or state-owned enterprises. Private partners can be local or international, and may include businesses or investors with technical or financial expertise relevant to the project. PPPs may also include non-governmental organisations (NGOs) and/or community-based organisations (CBOs) that represent stakeholders directly affected by the project.[4]

---

[1] Akkawi, A. (2010). INSEAD PPP as a Policy Instrument. Ernst and Young. Retrieved from http://campuses.insead.edu/abu_dhabi/events/PPPPresentation29.11.10.pdf

[2] World Bank. (n.d.). Public Private Partnerships Overview. Retrieved from www.worldbank.org/en/topic/publicprivatepartnerships/overview#1

[3] Qiu, P. (2010). Can Public-Private Partnerships Deliver Better Public Services? *Ethos Perspectives*, Issue 4, 2010. Retrieved from https://www.cscollege.gov.sg/Knowledge/Pages/Can-Public-Private-Partnerships-Deliver-Better-Public-Services.aspx

[4] Asian Development Bank. (2008). Public-Private Partnership Handbook. Retrieved from www.adb.org/sites/default/files/institutional-document/31484/public-private-partnership.pdf

2.2.2 Types of PPPs

Given the wide-ranging definitions of PPPs, PPP types are therefore described and classified in many ways. One way is by distinguishing between institutional and contractual PPPs, a categorisation adopted by the European Union (EU). Contractual PPPs are more common, particularly in developing economies.[5] In a contractual PPP, the partnership is based exclusively on contractual links, whereas in an institutional PPP, there is cooperation between the public and private sectors within a distinct legal entity. The entity could be held jointly by the public partner and the private partner. The joint entity thus has the responsibility of ensuring the delivery of a work or service for the benefit of the public.

Both of these forms include delegated management of traditional public sector activities to the private sector. With contractual PPPs, the rights and obligations are regulated by an administrative contract or series of contracts, whereas in institutional PPPs, rights and responsibilities are guaranteed by the company's statutes and by the shareholder agreement between the public and private parties. There is thus contractual regulation in both of these forms.[6]

A plethora of different kinds of contractual PPPs exist, and new variations emerge continuously as each PPP contract responds to very precise needs. For example, the Confederation of British Industry (CBI) identifies three broad frameworks for group PPPs (design-build-finance-transfer, design-build-finance-maintain and design-build-finance-operate). They note that the extent of public-private partnerships can range from complete state control, ownership and delivery of all services to a fully privatised market.[7]

2.2.3 Key Attributes of PPPs

As noted, people have attempted to classify PPPs in numerous ways, and it is evident that there is difference of opinion and considerable confusion as to what constitutes a PPP. Although there is no universal consensus around the definition, it is possible to identify a set of core attributes that are common across international definitions. These attributes are as follows:

1) There is a contractual agreement between the government and the private party.
2) It is a long term agreement between government and the private sector (typically 10-30 years) under which the private company provides or contributes to a public service.
3) Contracts are for a fixed, finite term. At the end of this term, control of the assets, whether pre-existing or new, reverts to government ownership.
4) The private company must generally make an investment in the venture, even if it is limited, for example, to working capital.
5) It generates a revenue stream that allows the private party to fully recover its costs. This revenue stream may be from government budget allocations, user charges, or a combination of the two. The agreement therefore transfers risk from the government entity to the private company, including service availability or demand risk.

---

[5] Deloitte. (2010). Public Services Public-Private Partnerships: Working Together to Improve Public Infrastructure and Services. Retrieved from www.slideshare.net/james3b/public-private-partnerships-deloitte
[6] Marques, R.C. (2010). What Are the Different Types of PPP Arrangements? Body of Knowledge on Infrastructure Regulation. Retrieved from http://regulationbodyofknowledge.org/faq/private-public-partnerships-contracts-and-risks/what-are-the-different-types-of-ppp-arrangements
[7] CBI. Going Global.

6) Risk-transfer is key: risks generally borne by the public sector are transferred to the private partner. The allocation of sizable and at times significant elements of risk to the private partner is key in distinguishing a PPP from the more traditional public sector model of public service delivery.[8]

7) In addition to budget allocations, the government may make further contributions, such as providing or enabling access to land, contributing existing assets, or providing debt or equity finance to cover capital expenditures. The government may also provide various forms of guarantee that enable risk to be shared effectively between the government and the private company.[9]

These attributes can be used as a measure of the nature of initiatives labelled as PPPs in ICT for Education.

2.2.4 Benefits and Challenges of Engaging in PPPs

The benefits of engaging in PPPs are well documented in the literature. These can be summarised as follows:
- PPPs can be a more efficient and cost-effective way to deliver public services.[10]
- PPPs enable the public sector to harness private sector expertise and efficiencies for the delivery of certain facilities and services traditionally procured and delivered by the public sector.[11]
- PPPs can help improve public infrastructure and services through shorter delivery times, better value for money and increased innovation.[12]
- Theoretically, PPPs can be more cost-effective when compared to traditional outsourcing. Rather than services being contracted separately, the design and planning processes are integrated upfront in order to reap gains from economies of scale, reduce lifecycle costs and improve end-user design. There are usually strong incentives to ensure the project is completed on time and designed well to minimise operational costs, especially if the private partner has to finance, build and maintain a project over a long period.[13]

There are also several challenges in engaging in PPPs:
- PPPs can be quite complex and can have relatively inflexible structures.
- In multi-stakeholder arrangements, there can be delays inherent in decision-making and coordination between multiple partners.[14]
- The procurement and implementation may be lengthy and costly, making it unsuitable for some projects.[15]
- PPPs also place an additional responsibility on the public sector, which may need to serve as a regulator, and this may require a different set of proficiencies (such as managers skilled in negotiation,

---

[8] Deloitte. (2010). Public Services Public-Private Partnerships.

[9] Public Private Infrastructure Advisory Facility. (2012). PPP Basics and Principles of a PPP Framework. Retrieved from http://www.ppiaf.org/sites/ppiaf.org/files/documents/Note-One-PPP-Basics-and-Principles-of-a-PPP-Framework.pdf

[10] Qiu. Can Public-Private Partnerships Deliver Better Public Services?

[11] Wikipedia. Public-Private Partnership. Retrieved from http://en.wikipedia.org/wiki/Public–private_partnership

[12] Deloitte. (2010). Public Services Public-Private Partnerships.

[13] Qiu. Can Public-Private Partnerships Deliver Better Public Services?

[14] McKinsey and Company Social Sector Office. (2009). Public Private Partnerships: Harnessing the Private Sector's Unique Ability to Enhance Social Impact. Retrieved from http://mckinseyonsociety.com/downloads/reports/Global-Public-Health/Public_Private_Partnerships_Enhancing_Social_Impact.pdf

[15] Deloitte. (2010). Public Services Public-Private Partnerships.

contract management and risk analysis).[16] In some countries, this has resulted in the creation of dedicated PPP units; for example in the Philippines[17] and in Bangladesh.[18]

2.3 PPPs in Education

Education is, in general, largely provided and financed by governments, but the large demand for it, together with shrinking government budgets, means that — in many parts of the world — public-sector organisations develop partnerships with the private sector to meet educational needs.[19] The reasons for pursuing PPPs in education are usually related to increasing access to schooling, improving learning outcomes and improving the quality of education. PPP models in the education sector often serve to bring together the reach of the government system with the innovation of the private sector to improve the quality of the system as a whole. Models differ based on school ownership, infrastructure provider, type of teachers, extent of government funding, fee model and operating model. However, a common element among these models is that the government's role is usually that of a funder and regulator and the private sector's role is that of service provider.[20]

Latham (2009) identifies seven types of PPPs in education (Table 2). Each of these types exhibits different characteristics in their design and different aims for the partnership, as well as differences in the roles played by the respective public and private partners.

Table 1 Types of PPPs in Education[21]

Type of PPP	Description
Adopt-a-School programmes	Private sector partners supplement government funding of public schools with both cash and in-kind resources to improve "quality, access, infrastructure and community participation" in the government schools, especially the poorer ones. A facilitator coordinates communications between the school and the private sector partner. Examples of these programmes can be found in the Philippines and Sindh Province, Pakistan.
Private sector philanthropy	Private sector philanthropic initiatives essentially "increase the amount and effectiveness of corporate philanthropy to improve chances for poor children to gain access to a quality education." Although their general aim is to "create sustainable models for education reform in the developing world through PPPs," some have a more profit-making agenda than others.
Capacity-building programmes	With capacity-building initiatives, the private sector partner supports a public school not only by providing textbooks, teacher training and management help, but also being involved in curriculum development and quality assurance procedures.
Outsourcing of school management	In this case, a private provider has a contract with a public sector authority "to operate public schools or manage certain aspects of public school operations," but the school is still both publicly owned and publicly funded.

---

[16] Ibid.
[17] Public-Private Partnership Center, Republic of the Philippines: http://ppp.gov.ph
[18] Boye and Mannan. Bangladesh: Public-Private Partnership in Higher Education.
[19] Witters, Marom, and Steinert. The Role of Public-Private Partnerships in Driving Innovation.
[20] Central Square Foundation. (2014). Public Private Partnerships for School Education: Learning and Insights for India. Working Paper. Retrieved from http://centralsquarefoundation.org/pdf/ppp_in_school_education.pdf
[21] Adopted from Latham, Public Private Partnerships in Education.

Type of PPP	Description
Government purchasing programmes	These differ from the above in that "the government contracts with private schools to deliver education at public expense, often in the form of a subsidy per student enrolled in an accredited or eligible private school."
Voucher programmes	Vouchers are "essentially a certificate or entitlement for the parent to use to pay for the education of their children." They are a form of government funding and can be used to pay fees for both public and private schools.
School infrastructure partnerships	School infrastructure partnerships "involve the design, financing, constructing, and even operating of public school infrastructure under long-term contracts by private sector parties in partnership with the government," a similar concept to leasing. However, the government is responsible for providing the actual educational services.

These different types of PPPs illustrate that there are many different ways in which PPPs are understood and implemented. Indeed, using the attributes outlined in section 2.2.3, it is doubtful whether many of these types of relationships, when operationalized in practice, could properly be described as PPPs. Nevertheless, many examples of PPPs in education emerging in the literature point to school infrastructure partnerships.

2.3.1 School Infrastructure Partnerships

The most common type of PPP is where a government contracts a private sector organisation to provide education infrastructure, such as school buildings, where the facilities are built and maintained by the private sector. It works like a concession-type arrangement, based on the facilities only. The public sector partner provides the actual education services.[22] Examples of these include the New Schools private finance project in Australia, the Private Finance Initiative in the United Kingdom (which included education), Public Private Partnerships (P3) for Educational Infrastructure in Nova Scotia, Canada, and the Offenbach Schools Project in the county of Offenbach in Germany.

The private sector is participating in infrastructure development PPPs in various ways. While these arrangements differ, infrastructural PPPs have a number of common characteristics:

- The private partner invests in school infrastructure and provides related non-core services such as building maintenance.
- The government maintains responsibility for delivering core services such as teaching.
- The agreements between the government and the private partner are governed by long-term contracts, usually between 25 and 30 years. These contracts specify both the services that the private sector is required to deliver and the standards that need to be met.
- Service contracts are usually bundled, with private partners assuming several functions such as design, building, maintenance and employment of non-core staff.

---

[22] Asian Development Bank. (2014). Public–Private Partnerships in Urbanization in the People's Republic of China (2014). Retrieved from www.adb.org/sites/default/files/publication/42860/public-private-partnerships-urbanization-prc.pdf

- Payments under the contract are usually contingent upon the private operator delivering services to an agreed performance standard.[23]

In Asia, there have been several such school infrastructure projects. For example, in the Philippines, there are PPPs to build schools or classrooms whereby private companies submit bids. Successful bidders use their own funds to build the schools and are then paid by the government. The focus is on providing physical infrastructure, which includes desks, chairs and blackboards. ICT is not usually included in such projects.[24] [25] The Republic of Korea introduced a build-transfer-lease system for education in 2005. In an initiative modelled on the UK PFI, the private sector designs, builds and undertakes the maintenance of these schools for 20 years. The government makes availability payments to the private sector for 20 years, and the facilities constructed and financed by the private sector are ultimately transferred to the public sector. The public sector delivers education using the facilities that are built, managed and maintained by the private sector. It may be a public institution, but the building and the institute itself are managed by the private sector. This PPP is used in basic and secondary education and TVET.[26]

In these example, there is little evidence the ICT is included in any of the agreements, and in such PPPs this presents a lost opportunity for including ICT components.

2.3.2 PPPs in Higher Education

Kaneva and Untura (2104) list six different types of public-private partnerships in innovation activities of higher education institutions: 1) technology contracts; 2) technology transfer and licensing; 3) university-owned enterprises; 4) joint research centres; 5) independent universities; and 6) university science parks (technoparks). They describe each of the PPPs in the context of China.

Table 2   PPPs in Innovation in Higher Education Institutions[27]

Type of PPP	Description
Technology contracts	Technology contracts are arrangements between a university and a private company and can take the form of technology development (university employees work to solve a research task set by the company), provision of technical services, or technical consultancy. They are a major source of financing with funds from the private companies going into research and development activities of the universities. The money is spent on enhancing research capabilities of the universities and development of applied science research. Technology contracts also act as a mechanism for tacit knowledge transfer from science to industry.
Technology transfer and licensing	Technology transfer mechanism, as a form of PPP between universities and industry, can take three district forms: transfer of patents, patent licensing and non-patent technology transfer.
University-owned enterprises	There is no formal definition of a university-owned enterprise and the concept embraces all enterprises that are created and, in one way or another, controlled by universities.

---

[23] La Rocque, N. (2007). Contracting for the Delivery of Educational Services: A Typology and International Examples. New Zealand Business Roundtable. Retrieved from http://www.hks.harvard.edu/pepg/PDF/events/MPSPE/PEPG-05-07larocque.pdf

[24] Interview with Undersecretary of Education, Mario Deriquito, 16 February 2015.

[25] See http://ppp.gov.ph/?p=8204

[26] Asian Development Bank. Public–Private Partnerships in Urbanization in the People's Republic of China.

[27] See Kaneva, M., and Untura, G. (2014). The Knowledge Economy in China and Public-Private Partnerships of Universities. Retrieved from https://www.academia.edu/8697296/The_knowledge_economy_in_China_and_public-private_partnerships_of_universities

Type of PPP	Description
Joint research centres	Research centres founded by public universities, domestic industrial enterprises and multinational corporations. A major contribution of the Chinese universities to these research alliances is talented and highly qualified research personnel. Through collaboration with private companies, universities develop new ideas and the personnel acquire management skills. Recent graduates have opportunities to further advance their knowledge and practical skills by interning for the private firms. Creation and commercialisation of new technologies that take place within joint research centres further promote the knowledge economy.
Independent universities	Higher education institutions founded by state universities, with the attraction of financing from private companies. Independent colleges are financed by private companies but degrees are awarded by the state universities that act as parent institutions. Government established a focus for independent institutions: they had to concentrate on educational programmes of a practical character (polytechnic), while state universities could continue to concentrate on educational programmes in fundamental sciences. It was assumed that the development of independent colleges would promote accumulation of practical knowledge by students and that this practical knowledge would comply with the requirements of potential employees and the level of technological progress in China. Finally, the government aimed at using private sector entrepreneurial skills in the management of independent colleges.
University science parks (technoparks)	Physical places that support university-industry and government collaboration with the intent of creating high-technology economic development and advancing knowledge.

Analysis by Boye and Mannan (2014) note the various models for PPP in higher education and argue that 'PPP is rare in the true sense of the term'[28]. The table and models described do not really conform to definitions of PPP as noted in the key attributes (section 2.2.3).

2.3.3 Service Delivery PPPs in Education

PPPs have also been used for service delivery in education. In this model, the government has contracts with private operators to deliver teaching services or to manage public schools, TVET colleges, institutes and universities. The education service is usually provided by the private sector from a publicly owned facility, with the PPP in the form of a management contract. Payment to the private sector partner is often made on a per student basis or as a lump sum.[29] An example of this is Charter Schools in the United States, which are publicly funded schools that are privately operated. Charters are governed by state law and sanctioned by authorising bodies; the schools are managed independently and do not fall under state or district-level control. As they are public schools, they do not charge tuition fees, do not have special entrance requirements and are open to all students.[30] They receive between 60 per cent and 100 per cent of the operational funding granted to public schools on a per student basis. In return for that funding, the

---

[28] Ibid.
[29] Ibid.
[30] National Alliance for Public Charter Schools. (n.d.). What Are Public Charter Schools? Retrieved from www.publiccharters.org/get-the-facts/public-charter-schools

schools are directly accountable for meeting quality requirements.[31] These are specified in a contract, or "charter," that details the school's mission, programme, number of students served, performance goals and methods of assessment.[32] Contracts granted to schools are usually for between three and five years. Schools that do not meet required performance standards lose authority and the right to receive state funding until another school management company is found to take over the school. Some states provide buildings for charter schools. In other states, school operators fund schools through mortgages or local government capital grants.[33]

Another example of a service delivery PPP is the Penang Skills Development Centre in Malaysia, which provides a hybrid model of private management of a public institute. It is located within three industrial zones, and focuses on providing the skills needed within the zones. It is a partnership between academia, the private sector and the government. The government provided land and infrastructure, and regulates the facility. Most financing is provided by the private sector. More than 150,000 students have graduated and found employment within the industrial zones.[34]

2.3.4 Summary

Despite a growing prevalence of school infrastructure partnerships and service delivery PPPs, the research revealed no clear evidence of any of the list of services in ICT for education being included as a key requirement of the PPP contract entered into with the private sector. This seems a lost opportunity, as it should theoretically be relatively simple to include specific requirements in school ICT infrastructure PPPs that the private partner is expected to deliver key ICT for education services as part of its maintenance of the infrastructure of the school. Likewise, service delivery PPPs could reasonably easily include similar expectations regarding the service being delivered to students. Consequently, it may be important to understand the services required for ICT in Education to determine whether and how PPPs can be used to meet these needs.

2.4 Services Required in ICT for Education

In order to assess the prevalence and viability of PPPs in ICT for education, it is first necessary to be clear about what services can potentially be provided through a PPP. This can most readily be done by reflecting on the benefits that can be gained from judicious investments in ICT for education, as described in Chapter 1. Increasingly, there is a demand for the following core services in public education systems:

1) *Enhancing Logistics and Operations*

   a) Improving educational administration by providing effective ICT-based administrative and management information systems at an institutional level.
   b) Providing an integrated system that facilitates the collection of, and access to, regularly updated management information across the education system (for example, an educational management

---

[31] Central Square Foundation. (2014). Public Private Partnerships for School Education: Learning and Insights for India. Working Paper. Retrieved from http://centralsquarefoundation.org/pdf/ppp_in_school_education.pdf

[32] Uncommon Schools. (n.d.). Frequently Asked Questions about Public, Charter Schools. Retrieved from http://uncommonschools.org/faq-what-is-charter-school

[33] Ibid.

[34] Asian Development Bank. Public–Private Partnerships in Urbanization in the People's Republic of China.

information system or EMIS) that is stored in a central data warehouse and is shared online across all levels of the education system. This is important because:

    i) Countrywide access can create opportunities to positively impact systems' operational and support efficiencies, as well as to ensure the consistency of data collection countrywide; and

    ii) Immediate access from any geographical location or level to a single consistent reliable source of current and accurate educational management information generates business intelligence and facilitates improved educational decision support.

c) Providing fit-for-purpose, integrated online educational knowledge management systems that bring together knowledge about operational performance, best practices and lessons learned to assist administrators and educators in operational, tactical and strategic management, and facilitate enhanced decision-making.

d) Allowing members of the public to access, search and query up-to-date public aspects of statistical information online.

e) Providing communication systems that enable all strategic, management and administration communication in the education system — from and between the national, provincial, district and school/college levels — to take place electronically and facilitate effective communication up and down the system.

f) Providing every educator, school/college/university administrator and manager, and government official with direct and personal access to a fit-for-purpose communication infrastructure and system that includes access to all necessary functions and facilities of government transversal systems.

g) Deploying a fit-for-purpose, integrated educational human resource system, allowing for effective reporting, operational management and decision-making.

2) *Building Educators' Capacity to Teach Effectively*

a) Making available ICT-based administrative and curriculum tools (for lesson planning, assessment, record-keeping, etc.) that save time — rather than creating additional work — by clearly and quantifiably reducing the proportion of time spent by educators on non-teaching activities. Using ICT tools to reduce administrative workload should ideally contribute to rebuilding the status of educators as professionals.

b) Providing educators and administrators with access to online continuing professional development (CPD) systems that notify them about CPD opportunities in their areas, allow them to rate their CPD experiences, and enable them to access and manage their CPD portfolio.

c) Offering pre-service and continuing (in-service) professional development opportunities for educators/academics, school/college/university managers and administrators, and support personnel to enable them to harness ICT effectively to support high-quality teaching and learning.

d) Providing educators with the necessary ICT hardware, software and connectivity to be able to access repositories of digital information and other resources, re-use and adapt these resources (as part of their formal, assessed educational activities), and share their newly created or re-created resources electronically with other educators, as well as being able to create and/or join electronic networks and forums that function as communities of practice for education.

3) *Providing All Learners with Access to Quality Education*

a) Providing all learners in the education system with the tools necessary to fulfil the ICT-related requirements of a given curriculum (that is, those aspects of the curriculum that explicitly require

access to ICT devices, specialised software or Internet access in order to be able to meet stated learning requirements effectively).

b) Ensuring that all learners leave the education system as ethical, discerning and responsible users of information, in addition to being capable users of ICT.

c) Providing electronic access to comprehensive sets of educational resources, tools and information in relevant languages across all educational levels and learning areas/subjects for re-use and adaptation by learners and educators.

d) Providing learners with the necessary ICT hardware, software and connectivity to be able to:
   i) Access online repositories of digital knowledge and other resources, re-use and adapt these resources (as part of their formal, assessed educational activities), and share their newly created or re-created resources electronically with other learners.
   ii) Access online learning resources to support them in completing subjects in specialised areas of the curriculum, where local teachers/lecturers are not available to teach those subjects.
   iii) Communicate with peers and educators safely within and beyond the national education system.

Drawing from the above, one can identify the following as ICT for education services that might theoretically form the basis of a PPP (leaving aside, in the first instance, consideration of whether or not this makes financial and/or educational sense to both parties):

1) Provision of connectivity to the education sector to enable effective use of online educational services such as online forums to help teachers share lesson plans; social media to help students collaborate across classrooms; and web-based applications assist teachers in customizing the learning experience for each student to achieve greater learning outcomes.
2) Provision of online and offline ICT-based administrative and management information systems to educational institutions.
3) Provision of centrally managed, ICT-based transversal systems (such as EMIS, HR systems and/or financial management systems) that facilitate the collection of, and access to, management information across all levels of the education system.
4) Provision of fit-for-purpose online communication systems to all relevant personnel and learners.
5) Provision of ICT hardware and software to enable educators and administrators to use ICT-based, time-saving administrative and curriculum/educational tools.
6) Management of online professional development systems for educators and administrators.
7) Offering pre-service and continuing (in-service) professional development opportunities to educators, school/college/university managers and administrators, and support personnel that focus on effective use of ICT for education.
8) Launching and managing online communities of practice.
9) Providing ICT hardware and software to enable learners to fulfil the ICT-related requirements of the curriculum, as well as to become information literate and ICT-capable.
10) Providing learners with access to repositories of digital knowledge and other resources.
11) Making educational resources, tools and information electronically accessible for learners and educators to use and adapt.
12) Providing learners with access to online, distance learning courses to help them complete subjects, courses or programmes and to meet the growing demand for education.

There have been various approaches to PPPs in relation to ICT and education in order to deliver one or more of the above services. Examples of these are explored in the next chapter.

2.5 Conclusion

As this chapter has demonstrated, there is no standard universally accepted definition of the term "PPP." It often means different things to different people, which can make assessing and comparing international experience in such partnerships difficult. In education, the term is understood in myriad ways — and there is a lack of consensus as to what PPP covers. One probable result of this is that any relationship between the public and private sector is deemed by some to constitute a PPP. With this understanding in place, it is possible to turn now to exploring how PPPs have been implemented in the education sector, particularly in relation to ICT adoption and use, using the attributes identified for PPPS in this chapter as a checklist to determine whether or not they meet the requirements of such relationships.

Chapter 3:   PPPs and ICT Adoption in Education in Asia and the Pacific region

3.1 Introduction

As has been noted, ICT for education is increasingly promoted for its ability to enhance the quality of education, increase access to information and education services, and enable the implementation of new pedagogical approaches. However, resource constraints facing many governments mean that widespread investment in ICT for education is often not possible, especially in many developing countries.[1] The public and private sectors often share common goals around development issues, such as having educated and healthy citizens and expanding markets for sustainable growth, which opens opportunities for PPP-supported education and training, particularly in contexts where traditional models of education and training provision can no longer meet demand.[2]

This chapter explores examples of partnerships between the private and public sector in ICT for Education, in an effort to assess the extent to which there is meaningful evidences of true PPPs in this area. The case studies presented are examples of relationships that were labelled as PPPs by practitioners in the field, and were developed primarily through interviews. The examples are tested against the attributes of PPP to determine the validity of the claims. While every effort was made to collect detailed information on these case studies, this often proved difficult. Very few documents provide detailed descriptions of the nature of partnerships formed, and it proved difficult to secure as much detail about partnerships as was initially sought through telephone interviews.

3.2 School ICT Infrastructure Initiatives

School ICT infrastructure initiatives were most commonly seen in literature relating to India, which has various documented examples of PPPs in ICT for education. Many Indian states have launched ICT programmes in schools, and most of them have adopted the BOOT model, in which private vendors implement the programme by providing computer hardware, educational software, faculty for teaching teachers and students, and programme support. In return, the government makes periodic (monthly/quarterly) payments over the life of the BOOT period, which is usually 3-5 years. The BOOT model was recommended as an option for running schools by the Ministry of Human Resources and Development (MHRD) in a draft policy on PPPs in school education. In this model, the government pays the private party periodically, based on the number of students, and the private party is responsible for running the school.[3] For example, in the state of Karnataka, the government equipped 700 schools with ICT laboratories in 45 days via a partnership with the National Institute of Information Technology (NIIT), a private IT company. NIIT was contracted to equip and maintain the school computer laboratories and provide an instructor for technical training for students during school hours. In exchange, NIIT was given

---

[1] InfoDev and PriceWaterhouseCoopers. (2010). Information and Communication Technology in Education in India and South Asia. Volume 1, Extended Summary. Retrieved from www.infodev.org/infodev-files/resource/InfodevDocuments_890.pdf

[2] UNESCO Bangkok. (2013). Public-Private Partnerships in ICT for Education. Retrieved from www.unescobkk.org/education/ict/online-resources/databases/ict-in-education-database/item/article/public-private-partnerships-in-ict-for-education

[3] Gurumurthy, K. (n.d.). PPP Models in School Education: Learnings from "ICT Programs in Schools." Retrieved from www.itforchange.net/sites/default/files/ITfC/5_PPP_Models_in_IT_programs_in_schools%E2%80%93some_lessons_from_research.pdf

a five-year contract to provide the training and was allowed to use the facilities after school hours for delivery of its private training courses to the community. In other examples, the states of Andhra Pradesh, Rajasthan, Orissa, Uttar Pradesh, Bihar, Nagaland and Assam have adopted the BOOT model, whereby private partners are responsible for installing hardware and software and providing approved e-learning material and teacher training for a mutually agreed period.[4] Whilst these initiative claim to be PPPs, they appear to be more a form of contracted services and are of a short duration, typically a maximum of five years.

To understand this model better, an interview was held with a representative from Infrastructure Leasing & Financial Services Ltd (IL&FS), which has a social infrastructure arm that manages large-scale PPP programmes focused on education, skill development, health care and cluster development. One of the areas in which it is working with regards to education (and directly relevant to this study) is in school infrastructure and management.

3.2.1 IL&FS Education & Technology Services Limited in India

IL&FS Education & Technology Services uses educational technology to enhance outreach and improve the quality of education. The School Infrastructure and Management Services (SIMS) practice provides concept-to-commissioning services for the establishment or upgrading of schools, and operation and management of schools using PPPs. This opportunity is driven by both the government and the private sector focus on education. IL&FS Education has two approaches:

- Operator Model: It builds, owns, operates and manages schools in partnership with the government and the private sector.
- Service Model: It offers project management consultancy services for greenfield/brownfield school projects for government and concept-to-commissioning services for the establishment of schools for the private sector.[5]

IL&FS Education manages ICT for education in 17,000 schools across India and partners with government states in providing ICT infrastructure to schools. In 2004, the MHRD launched a scheme called ICT in Schools, which was subsequently revised in 2010. Essentially, the objective of this scheme was to provide opportunities to secondary-level students to build their capacity in ICT skills via IT education and computer-aided learning. The broader focus was to bridge the digital divide across socio-economic and social barriers. The Ministry funds 75 per cent of this scheme, but the scheme is executed at the state level. Thus, in 2004, state governments released tenders that invited proposals from private partners to implement the scheme using the BOOT model. Initially, the focus was on the procurement of hardware and provision of services as separate tenders, but this model failed, and thus the government requirement of private partners changed.

IL&FS Education became actively involved in the scheme in 2010. As a private partner, its purpose is to enhance the educational level of students and increase educators' effectiveness. It is required to invest capital in hardware and services, set up computer laboratories in schools, provide highly qualified teachers, provide multimedia content, train teachers on using this content and on managing the laboratory, and conduct overall project monitoring and management.

[4] InfoDev and PriceWaterhouseCoopers. (2010). Information and Communication Technology in Education in India and South Asia.
[5] IL&FS. (n.d.) Education, School Infrastructure and Management. Retrieved from
www.ilfseducation.com/educationservices/schoolinframanagement

The first IL&FS Education mandate was for 244 schools in the state of Bihar. Once assured that the approach in Bihar was successful, it then actively pursued similar projects in other provinces. IL&FS Education's involvement has included:

- 5,180 schools in Gujarat;
- 4,150 schools in Maharashtra;
- 329 schools in Bihar;
- 1,600 schools in West Bengal;
- 740 schools in Rajasthan; and
- 3,409 schools in Odisha.[6]

In 2015, IL&FS Education received a mandate to work with 1,525 schools in the state of Himachal-Pradesh.

Essentially, the models in all states are quite similar (and usually clearly laid out in the tender documents). The mandate usually involves:

- Mobilising capital. This is done through loans and borrowing from internal/external funding sources and financial institutions. Occasionally, extended credit terms with selected vendors are also used to help with the initial capital investment.
- Setting up the required infrastructure in terms of procuring hardware and setting up the laboratories. This includes the provision of two to 12 computers, a printer, power backup (UPS or generator), connectivity, installing the required software applications and setting up shared access via cloud computing. The equipment provided is usually the latest technology.
- Conducting a baseline survey to establish the infrastructure availability and education levels of students in order to understand their needs. The approach is then tailored to the schools in each state. Thus, every state has a different strategy because the learning levels of the students are different.
- Conducting annual student examinations to assess whether the intervention is appropriate and effective. This is done by the private company or the province (and depends on the province).
- Recruiting teachers. This is an intensive process, with IL&FS using a team of people to go into the provinces to identify suitably qualified people. Potential teachers then undergo multiple levels of screening to assess their suitability for the programme. Different states would have different requirements regarding the qualifications and experience of teachers. In general, the screening of teachers includes a written examination, a group discussion, a technical interview and a personal interview. Those selected then undergo a rigorous ten-day training workshop. Those who perform best in the training and screening/assessment process are then offered a job. These teachers then go to the identified schools to teach. IL&FS pays the teachers' salaries.
- Producing multimedia content. IL&FS Education has an in-house team that designs the content in accordance with the state's requirements. The state teachers approve the content, which is then installed in the laboratories.
- Training of schoolteachers by IL&FS teachers at the school to manage the laboratory.
- Conducting regular monitoring and assessments. This includes a midterm survey to assess progress and an annual impact assessment. Reports are generated and provided to government. During the interview, it was noted that "government appreciates the quality standards we maintain."[7]

---

[6] Interview with Chief Operating Officer, IL&FS Education and Technology Services Limited, 12 February 2015.
[7] Ibid.

Each project usually lasts between three and five years, with the time frame being stipulated in the tender documents.

Understanding the Partnership

Essentially, the aim of the partnership is to design and establish a sustainable ICT infrastructure at schools. The nature of the partnership is described as one of "mutual dependence." The government is responsible for providing basic infrastructure in the form of the physical school and external support in the form of the school principal, teachers and state education systems, as well as reimbursing the private partners when they achieve their milestones. In turn, the private partner is responsible for raising the initial capital, creating the necessary ICT infrastructure, deploying ICT teaching staff, conducting assessments with students to ensure their understanding of coursework, monitoring and supervising teachers, monitoring the project and submitting reports to the relevant stakeholders.

The PPP was established via a tender process, which involved substantial negotiation around pricing. Generally, the scope and objectives of the work to be completed are clearly outlined, and private partners are usually evaluated or measured based on whether or not the objectives are met.

The private sector carries most of the risk, and the risks are high. Private partners need to provide a huge initial capital investment, and the return period is usually three to five years, more often five. This can result in projects becoming non-viable, especially if there are payment delays.

> *The payment delays are very frequent. At times the government delays the payment release, which leads to very high interest costs. So we need a lot of upfront capital to execute the project.[8]*

The private partner is paid once it achieves the defined targets. Private partners have capital and operating expenses, and a major portion of the project costs is interest payments. Furthermore, the return on investment is affected by many variables, including the performance of field teams and the outcomes achieved. The stability of a region can affect the outcomes; when a region is unstable, the private partner may not have access to the schools.

The technical infrastructure also constitutes a significant risk. There is a risk that the technology will become obsolete. The costs are very high if the technology needs to be replaced after three or four years. The scope of the technology provided is usually defined in the tender documents, and private partners need to ensure that it will last for at least five to seven years. Private partners need to ensure that all equipment is functional when the centre is handed over at the end of the tender period. Another risk is that hardware can be vulnerable to theft, which creates much inconvenience.

Government risk usually revolves around the choice of partner. Its mandate is to provide education to the citizens of India, and, if private partners do not deliver, this affects the government's reputation. Governments may face much criticism if they choose a private partner who is unable to deliver according to their requirements. Thus, the risk for the government involves how to justify its selection of a private partner.

The government benefits from the services of the laboratories. Thus, the laboratories need to function in order to get paid. The assessment of risk is factored into the costing model, and the project requires rigorous monitoring to ensure that deliverables are met.

---

[8] Ibid.

Monitoring

Every project has multiple tiers of monitoring. IL&FS conducts its own monitoring and sets up a call centre for each project. It monitors whether teachers arrive at school on time and what they are teaching, for example. It also arranges regular meetings with government, and updates them on progress via monthly and quarterly reports that are endorsed by the head of the institution (the principal). IL&FS also conducts the baseline evaluation and a midterm evaluation, which is done in-house. Additionally, the project is monitored externally via an independent third party, which also audits the project. Furthermore, the government, via public education sector staff checks on the schools and validate the work being done.

Sustainability and the Exit Strategy

The sustainability plan is developed at the beginning of the project and outlines the skill set that teachers need to have by the end of the project. Sustainability of the projects is ensured by training teachers and stakeholders, with training being part of the scope of the project. Additionally, it is a stated requirement that the infrastructure be in good working condition at the time of the handover from IL&FS to ensure that the project continues.

The exit strategy is defined at the start of the project. A plan is articulated around what will happen at the end of the three- or five-year term. Usually, this involves assets being transferred to the institution and ownership transferred to the school. This is in line with one key attribute of a PPP, which involves transfer of assets to the public sector on conclusion of the contract, but the timeframe for this contract is unusually short for a PPP. This illustrates the challenge of establishing PPPs around ICT infrastructure, given the speed with which such infrastructure becomes obsolescent.

Successes and Challenges

One of the notable successes of the IL&FS Education projects according to the IL&FS representative interviewed, is that the learning outcomes are achieved. Another notable success is that quality standards are maintained. An independent third party usually assesses the quality, and quality assessment is typically tendered out separately by the government. The assessments are regular: "the timely feedback gets us on our toes, so we can change our strategy [if we need to do so]."[9] A further success is the timely execution of the project. One of the primary reasons why the government seeks private partnerships is that private partners can deliver according to the timelines. This achievement can be attributed to regular monitoring. While the successes noted were many, the research did not locate other evidence to corroborate the IL&FS' claims that their projects were successful.

However, the private partners also face challenges. As noted above, payment from the central government can be delayed, for example. A related challenge is that there is a long "break even" point, so private partners need to be patient when waiting to see the results of their investment. Deadlines are strictly enforced: the government penalises the private partner if it fails to deliver on time. Additionally, private partners face the challenge of raising capital and finding the right local people to carry out the work.

A further difficulty is that government officials and public servants are often transferred, and thus there is a periodic need to brief new government officials working with the project. To address this, IL&FS strives to keep government continuously informed via regular reports.

---

[9] Ibid.

As a very large company, IL&FS Education experiences human resource management challenges.

> *We have 11,000 people on our roll for 17,000 schools, so managing this amount of manpower is also difficult. Even if you have to do an assessment of manpower, the number is huge.[10]*

To resolve this difficulty, it has a multi-tier arrangement of field-peer monitoring, structured at the state and district levels to ensure that every person working on the project in the field is monitored. It also holds regular training programmes for in-house staff to enhance staff retention.

Analysing the attributes of the relationship

Based on the description of the partnership, the following table summarises whether this partnership meets the requirements of a PPP based on its key attributes:

Attribute	Presence
Contractual agreement	Yes, with specific details of required deliverables outlined in tender documents.
Long term agreement	No, this is a short term agreement of 3-5 years.
Fixed, finite contract, at the end of which asset control reverts to government	Yes, the contracts are for a fixed period, after which all assets belong to the school.
Private company investment in the venture	Yes, the private company raises initial capital, purchases the requisite infrastructure and employs ICT teachers.
Revenue generated to recover private party costs	No revenue stream is generated. Private party is paid by government based on deliverables achieved.
Risks borne by the public sector are transferred to the private partner	Yes, but the risks are transferred for the three-year duration only.
Government provides further contributions to cover capital expenditures and guarantee to allow effective sharing of risk	No evidence of further government contributions.

Given this analysis, there appears to be little significant difference between this partnership and a contracted service, despite it being implemented using a BOOT model (using PPP terminology).

3.2.2 BlueSky, Samoa

Bluesky is Samoa's largest and oldest telecommunications company, which operates full services including traditional fibre and copper access services, Asymmetric digital subscriber line (ADSL), Internet services, Mobile voice and landline voice. BlueSky responded to a request for proposal (RFP) to a communications tender, which involved providing tele-communication infrastructure to approximately 40 schools in Samoa. This tender formed part of the Samoa SchoolNet and Community Access Project, which is a project funded under a grant from the ADB, and is implemented by the Ministry of Education, Sports and Culture (MESC).

The tender is for a three year period, and began in 2014. It involved designing, building and operating a network that links each school to the MESC. It is an Internet Protocol (IP) based network and is isolated

---

[10] Ibid.

from any other communication network. There is no Internet component; its exclusive function is to link schools back to the MESC. The MESC then provides the firewall and gateway to the Internet through its server. The network was completed in the second quarter of 2014 and has been operational for a year. Rollout of the infrastructure began in June 2014 and took approximately 10 weeks.

Understanding the Partnership

For this project, Bluesky provided the design, buildout and owns and operates the network for the duration of the project including responsibility for repair and replacement of defective materials and equipment. The MESC receives a fully operational country wide managed data service designed to meet their needs and operates at a significantly lower cost than would occur in normal business practice.

BlueSky consider this partnership a PPP as the costing for this project is significantly lower (half or three times less) than it would have been if approached from a purely commercial point of view. Its approach when responding to the bid was to provide the infrastructure using its 60 towers/backhaul access points that cover the whole of Samoa. BlueSky thus provided the underlying network infrastructure using its existing fibre/microwave country-wide access network. At the backhaul layer, Bluesky provides the Ministry with up to 40Mbps of private national data capacity for its exclusive use. Built on top of this layer is a totally private school network, with equipment procured by the ADB for the schools' exclusive use. For about 50% of the schools (mostly the urban area) where modern infrastructure is in place, Bluesky assisted with direct last-mile access technology. For more rural areas, where high speed infrastructure is not present, ADB procured the last-mile access technology that links each school to BlueSky's closest backhaul access point. Essentially, it provided a connection between the schools and closest tower/backhaul access point. The MESC uses a router to control Internet access into each school independently.

The MESC and ADB's role was to pay for all the equipment and installation costs:

> *We charged them all the one time and hardware fees upfront as one time costs… They paid for half the network – the only part we paid for is the core access network… They divested the assets in favour of us. All we are charging in small monthly fee to keep the network operational.*[11]

Approximately 60% of the costs were paid upfront by the ADB to cover the costs of the equipment. During the three year period, BlueSky is paid an operational maintenance cost for the support and operation of the network. Thus, the ADB absorbed the risk by procuring the educational components of the network. At the end of the three year period, BlueSky will own all the modems and wireless antenna linking schools to towers (and towers to MESC), but all the equipment inside the school is owned by the school.

According the BlueSky representative, this approach is unique as is it not the norm to "ever transplant someone's network on top of your one…(where) I will own part of network and you own part of the network". He indicated that the reason this scenario works in Samoa is because the MESC and ADB paid for the network and ceded the overall management and operation of the network to BlueSky.

In terms of risk, BlueSky has taken a long term view, acknowledging that it will not make money from the first three years of the partnership. However, it hopes that the MESC will continue its relationship with BlueSky after that, under cheaper financial terms. Additionally it takes the view that being involved in such an initiative is likely to result in a better educated population that will end up using more technology

---

[11] Interview with Representative from Blue Sky, 10 June 2015.

services. BlueSky also regards its involvement as a philanthropic one to improve communication services in Samoa.

Government also takes risk as BlueSky could build technology that does not work. Additionally, the government's assets are located on BlueSky's poles, and the government is reliant on BlueSky to provide reliable network on commercial grade.

> *They have given us substantial amount of assets in dollar terms and also made BlueSky the sole provider of educational technology.* [12]

If schools fail to connect to the MESC, there are requirements in place around the timeframe for them to be reconnected, and delays result in financial penalties.

BlueSky noted that it was not concerned about financial risk, as the ADB was underwriting the project. The company was thus certain that it would get paid. However, it is unsure whether the character of the network will change over time. For example, the MESC is considering using video conferencing based services between schools and the MESC, and this changes the characteristics of data movement. However, BlueSky has guaranteed that it will provide this service as it risk its reputation if it does not do so. Another risk facing BlueSky is the rugged environment in Samoa, with regular cyclones, heavy rains, and big windstorms. There is thus no guarantee that networks will last the three years. However, if the infrastructure is destroyed within that period, BlueSky guarantees that it will rebuild it at no extra cost.

Monitoring

The project is monitored by an independent network manager who works part-time and whose salary is paid for by the ADB. His role is to cover the ongoing development of the elearning project and to provide technical oversight. Thus, when schools experience difficulties, he evaluates the problem and contacts BlueSky to resolve the issue.

Sustainability and Exit Strategy

There is no defined exit strategy, but BlueSky is hopeful that, with time, the MESC will extend the relationship after the maintenance contract ends in 2017. There are also no formal sustainability plans. However, the BlueSky representative noted that, as BlueSky is always upgrading its network services, the MESC will get 'natural improvement at no extra cost'. This is based on the assumption that technology lifespan is typically three to four years, and servers, routers and fibre connectors are replaced on this basis. BlueSky thus anticipates that the quality of its service to the MESC will improve for either no or a modest cost.

Successes and Challenges

BlueSky describes the main success of their partnership as having a good relationship with the MESC, as it is reactive to government needs and the MESC is responsive to their requests. The MESC includes BlueSky in education activities where it can gain a better understanding of developments in education and is sometimes afforded the opportunity to contribute. The BlueSky representative notes that it is looking at the long-term return, which will not be from education, but from the children who will be part of the future workforce.

---

[12] Interview with Representative from Blue Sky, 10 June 2015.

Perhaps their primary challenge is that the government is building a national countrywide broadband network that the MESC may decide to use in the future. However, BlueSky hopes that that the MESC will consider it favourably, particularly as they have jointly built and operate a high speed educational network that functions at a minimal cost, while simultaneously operating at a commercial grade. The network is reportedly reliable and has scalability built in that can continue to provide capacity expansion needs well into the future.

Analysing the attributes of the relationship

Based on the description of the partnership, the following table summarises whether this partnership meets the requirements of a PPP based on its key attributes:

Attribute	Presence
Contractual agreement	Yes, but this appears to be a procurement and maintenance contract.
Long term agreement	No, the agreement is of a short duration of three years.
Fixed, finite contract, at the end of which asset control reverts to government	No, there is no intention to transfer technology to government. Control of assets within the school remain with the school, and control of assets outside the school reverts to the private company.
Private company investment in the venture	No investment has been made by the private partner. Pre-existing infrastructure was used and new infrastructure was paid for by the ADB.
Revenue generated to recover private party costs	No revenue stream is generated. Operational maintenance costs are paid for support and maintenance of the network. Penalties are deducted for non-or late performance.
Risks borne by the public sector are transferred to the private partner	Yes, but the risks are transferred for the three year duration period only.
Government provides further contributions to cover capital expenditures and guarantee to allow effective sharing of risk	Yes, government and ADB covered the cost of equipment.

From the description of the partnership, it is apparent that there is little evidence of this partnership being a PPP as there is a short term contract with no private party investment, no revenue stream generated, and little risk transferred to the private sector.

3.3 Expanding Access to Higher Education: The Case of the Virtual University of Pakistan

The Virtual University (VU) is Pakistan's first university to offer online, distance education thanks to ICT. It was established by the government as a public sector, not-for-profit institution with a clear mission: to provide extremely affordable world-class education to aspiring students all over the country.

> *Using free-to-air satellite television broadcasts and the Internet, the Virtual University allows students to follow its rigorous programs regardless of their physical locations. It thus aims at alleviating the lack of capacity in the existing universities while simultaneously tackling the acute shortage of qualified professors in the country. By identifying the top Professors of the country, regardless of their institutional affiliations, and requesting them to develop and deliver hand-*

crafted courses, the Virtual University aims at providing the very best courses to not only its own students but also to students of all other universities in the country.[13]

Its degrees are recognised and accepted, both all over the country and internationally. VU started in 2002 with a presence in 18 cities, and since then it has reached over 100 cities in Pakistan, with more than 190 associated institutions providing infrastructure support to the students. It has also enrolled Pakistani students residing in other countries.[14]

When the university first started, top academics from all universities in Pakistan were invited to participate, and, as it was a government initiative, many academics contributed by creating course videos. Lectures are video-recorded and broadcast over free-to-air television, as well as being made available in the form of multimedia CDs. They may also be offered as streaming media from VU's servers. In addition to the prescribed texts, comprehensive reading material and lecture notes in the form of Web-enabled content are provided through a learning management system (LMS) hosted on VU's servers and accessible over the Internet. The LMS provides an email facility for students, as well as discussion boards for interaction within the VU community. The LMS is also used for submitting assignments and conducting pop quizzes and practice tests. Midterm and final examinations are conducted every semester in a formal proctored environment at designated examination centres across the country. Invigilators appointed by the university supervise the examinations.[15]

The model allows students to study from their homes if they have computers and an Internet connection, and approximately 50 per cent of students are professionals who study from home. Students who are younger and have just graduated from school usually register to study onsite at a traditional campus.

When VU was established, a need for campuses across Pakistan was identified. The aim of these campuses is to provide a facility where students can access content and materials, and to provide a social experience that is otherwise lacking in distance education. Essentially, the need was for computer laboratories with Internet connections. This was at a time when broadband outreach was not very good in the country, and the laboratories provided a place where students could study.

Understanding the Partnerships

Of the network of nearly 200 campuses across Pakistan, only 30 are owned and operated by the university, with the remainder being owned and run by private partners. The broad aim for the private partners is to be "ambassadors" and to provide campuses where VU cannot establish campuses of its own:[16]

Some partners have grown, some are single mode campuses only affiliated with VU and have 300-400 computers, with over 1,000 students registered. These are about two or three. The majority [of campuses] are smaller, with 30–50 computers and a few hundred students.[17]

Private partners set up campuses according to VU's specifications, which are outlined in detail on the university's website. When VU decides to target a new area in Pakistan, it will advertise and invite potential partners to apply to become a partner campus. The approach is demand-driven, which makes it attractive to private investors. A committee at VU then meets to consider applications based on issues

---

[13] Virtual University of Pakistan. About Us. Retrieved from www.vu.edu.pk
[14] ibid.
[15] Virtual University of Pakistan. How VU works. Retrieved from www.vu.edu.pk
[16] Interview with CEO of Private Virtual Campus, 1 April 2015.
[17] Interview with Rector of Virtual University of Pakistan, 24 March 2015.

such as location and equipment. The committee also visits the sites to determine their suitability. Partners need to meet all of VU's requirements in terms of infrastructure and agree on the rules that govern VU. In return, VU shares the revenue generated from student fees. Usually, private partners receive between 50 per cent and 60 per cent, but, where the private partner is particularly good, this share could reach 70 per cent. The fee structure is kept low, with a four-year Bachelor of Science degree costing approximately US$900 (total cost over four years). Thus, the more students the private partners have, the more revenue they can generate.

Private partners are responsible for providing the campus building, computers, a laboratory with computers installed according to VU's specifications, a network configured to support VU's LMS, a network administrator, electricity supply backed up with generators and UPS, and management protocols for discipline and use of facilities. Private partners may also provide additional facilities such as canteens and kitchens, as well as lecture rooms for discussions. Private partners are not permitted to charge students for any services (there is no financial transaction between students and the campus). All fees are sent to VU.

As one partner explained:

> *Basically, it is some sort of association/affiliation with the University acting as their authorised Centre for Studies and Online Exams ... We provide the ICT aids for their students, hold social activities and seminars, and advertise in our area, and we got fee shares from students … the examination centres are also entitled to payments from the University for their logistic support.[18]*

VU provides all the content required for the course via the LMS. It provides access to tutors who are full-time employees of VU. It also creates and grades assignments and examinations. Additionally, all examinations conducted at a private partner's computer laboratory are invigilated by VU staff.

Partners essentially do whatever VU asks of them regarding infrastructure; there is continuous coordination with regards to system and student needs. Rules are posted on the VU website (for example, that partners cannot change ownership or change the name of the institution).

Risks

Given that the fee structure is low, private partners need to ensure that they attract enough students to make a profit and be successful from a financial or sustainability perspective. There is also a theoretical possibility that this risk may be exacerbated by growing competition from international online education providers, though none of the participants interviewed identified this as a risk. If it becomes reality, government might need to introduce regulatory measures to protect against opportunistic online education providers, though these would be difficult to enforce given the globalized nature of online education.

The national power shortage also poses a risk. Campuses have to use their generators on a regular basis, which affects feasibility and sustainability:

> *When we started, we did not have an energy crisis. But from 2008 onwards, we really ran short of electricity. Every two months we have midterm examinations, every four months end-of-term examinations, and the Master of Science is a three-hour paper. So we can't afford to have a*

---

[18] Interview with CEO of Private Virtual Campus, 25 March 2015.

breakage of electricity for even a second. So we have a UPS system and our own power generators.[19]

Another risk relates to the rapidly changing nature of technology and the need for partners to continuously upgrade their equipment:

The technology in computers is changing so rapidly that the depreciation rate of the system is so much that it can pose a problem.[20]

One partner noted that no legal agreement was signed at the start of the partnership. An application form including details on available infrastructure, a nominal fee and copy of a national identity card was submitted. After inspection of the submission, the partner was granted permission to advertise as a VU Private Virtual Campus (PVC).

There was blind trust. Still, I have no agreement. … They now show me the contracts … but if someone changes their mind, where does agreement go? I am working without an agreement. I trust them. There is no contract. Nobody signed — we follow all the rules and admission process etc.[21]

This was not regarded as a serious risk, as partners feel that this is a government university, and the government is highly vested in providing higher education. Thus, partners regard the risk as low, especially as they are able to meet all the requirements.

However, one partner was negatively affected by the absence of a contract, and his case highlights the need for rules around the distance between campuses. He set up a campus, and shortly thereafter, and without warning, VU opened another PVC owned by another private sector partner in the same vicinity. He had to close his campus when students chose the new campus over the existing one because the owner was from their own community. This resulted in a substantial loss of capital. This suggests a need for contractual written agreements and rules that do not continuously change: "There is no security — trust must be maintained."

From VU's perspective, the challenge is to ensure that it chooses suitable partners, because, if the private partner cannot meet its obligations (and, for example, closes down), it becomes the responsibility of the university to ensure that the student has the required support. For this reason, most locations have more than one partner operating (usually in a town close by) to ensure that students have the option of attending another campus if theirs ceases operations.

Monitoring

VU has regional campus managers in Islamabad, Lahore, Multan, Hyderabad and Karachi. Their job is to conduct physical inspections of campuses, thus ensuring that campuses are monitored on a continuous basis. Additionally, as all management systems are automated and online, the VU can assess the provision of service from the private partners.

Should private partners wish their centres to be examination centres, all equipment is assessed thoroughly before each examination to ensure that the laboratory is suitable to be used as an examination

---

[19] Interview with CEO of Private Virtual Campus, 1 April 2015.
[20] Ibid.
[21] Interview with CEO of Private Virtual Campus, 25 March 2015.

centre. Examinations are conducted on a regular basis, and so also serve as a monitoring process to ensure that laboratories and equipment are up to date.

Financial Model

As noted, approximately 50 per cent to 60 per cent of student fees go to private campuses, which are not permitted to charge students directly. Small campuses typically make less profit even though they tend to be located in small towns where costs are also typically lower. In big cities, campuses need to have high student numbers in order to be financially viable. Private campuses that meet the requirement to be an examination centre also receive compensation on a per-student, per-session basis. Thus, private campuses generally compete to be examination centres, and this serves as an additional incentive to keep laboratories up to date.

Private partners may offer facilities that exceed VU's requirements. For example, one partner provides some sports facilities to students, but no fee is charged for these because the aim is to enhance student experiences. Social and sport events are not part of the partnership agreement, but campuses can provide these from their own funds if they so wish.

Another private partner noted that many students attending his campus were not computer literate or fluent in English, and so now includes a two-week "orientation" for new students to familiarise themselves with computers and the university's LMS:

> *We make the students aware of how to use the VU LMS to the best of their capabilities. Our duty is to make them computer literate and comfortable with online education, and [to provide an] environment where they can do their work — a friendly learning environment.[22]*

This partner also employs its own instructors (usually VU graduates) to guide students and answer their queries. This is regarded as particularly important for students who are not fluent in English:

> *Our students come from an Urdu-medium background … and the lectures are in both English and Urdu. We found out that our students had difficulty in following the lectures and in using computers. We also had high drop-out rates and we wanted to reduce that. So we employed our own instructors and we made them tutors. They attend lectures, and after or during the lectures, they would explain to students [areas not understood by students].[23]*

Each student is allocated an instructor who keeps track of how much laboratory work their students have done and what their examination results are, and who can identify when students are experiencing difficulties and help address those difficulties. Additionally, some senior students are selected as student coordinators and provided a stipend. Their role is to support or mentor weaker students.[24]

Sustainability Plans

VU notes that, "if campuses are not performing to mark, we disassociate from the partners."[25] However, it tries to ensure that such disassociation is kept to a minimum as it is disruptive to students. There have only been a few instances where students needed to change campuses, but they were in close proximity to their previous campus (approximately 10 kilometres away).

---

[22] ibid.
[23] ibid.
[24] ibid.
[25] Interview with Rector of Virtual University of Pakistan, 24 March 2015.

Students provide feedback on their campus experience. Any reports of inadequate infrastructure are followed up by a visit from VU staff to verify if the complaints are justified. There are also general periodic visits to campuses to ensure that partners are providing the facilities required.

As private partners need a minimum number of students to be financially viable, VU helps to support their efforts by advertising the programmes. It also has an SMS system that allows any potential student to send their city name and receive a reply indicating the closest campuses to that city. This helps to increase student numbers for campuses. Private partners also contribute to advertising and recruiting students. They set up billboards and run advertisements in newspapers in order to increase student numbers:

> *I myself have been struggling on many grounds, promoting the unique and new system of studies in Pakistan by holding seminars, distributing flyers and pamphlets in bazaars and trains, sending bulk SMS to the community, and replying to inquires almost 13 hours a day.[26]*

Successes and Challenges

Perhaps the primary success of VU is its ability to provide higher education in areas that were hitherto deprived of such opportunities. This is regarded as significant, particularly in a country of only 150 universities, primarily concentrated in large cities. Additionally, it provided access to higher education for women, meaning they are now able to study at an institution near their home. Significantly, the cost of higher education through VU is much lower than that of other higher education institutions. VU's efforts thus help to improve access to higher education.

Private partners noted that their dedication and passion for education is contributing to successful partnerships. Their pride is particularly noted when discussing successful students who have graduated from their campuses, some of whom are furthering their studies at doctorate level or are successful entrepreneurs, thus contributing to building a better nation.

Initially, one of the main challenges was convincing people of the value of using ICT for education. VU and its partners needed to promote understanding and deal with misconceptions regarding this mode of teaching. Another challenge was for the university to ensure that the partners maintain a high quality of service. Students usually provide feedback on this, which helps VU to ensure that standards are maintained.

Other noted challenges are around the financial model and the need to increase private partners' share of the student fees, especially as VU's system and broadband demands increase. One partner highlighted the need for their share to be tax-free, as it was until three years ago. This highlights the need for contractual agreements and for private partners to be better protected:

> *We should have some legal agreements. Since we have spent 12–13 years with this system, our interests should also be protected since we are working above the line for their plans and objectives.[27]*

An additional challenge is that some campuses are located in very remote regions (usually run by NGOs), and these are often difficult to access for monitoring and examinations.

---

[26] Interview with CEO of Private Virtual Campus, 25 March 2015.
[27] Ibid.

Analysing the attributes of the relationship

Based on the description of the partnership, the following table summarises whether this partnership meets the requirements of a PPP based on its key attributes:

Attribute	Presence
Contractual agreement	No, agreements are informal although there appears to be some efforts to formalize contracts.
Long term agreement	Yes, although the length of the agreement is not finite, given that some partners have been operating for over 10 years. However, there is no formal agreement as to the length of the partnership.
Fixed, finite contract, at the end of which asset control reverts to government	No. the contracts are not fixed or finite. Assets belong to the private provider and will remain with private provider. Digital content belongs to the VU and will remain with it.
Private company investment in the venture	Yes, the private partner invests in creating ICT laboratories.
Revenue generated to recover private party costs	Yes, a revenue stream is generated by enrolling students at the private campus. Demand risk is thus transferred to the private company.
Risks borne by the public sector are transferred to the private partner	Yes, as private partners carry the risk of attracting and retaining students; and of ensuring that the ICT infrastructure provided is relevant and current.
Government provides further contributions to cover capital expenditures and guarantee to allow effective sharing of risk	No evidence of further contributions.

This case study has most of the attributes of a PPP, with the absence of a formal contract and fixed operating term. As VU is in the process of establishing contracts (and we have not seen examples of contracts), it is possible that this attribute may be fulfilled with other private partners.

3.4 Institutional PPPs in ICT for TVET

There is evidence of some institutional PPPs in ICT for education; for example, the ICT Academy of Tamil Nadu (ICTACT). Another example is a PPP corporation that aims to stimulate the TVET sector, the National Skills Development Corporation (NSDC) in India, which although is not specific to ICT, does contribute to building TVET institutions that focus on developing ICT capacity in India. Thus, this example is explored in more detail below.

3.4.1 The National Skills Development Corporation (NSDC)

The NSDC, established in 2008 under the Ministry of Finance, works with the private sector to fulfil its mandate of teaching skills to 150 million people by 2022. The importance of skills in India was reinforced when the new government created a special Ministry of Skills Development and Entrepreneurship under which the NSDC now operates. The NSDC aims to promote skill development by encouraging the creation of large, quality, for-profit vocational institutions:

NSDC provides funding to build scalable, for-profit vocational training initiatives. Its mandate is also to enable support systems such as quality assurance, information systems and train the trainer academies either directly or through partnerships. NSDC acts as a catalyst in skill development by providing funding to enterprises, companies and organisations that provide skill training. It also develops appropriate models to enhance, support and coordinate private sector initiatives. The differentiated focus for the high growth sectors under NSDC's purview and its understanding of their viability will make every sector attractive to private investment.[28]

Its mission is as follows:

- *Upgrade skills to international standards through significant industry involvement and develop necessary frameworks for standards, curriculum and quality assurance*
- *Enhance, support and coordinate private sector initiatives for skill development through appropriate Public-Private Partnership (PPP) models; strive for significant operational and financial involvement from the private sector*
- *Play the role of a "market-maker" by bringing financing, particularly in sectors where market mechanisms are ineffective or missing*
- *Prioritize initiatives that can have a multiplier or catalytic effect as opposed to one-off impact.[29]*

The NSDC is described as being a PPP, with 49 per cent ownership by the government of India, and 51 per cent ownership by private industry associations. It can be considered an institutional PPP as there is joint cooperation between the public and private sectors within a distinct legal entity.

A three-pronged approach was adopted at the inception of the NSDC: create, fund and enable. This involved creating large-scale institutions capable of reaching the large population of India; funding the creation of the institute; and creating an enabling environment in which vocational institutions can thrive. The latter includes the creation of Sector Skills Councils (SSCs), creating funding mechanisms for teaching skills and making possible the creation of innovative technology solutions to reduce costs. Industry-driven SSCs set up by the NSDC are setting up quality frameworks. This mainly involves creating occupational standards for industry and also feeds into the national skills qualification framework.

The NSDC functions like a venture capital company. It funds debt, equity and grants, and encourages sustainable models. At the start, funds were provided by the government and were used to solicit interest in and fund the creation of the private TVET institutes. Currently, private entrepreneurs provide 25 per cent of the capital, while the NSDC provides 75 per cent. Thus far, 180 such institutes, described as PPPs, have been set up in 2,000 locations and have trained more than 2 million people. Each of these NSDC partners is required to include ICT, English and employability skills as part of their training. Approximately 35 institutions focus specifically on ICT. With the new government, the emphasis is on creating 100 digital cities across the country, and the expectation is that ICT will be in high demand.

One NSDC partner is Talentsprint. Talentsprint provides training for first-time job seekers in the banking and ICT sectors. It also aims to provide teacher training in the near future, with funding recently approved by the NSDC. It provides training for graduates to fill the gap between what students have to offer (usually theoretical knowledge) and what employers need.

Talentsprint refers to the training it provides as the "three-legged stool," as training is provided in the primary area of study (banking, ICT or child pedagogy), soft skills and communication (reading, writing and

---

[28] National Skill Development Corporation. About Us: Organisational Profile. Retrieved from http://nsdcindia.org/organisation-profile
[29] Ibid.

speaking English), and ICT (digital literacy). Since 2011, Talentsprint has trained approximately 100,000 students. It is currently working towards an online delivery system as opposed to face-to-face learning. They thus provided blended learning opportunities, offering contact programmes and virtual programmes.

Understanding the Partnerships

The partnerships are described as being collaborative and enabling, as the NSDC is also setting up a skills development market in the country. Funds are released over three to four years, and are subject to milestones being reached. However, as in any developing market, there is a need for flexibility, and at times funding may be approved even without 100 per cent target achievement.

The NSDC does not regard itself as a funding institute, but as a catalyst for skills development and vocational training in India. It has a specific team of motivated individuals driving programme development and proactively solicits partners, which are invited to submit proposals that are submitted for evaluation and due diligence, with feedback then provided to the proposal owner. The entire process is reported as being very transparent and collaborative so that partners are aware of possible issues that need to be resolved. There is no limit on the number of proposals accepted, and online submission proposals are possible. The NSDC is an outcome-oriented organisation. Partners are required to train students, place them in industry and provide evidence that at least 70 per cent have been placed in a job. The NSDC funds a lot of ICT training, as this is where skills are needed.

Talentsprint is a private, for-profit company. It sees its partnership with the NSDC as essentially a lending one, and they thus have entered into a borrower's agreement. The partnership allows Talentsprint to have favourable terms on long-term debt. In addition, the NSDC has a small (4 per cent) equity stake in the company. The NSDC is obliged to meet government targets in order to demonstrate to government that it is having a positive impact.

Risks

The partnerships face various risks. From the NSDC perspective, although a due diligence is done, there is the risk that a project may not take off and that the geographical location of that project may not give the partners a good return on their investment. The "quality" of the entrepreneur is another risk:

> *However well-meaning they are, and while we have a lot of systems in place, there is always a risk of failure. So what we did was right at the beginning when the government gave us target of 150 million to be trained by 2052, we planned for 200 million …* [30]

Another risk is that partners do not achieve their targets:

> *During the global financial crisis, there were no jobs for us to place people, and this was the risk of the economy. But we don't want the risk to stop us. We function like a private sector organisation — our DNA is private sector — all of us are private sector — the team, structure, we are incentivised if we achieve our targets.* [31]

Partners also face many on-the-ground risks, which include setting up the centres, dealing with local people and mindsets, and students who may not want to work. In addition, the government is running

---

[30] Interview with Head of Strategic Projects at the National Skill Development Corporation, 4 February 2015.
[31] ibid.

many free schemes and the NSDC is pursuing a revenue model, so partners face the challenge of attracting students to enter their paid programme.

For Talentsprint, the risks involve taking on debt and signing personal guarantees, because the onus is on the entrepreneurs to say what happens to the money. To mitigate this risk, the NSDC takes a small equity stake in its partners' businesses:

> *I won't call it transfer of risk, but transfer of responsibility. The government is saying that we need private companies who do education. With the NSDC, the government is parking funds and telling them — you find private companies who do this work. It is making people job ready — something that the government should have been responsible for. Now it's a responsibility for private companies like us. It is a transfer of business opportunity and not a transfer of risk. The model is highly creative and intelligent model for a country as large at us and which faces fairly significant national social problems.[32]*

Financial Model

The NSDC functions like a venture capitalist. It does not prescribe costs, location or revenues, but considers what the partner wants to do. Its decision to fund is based on a due diligence exercise, which is usually outsourced to third-party firms. The due diligence focuses on partner's ability to fulfil six criteria: employer view of demand for the specific skills; alignment with the NSDC's mission; robustness of overall plan and operating model; ability to leverage partnerships; ability to leverage financial requirements; and ability to leverage management capability. Details regarding the funding can be found at http://www.nsdcindia.org/funding. Monitoring is also outsourced to a third party. The company keeps its own costs low by outsourcing.

Monitoring and Evaluation

The NSDC has an online system through which training partners provide data and reports. The data provided go through confidence-level testing. The training is further monitored through a call centre and verified through random calls to students, as well as visits to the training partner:

> *NSDC has a monitoring cell, and every month there is a person whose job it is to update information and enrolment numbers. This programme was created by NSDC for monthly performance. The systems are managed by a consulting partner — KPMG. It is quite rigorous. If something is not clear, they send us clarification requests. We need to do annual plans — there is a fairly rigorous monitoring plan. A lot of training partners are complaining that it is too rigorous. It is all online reporting.[33]*

Sustainability Plans and Exit Strategy

A sustainability plan is required at the time of proposal development. Recognising that situations may change, the NSDC works with its partners every year to refine their short-term and long-term strategies. The exit strategy is usually mutually agreed. Thus far, the NSDC has only one partner that is experiencing major difficulties, and it is trying to resolve this. The NSDC tries to identify difficulties early and to develop solutions and recovery mechanisms. The legal route is the last resort.

---

[32] Interview with CEO of Talentsprint, 10 February 2015.
[33] Interview with Head of Strategic Projects at the National Skill Development Corporation, 4 February 2015.

Talentsprint sees the NSDC as providing a revolving credit model. Thus, as one loan is paid off, it asks the NSDC for more funds to let it move on to other training. The NSDC offers better interest rates than banks, and there are other benefits that come with being an NSDC partner:

> *There is a lot of benefit to remain with NSDC. NSDC also has bargaining power to negotiate favourable tax rates. NSDC partners have been waived from paying any service tax. So I would be foolish to exit that regime.[34]*

Resource Development

Talentsprint develops its learning and development materials in-house. However, for assessments, it partners with third parties such as Pearson to assess whether students are fully trained:

> *We can't decide if they [students] are fully skilled assets, so we do the skilling and invite third parties to certify them … It is a commercial arrangement. All our trainees are assessed by Pearson to assess [their] English competency level.[35]*

Successes and Challenges

Thus far, the NSDC has achieved all the targets it promised to the government of India. Its work has brought "energy into the entrepreneurship space," and has created much visibility and interest in fostering entrepreneurship as a business and social venture. This has resulted in over 180 partners working with the economically weak across 2,000 locations. Its work in government schools has also allowed integration of vocational training into mainstream education.

Talentsprint appreciates the learning experience of forming an organisation in parallel with the NSDC, which is also learning as it forms its organisation. In particular, Talentsprint appreciates the flexibility of the relationship:

> *It's been a journey of co-innovation … We are both learning … No one is terribly rigid. We have been flexible and so are they. They are flexible and open to new ideas.[36]*

One of the NSDC's challenges is to consider how to increase enrolment numbers. Another is to connect more closely with industry and foster an understanding that there is value in skilled people, so that not only large industries but also small and medium industries realise the value of skilled personnel and training.

A challenge when working with partners is to encourage delivery of quality training. As NSDC partners, it is easy to be eligible for public funding and free government schemes, but the NSDC wants partners to focus on the sustainability of their business and on ensuring the quality of training they provide. The development of SSC certification will assist with this, and proof of quality is also determined by whether or not industry hires students.

For partners, one challenge may be meeting the requirement that 70 per cent of trainees secure jobs in the formal sector. The supply and demand in the formal sector is skewed as there are insufficient formal jobs to absorb the number of students, making this target difficult to achieve (Talentsprint reports placement rates of between 60 per cent and 70 per cent). This model does not account for the number of

---

[34] Interview with CEO of Talentsprint, 10 February 2015.
[35] ibid.
[36] ibid.

students who go abroad to work or to pursue further higher education, or those who are self-employed in the informal sector. Talentsprint thus feels that there should be a better way of measuring skills development impact.

As an organisation, the NSDC faces various challenges. It needs to work actively to convince the government that it needs to function like the private sector. For example, when working through proposals, government officials would like to work on a prescribed scheme while the NSDC model encourages a business plan submission by the training partner.

Another challenge is to convince the market that grant partners are not needed, and that it is possible to do this work with a loan. The NSDC has also experienced challenges in setting up the Sector Skills Councils, which required a lot of marketing to industry and interested associations to convince them that this was a value-adding investment for industry:

> We have an idiotic sense of optimism and a great amount of persistence. We can go on no matter what. Government confidence in us has gone up as we have delivered more results on the ground.[37]

At the time of writing the report, more than 25 Sector Skills Council were reportedly fully functional.

Analysing the attributes of the relationship

Based on the description of the partnership, the following table summarises whether this partnership meets the requirements of a PPP based on its key attributes:

PPP attribute	Presence
Contractual agreement	Yes, there is a contractual agreement between NSDC and private partners. NSDC is an institutional PPP with a specific mandate to fill.
Long term agreement	No, funding is usually for a period of three to four years.
Fixed, finite contract, at the end of which asset control reverts to government	No, NSDC own equity in a private company. There is no transfer of assets.
Private company investment in the venture	Yes, the private company makes an investment in its venture.
Revenue generated to recover private party costs	Yes, the private parties generate a revenue stream by enrolling students.
Risks borne by the public sector are transferred to the private partner	Yes, private partner take on debt and set up training centres.
Government provides further contributions to cover capital expenditures and guarantee to allow effective sharing of risk	Yes, for Talentsprint, NSDC provides equity finance and has a small equity stake in the private company. Additionally, partners do not pay service tax.

There is some evidence of attributes of a PPP in the relationship between the NSDC and Talentsprint. However, given that there is no long term agreement and the partnership is primarily one of funding, it would not be appropriate to consider this partnership a fully-fledged PPP.

---

[37] Interview with Head of Strategic Projects at the National Skill Development Corporation, 4 February 2015.

3.5 PPP as a Buyer-Vendor Relationship: The Case of DataWind and the Aakash Tablet in India

This example has been regularly touted as a PPP in the media.[38] The Aakash tablet project was essentially aimed at equipping higher education students with affordable technological devices to positively affect their learning. It was rolled out as a pilot project by the government under the Ministry of Human Resource Development (MHRD). The government wished to provide a device that cost under US$35 to approximately 230 million students and piloted the project by providing 100,000 tablets.

The government assigned responsibility to one of the Indian institutes of technology (IITs) to execute the project. The IIT developed specifications for the tablet that would meet students' needs and ensure that the affordability factor was maintained. DataWind reported that it was the only company that responded to the government's global tender, and indicated that this would be possible. It met the specifications, and Aakash 1 was created. However, there were some glitches in the tablet, so, based on feedback from IIT and input from DataWind, Aakash 2 was created:

> *It is rare to see a bid and tender scenario where the vendor would go beyond the specifications to give a better product at only a marginally higher price. From a mere vendor-buyer relationship between the institution and us, it was more in a PPP domain as each was listening to each other's needs and we were both looking for a [suitable] product.[39]*

The specifications for Aakash 2 were 1 GHz ARM Cortex A8 processor, 512 MB RAM, 2GB NAND flash, 2GB SD card, 7" display with 800X480 resolution, four point multi-touch projective capacitive touch panel, Android 4.0 operating system and a gravity sensor.[40]

Partnership

The partnership is described as the close relationship that developed between the government-appointed educational institution and the vendor while working together to develop an adequate specification. It was a buyer-vendor relationship: the buyer was the government and DataWind was the vendor. The government undertook to procure 100,000 tablets after they were developed, thus providing a guarantee against which DataWind would be able to raise loan capital. Given the unusual nature of this commitment and its high profile globally, there was also a certain degree of reputational risk to government if the initiative ultimately did not deliver its intended result (offset though by the reality that no funds would be transferred until the tablets were developed).

> *In strictest terms it was not a PPP — but it took the shape of a PPP to give a device for the masses to [meet] the expectation of the authorities … [In a typical PPP], both public and private invest in a project in terms of capital activity, skill and capacity development — both work together and obviously [an] element of profit [is] involved for both.[41]*

---

[38] See Nair, R.J. (2012). India Unveils New Version of "World's Cheapest Tablet" (Update). Phys.org. Retrieved from http://phys.org/news/2012-11-india-unveils-version-world-cheapest.html; and EdTech Times Staff. (2012). India's Student-centric Aakash 2 Tablet Improves Processor, Battery Life, and Screen Size. Edtech Times. Retrieved from http://edtechtimes.com/2012/12/10/indias-student-centric-aakash-2-tablet-improves-processor-battery-life-and-screen-size

[39] Interview with Communications and Platforms Manager, DataWind, 3 February 2015.

[40] Moudgalya, K.M., Phatak, D.B., Sinha, N.K., and Varma, P. (2012). Genesis of Aakash 2. Retrieved from http://aakashlabs.org/builds/genesis-reprint.pdf

[41] Interview with Communications and Platforms Manager, DataWind, 3 February 2015.

After the tender ended, the relationship ended, and, due to a change of government, the tablet was not pursued. DataWind noted that it would be keen to continue the partnership if it was approached. It also noted that, until Aakash 2, there was no market for a low-cost device and that it had been successful in demonstrating its capacity to create such a device and to help bridge the digital divide.

Risks and Financial Model

The financial model was one of guaranteed procurement after research and development investment by the private partner. The government wanted to procure a tablet at a certain price. To help DataWind create this tablet, the government waived both duties on imported parts and excise duties. There were no risks involved other than the private partner addressing the sourcing of parts, the usual risks associated with product development, and whether they would be able to successfully deliver on the agreed specifications.

Exit Strategy

There was no exit strategy, but there was a hope that there would be broader rollout of the tablet. Thus, DataWind remains confident that its tablet will ultimately find a place in the government's digital plan.

Successes and Challenges

DataWind was able to deliver on an idea to meet a reported need. While the key use (when procured) was for education, Aakash is now in its fourth generation of development, and has succeeded in creating a market and developing a prototype that has been emulated by others. This helped create a new market segment for the population at the "base of the pyramid," or those in the lowest socio-economic group:

> We have a strong belief that this product has the ability to positively impact education ... if rolled out and given the prioritising it deserves.[42]

The main challenge was getting people to believe that such a technology within the stated price range was possible:

> It's really more the mindsets — point of getting them — once you deliver, show and once they see they believe.[43]

Analysing the attributes of the relationship

Based on the description of the partnership, the following table summarises whether this partnership meets the requirements of a PPP based on its key attributes:

PPP attribute	Presence
Contractual agreement	Yes, this was a buyer-vendor agreement.
Long term agreement	No, the agreement was short term to deliver a specific product.
Fixed, finite contract, at the end of which asset control reverts to government	No, the assets were procured from the start.
Private company investment in the venture	Yes, the private company was required to invest in the venture to complete development of the tablet without knowing whether or not this would generate a return on investment.

---

[42] ibid.
[43] ibid.

PPP attribute	Presence
Revenue generated to recover private party costs	No revenue stream was generated; the assets were purchased.
Risks borne by the public sector are transferred to the private partner	No, there was no transfer of risk.
Government provides further contributions to cover capital expenditures and guarantee to allow effective sharing of risk	Yes, the government waived excise duty and duties on imported parts.

Based on the key attributes of a PPP, there is little evidence of this partnership being a PPP. It appears to be a classic buyer-vendor agreement with guaranteed procurement if specifications are met. However, the nature of this procurement and its guarantee of procurement ahead of the Research and Development (R&D) phase of product development does suggest that this has some characteristics of a PPP.

3.6 Corporate Social Responsibility (CSR) Initiatives

Corporate social responsibility (CSR) refers to the voluntary activities taken by a company to operate in an economically, socially and environmentally sustainable manner.[44] It is a management concept whereby companies integrate social and environmental concerns in their business operations and interactions with their stakeholders. It is usually understood as being the way in which a company achieves a balance of economic, environmental and social imperatives, also known as the Triple-Bottom-Line Approach.[45] Young (2013) argues that corporations and foundations are no longer simply content with providing funds and are now looking at long-term goals when they select and work with non-profit partners in order to create win-win programmes that deliver value for both society and the company's bottom line.[46]

In ICT for education, CSR programmes have been running in various countries in Asia and the Pacific region. These include the Intel Teach programme and the Microsoft Partners in Learning programme. In particular, use of these programmes has been acknowledged with regards to their provision of teacher training programmes.[47]

Although technically not a PPP, a few examples of CSR initiatives have been included in this paper for three reasons. First, when contacting respondents for leads on PPPs in ICT for education, at least three respondents pointed to CSR initiatives in the region, indicating clearly that many people considered CSR initiatives to be a form of PPP. Second, papers on PPPs in ICT for education make reference to CSR initiatives as PPPs.[48] Third, CSR initiatives like the Intel Teach programme market their work as a PPP (see quote in the section on Intel below). Additionally, when interviewed, no respondents from CSR initiatives argued that their initiatives were not PPPs. Thus, this report has included CSR initiatives in the discussion

---

[44] Government of Canada. (n.d.). Foreign Affairs, Trade and Development in Canada. Retrieved from www.international.gc.ca/trade-agreements-accords-commerciaux/topics-domaines/other-autre/csr-rse.aspx?lang=eng

[45] United Nations Industrial Development Organisation. (n.d). What Is CSR? Retrieved from www.unido.org/en/what-we-do/trade/csr/what-is-csr.html

[46] Yang, A. (2013). Embracing Change: Delivering Effective Public-Private Partnerships through a New Lens. UNESCO Bangkok. Retrieved from http://www.unescobkk.org/education/ict/online-resources/databases/ict-in-education-database/item/article/embracing-change-delivering-effective-public-private-partnerships-through-a-new-lens/

[47] InfoDev and PriceWaterhouseCoopers. Information and Communication Technology in Education in India and South Asia.

[48] See, for example, Pillay and Hearn, Public-Private Partnerships in ICT for Education, and Lim, C.P. (2007), Supporting ICT Use in Schools with Public-Private Partnership: Experiences in South East Asia. Retrieved from https://www.academia.edu/1657454/Supporting_ICT_Use_in_Schools_with_a_Public-Private_Partnership_Experiences_in_South-East_Asia

on PPPs in ICT for education, together with an assessment of the extent to which they display any of the attributes of PPPs.

3.6.1 The GILAS (Gearing Up Internet Literacy and Access for Students) Initiative in the Philippines

The GILAS initiative has been described as a multi-stakeholder partnership (MSPE)[49] and a "social PPP,"[50] whereby companies put philanthropic or CSR funds into ICT projects in schools. There is no direct return on investment, but the companies benefit in terms of improved reputation, public relations/exposure and cultivating an appetite for ICT, which should lead to higher demand and higher consumption among young people who will eventually be part of the companies' target market.

In early 2005, access to ICT among public high schools in the Philippines was very limited. Of 5,733 public high schools, only about 50 per cent had computers and only 6 per cent had Internet access. Under the leadership of the Ayala Corporation CEO Jaime Augusto Zobel de Ayala, the GILAS consortium was formed. GILAS is a Filipino word that means "smart," but it is also the acronym for Gearing Up Internet Literacy and Access for Students.

The Ayala Foundation is part of the Ayala Group of Companies which is engaged in a wide array of business interests, including telecommunications, utilities, banking and finance, real estate and property development and management, automotive, and microelectronics. The Ayala Foundation was convener of the GILAS consortium. The consortium was composed of more than 20 companies, mostly from the ICT industry, such as Philippine telecom giants Globe, PLDT-Smart and Bayantel, Apple, IBM, Microsoft, Intel and Integrated Microelectronics, as well as business associations or NGOs such as the Makati Business Club and Philippine Business for Social Progress. The goal of the consortium was to bring computer laboratories with Internet access to all public high schools in the Philippines. GILAS started in January 2005 and aimed to provide Internet connectivity and ICT peripherals to public high schools and computer training to teachers in schools with existing computer laboratories.

GILAS was implemented over seven years, so the ICT specifications varied. For the PCs, the requirement was either brand new or one generation below (especially for donated, used computers). The Internet speed was intended to be able to support 10 to 20 PCs in a laboratory. The ICT services that were provided included free Internet access for one year, training for teachers on how to do research and teach using the Internet, and training for teachers on basic maintenance and troubleshooting. The telecommunications companies provided technical assistance and training to teachers over a one-year period.

Understanding the Partnership

GILAS is described as a "social PPP." The Ayala Foundation served as the technical team, taking the lead in both fundraising and deployment of the PCs and Internet to the schools. The private sector members of the consortium were there, at least initially, with philanthropic resources. The Department of Education co-chaired the consortium, and made sure the schools were ready to receive and use the PCs and the Internet. Aside from school-level activities where school facilities were used and teachers sent to attend

---

[49] Voytsekhovsa, G., and Kim, R. (n.d.). The Fight Against Information Poverty of Filipino Youth: Lessons Learnt from the GILAS Project. Gearing Up Internet Literacy and Access for Students. Retrieved from www.unesco.org/iiep/PDF/pubs/Philippines.pdf
[50] Written submission by the Undersecretary of Education, the Philippines, Mario Deriquito, 11 February 2015.

training, the government did not have any financial investment in the partnership. The partnership's aim was that, at some point, the government through the Department of Education would take ownership of the project, bring it to its completion and ensure its sustainability. Although it was an unwritten and unexpressed objective, some members also wanted to demonstrate the value of ICT in learning and to create the need for ICT among the schools, which would eventually translate into good business for them.

Some partners brought in hardware (PCs, thin clients, printers, and so on). Others contributed free Internet access for one year and at discounted rates in the succeeding years. Other members handled teacher training or donated funds. The Ayala Foundation handled overall management of the project, fundraising and actual deployment to schools, in addition to its role as leader of the consortium. Because it was largely a social investment, there were no big risks involved.

The government's involvement was through the Ministry of Education. The GILAS project proposer met with the Minister of Education at the start to explain the project, and invited the minister to join the steering committee. The minister attended most steering committee meetings. The government cooperated from the outset while it tried to assess the merits of the project. It allowed the consortium to go to the schools, asked local officials to support them and allowed teachers to attend the training. Over time, government participation increased, which ultimately resulted in the handover of the project to the government.

Monitoring and Evaluation

The monitoring and evaluation system was multi-layered. Monitoring was done by the management of the Ayala Foundation on a regular basis, and the monitoring report was presented to members of the steering committee. At the local level, local governments, local school districts and NGOs were asked to assist with monitoring. Additionally, a team funded by the World Bank conducted a study on the impact of GILAS.

Sustainability and Exit Strategy

According to project documentation, beneficiary schools were guaranteed one year of free access to high-speed Internet, after which they were required to subscribe. Many schools tended to fund their connectivity with the help of local government, supportive alumni and parents. Others were able to turn their computer laboratories into Internet cafés at weekends and charge an hourly fee to their computer users.[51]

The exit strategy was intended to transfer GILAS into the Ministry of Education. To do this, there was a need to convince the Ministry to take on the project, bring it to completion and ensure its sustainability. The handover of GILAS to the Department of Education was completed in November 2011. By that time, approximately 3,000 public high schools had benefitted from the programme and the government thereafter assumed responsibility for the remaining schools.

In late 2010, the Minister of Education agreed to put two programmes in place in the Department to continue what GILAS had started. There was an agreement between the Department of Education and GILAS to have a one-year transition and turnover period. The Department of Education established the DepEd Computerization Program (DCP) with the goal of bringing computers to all public high schools and eventually all elementary schools. The DepEd Internet Connectivity Programme (DICP) was established as

---

[51] Sañez, O. (n.d.). Gearing Up Internet Literacy and Access for Students (GILAS). Retrieved from www.fit-ed.org/congress2006/GILAS%20(Sanez).pdf

a mechanism to provide schools with the resources to pay for their monthly Internet service fees. The government allocated funds of US$1,200 to each school annually to pay for Internet services and electricity. To date, all schools, except 360 off-grid schools (5 per cent of schools in the Philippines), are connected. The government has been able to provide alternative sources of power for some of these schools, but they have not yet been connected to the Internet.

Successes and Challenges

The GILAS consortium remained intact until the project's completion in 2011 and generated about US$20 million. It managed to demonstrate the importance of ICT for education and facilitated the mainstreaming of ICT for education into government programmes and budgets. By the time it was turned over to the government, GILAS had provided PCs and Internet access to more than 3,000 public high schools.

One of the main challenges was the increasing number of public high schools, making the project goal a "moving target." When GILAS started in 2005, there were only 5,733 public high schools in the Philippines. By the time GILAS was mainstreamed into government programmes, there were more than 7,000. Another major challenge was the fast pace of technology development, putting much pressure on the project, both on the fundraising side and on the deployment of Internet connectivity and laboratories to the schools. A third challenge was how to bring ICT facilities to very remote areas, especially to schools that were not on the country's electricity grid.

The private companies strove to continue the work they were doing and focused their efforts on getting the government to take ownership of the project. When the government did take ownership, the solution was in sight. During handover, the government indicated its commitment to connect all public high schools to the Internet by 2012. At that time, approximately 4.4 million students in 3,306 public high schools throughout the country were already online, and 13,538 teachers were trained in Internet-assisted instruction.[52]

In this example, the private sector piloted an idea, showed proof of concept and brought it to scale for the government to complete and mainstream the programme. Under this model, the private sector contributed its resources in the early stages, so the private sector took the risk and experimented to find ways to make it work. When the government took over, it was able to work with the system in place and had learned lessons in terms of the bigger rollout, so it was less risky.

It was felt that this approach may be especially useful in a context like the Philippines, where there is typically not much room for pilot testing — in particular, if the private sector or civil society organisations work first on something on an experimental basis, develop a template and refine the system so that, when government takes over, it is less risky.

Analysing the attributes of the relationship

Based on the description of the partnership, the following table summarises whether this partnership meets the requirements of a PPP based on its key attributes:

PPP attribute	Presence
Contractual agreement	No, there was no contractual agreement between the consortium and government.

---

[52] Republic of the Philippines, Presidential Communications Development and Strategic Planning Office. (2011). DEPED to Continue GILAS Internet Project. Retrieved from http://pcdspo.gov.ph/goodnews-article/deped-to-continue-gilas-internet-project

PPP attribute	Presence
Long term agreement	No, there was no long term agreement.
Fixed, finite contract, at the end of which asset control reverts to government	No, there was no contract, but at the end of the project the assets were handed over to government.
Private company investment in the venture	Yes, the private partners invested in the venture, and provided all the ICT infrastructure, hardware, and software to schools.
Revenue generated to recover private party costs	No revenue stream was generated.
Risks borne by the public sector are transferred to the private partner	No, there was no transfer of risk as there was no agreement. However, the initiative helped to identify and, at least in principle, mitigate subsequent risks to be taken on by government.
Government provides further contributions to cover capital expenditures and guarantee to allow effective sharing of risk	Yes, there is some evidence that government provided access to schools to set up the laboratories and assisted with monitoring.

This case study does not show meaningful evidence of being a PPP, as it appears to be a philanthropic endeavour. Nevertheless, this model of the private sector using CSR funds to develop suitable ICT in education models and develop risk mitigation strategies could be an interesting first phase of a larger PPP in ICT in education.

3.6.2 Intel Teach (Indonesia)

Intel Teach is a professional development programme targeting K–12 schoolteachers. This programme facilitates and improves the knowledge and ability of teachers to integrate the use of ICT in teaching and learning in the classroom.

> *Intel® Teach is a proven program that helps K–12 teachers integrate technology effectively into classrooms and promote student-centered approaches, engaging students in learning and preparing them with critical skills for success in our digital world. Delivered through unparalleled public-private partnerships with government ministries and teacher education institutions worldwide, Intel Teach is the largest program of its kind.[53]*

The focus of Intel's CSR programme in Indonesia is on education and digital inclusion. In education, the focus is on transformation. By 2007, over 90,000 teachers in Indonesia had undergone professional development via Intel Teach.

Intel has created 10,000 "master" teachers who will train up to 50,000 teachers in 61 cities by the end of 2015. Intel also works with the teachers' association known as PGRI (Persatuan Guru Republik Indonesia), which has 600 branches across Indonesia, to deploy training across ten cities. As it has membership throughout Indonesia, PGRI invites teachers in its network to attend the Intel Teach training. In each of the ten cities, Intel creates a PGRI master trainer who then becomes the implementer of the programme in cities, thus creating a snowball effect.

---

[53] Intel® Teach Program Worldwide. (n.d.). Retrieved from www.intel.com/content/www/us/en/education/k12/intel-teach-ww.html

Intel and Telkom Digital Learning Programme

In 2013, Intel Indonesia, PGRI, Telkom Indonesia and the Ministry of Education and Culture (MoEC) began working together to conduct professional development for teachers across ten cities. In this partnership, Intel provided the curriculum and training and Telkom provided access to the necessary broadband and Internet and training facilities through its broadband learning centres. Telkom has a programme called Indonesia Digital School which involves the deployment of Internet access to schools across Indonesia, but there is a need to increase the capability of teachers to make the most of using it, and so Intel provides training on how to become an effective teacher. The MoEC provides certification for teachers once they have completed the training. This is regarded as important for demonstrating their capacity level as a teacher and affects their grading and salary.

Partnership with Government

Intel's primary partner is the MoEC and NGOs or civil society organisations that focus on education. Other partners include the PGRI and municipal governments and private sector across Indonesia:

> *We are creating a partnership with them to connect with government and the private sector to improve and enhance education deployment and education improvement in Indonesia.[54]*

There are 51 million school-going students and 3 million teachers across Indonesia. Intel essentially provides training in the curriculum for teachers, in conjunction with the Ministry, through face-to-face and online training. The focus is on 21st-century skills such as problem-solving, project-based learning, critical thinking and digital literacy.

Intel is also working with the MoEC ICT Centre, which has a network across Indonesia focusing on e-learning. Intel's involvement is to provide the curriculum and training and to gear up the programme to work with NGOs and other partners.

Each year, Intel works with the MoEC in a competition called the Intel Innovation Teachers Award, where teachers are assessed on how they use ICT as a teaching tool to make their subject teaching more effective.

Understanding the Partnership

Essentially Intel has a co-partnership with the MoEC in that it provides the ICT curriculum and demonstrates to the government how to build the curriculum, and the MoEC provides certification and adapts the curriculum. Formally, there is a memorandum of understanding (MoU) that outlines the deployment of Intel's programmes with the Ministry. The focus is on professional development for teachers and enhancing science, technology, engineering and mathematics teaching in Indonesia. The MoU aims to formalise and garner support from the government; the programme can only be effectively implemented with government support as it has control over the school infrastructure and certification for teachers. This requires Intel's curriculum to be in line with the government's curriculum. The nature of the cooperation is to ensure that Intel's programme is sustainable in the long term. Intel brings expertise and best practices from different countries in terms of education transformation, informs government of these developments and offers technical assistance. As the programme is run in 100 countries worldwide, Intel is able to provide resources and expertise. With regards to the professional

---

[54] Interview with Director Corporate Affairs of Intel Corporation in Indonesia, 12 February 2015.

development provided, Intel makes it possible for the trainers to travel and conduct training in all the cities. It also covers the cost of developing the curriculum.

There are no risks involved in this partnership.

Monitoring and Evaluation

Intel generally conducts its own monitoring and evaluation. This is not done formally, but takes the form of an internal evaluation with its partners. A formal programme evaluation was done in 2014 to assess programme deployment. The Ministry — specifically, the teacher professional development directorate — evaluates the teachers' proficiency once they complete the training.

Sustainability and Exit Strategy

To ensure sustainability, Intel works to ensure that the government understands the programme and continuously updates government officials on developments in the programme. Additionally, it has a teacher community programme, where Intel connects with teachers to learn about their development or progress after training. As a CSR programme, it has no exit strategy. Intel will continue to provide training as long as the programme is active in Indonesia. From a sustainability perspective, the initiative has shown little success to date in terms of its integration into public teacher education programmes that might continue the professional development once the CSR programme concludes.

Successes and Challenges

Each partner brings their best resources to a project, and there is trust among the partners as they have the same goals for education in Indonesia. Intel is able to replicate its programme, which creates sustainability.

Due to Indonesia being a large country with remote areas, geographically it is a challenge to reach teachers. At times, teachers' ICT skill levels mean they are not ready to receive the training. Additionally, training implementation may sometimes run behind schedule due to delays in government budgeting allocations for teachers to attend training.

Analysing the attributes of the relationship

Based on the description of the partnership, the following table summarises whether this partnership meets the requirements of a PPP based on its key attributes:

PPP attribute	Presence
Contractual agreement	No, Intel has an MoU with the MoEC, but there is no indication that this is legally binding.
Long term agreement	No, there appear to be short term-ad-hoc agreements depending on the project.
Fixed, finite contract, at the end of which asset control reverts to government	No, as the agreements are renewed periodically and there are no assets to transfer.
Private company investment in the venture	Yes, the private partners invest in providing training.
Revenue generated to recover private party costs	No revenue stream is generated.
Risks borne by the public sector are transferred to the private partner	No, there is no transfer of risk.

PPP attribute	Presence
Government provides further contributions to cover capital expenditures and guarantee to allow effective sharing of risk	Yes, there is some evidence that government provided access to schools and teachers for training.

This partnership does not show evidence of being a PPP, despite often being labelled as such, and appears to be more a philanthropic endeavour.

3.6.3 Microsoft Partners in Learning (Malaysia and Indonesia)

Microsoft Partners in Learning is a global programme that involves working with governments and education leaders at national, state and local levels to deliver professional development for teachers, curricula, tools and resources in order to develop 21st-century teaching, learning and digital inclusion to improve students' learning outcomes.[55]

The programme usually operates through an MoU between Microsoft and the Ministry of Education, where Microsoft shares best practices, content, latest trends and new approaches to teaching and learning, such as collaborative learning and helping learners develop 21st-century skills. The programme also provides teachers with professional development opportunities and connects teachers throughout the world.

In Indonesia, Microsoft provides face-to-face and online training for teachers. The latter involved the provision of videos and digital material posted on the Microsoft portal. Links to these resources are shared on the Ministry of Education and Culture's portal.

Partners in Learning also encompasses the IT Academy, which focuses on sharing teaching technology and curricula. It also has content for students to learn about technology (at the K–12 and higher education level). It provides access to resources for educators to give them the opportunity to stay up-to-date with the latest Microsoft technologies and to easily integrate these technologies into new or existing curricula.

Understanding the Partnership

According to the Malaysia representative, the aim of the partnership is to create better education in Malaysia, where there is an annual MoU. The project has been running for over ten years, and more than 254,000 teachers have been trained.

Training is also provided in Indonesia, and Microsoft supports events with prizes and trips to the global Educators Exchange forum, where the most innovative teachers in the world meet to build collaborative partnerships. The relationship with the Ministry has moved from a vendor-customer relationship to a partnership:

> *We are not pushing boxes or software, but we understand what the Ministry of Education wants.*
> *It cannot be a one-off "I sell you a box and walk away," but more of a hand-holding and showing*

---

[55] Microsoft Partners in Learning Overview. (n.d.). Retrieved from http://download.microsoft.com/download/2/B/6/2B6129BE-6A2E-4F43-8BF3-65C86618CB08/PILProgramOverview.pdf

how modernising education can make a better Malaysia — modernising education, transforming business by digitising it and transforming citizenship.[56]

They share the use of technology as a tool in teaching and learning and localise it to help shape this environment in Malaysia. Microsoft Malaysia notes that it has very good support from the Ministry of Education. It continuously engages with the Ministry, and when there are new global Partners in Learning programmes, it considers how to localise them. It is also involved in developing the education blueprint in Malaysia. Similarly, in Indonesia, Microsoft regards itself as a trusted advisor of the government and is part of a team looking at how to set up ICT competency standards using the work UNESCO has done and trying to localise it for the Indonesian context. The Ministry also draws on Microsoft expertise when requiring advice on ICT issues; for example, when they wished to set up email accounts for all teachers and students (57 million users) in Indonesia. As part of the agreement in Malaysia, Microsoft conducted digital literacy testing of all teachers in Malaysia to assess the different levels of teacher literacy. This exercise was completed in 2014.

Risks

There is no transfer of risk from the public to the private sector. A normal procurement process is followed in instances where Microsoft software is procured, but there is a reduced education price given the large scale of use.

However, there are other risks that may threaten the partnership with the Ministry. One is that competitors will influence the Ministry. Another risk when partnering with the Ministry is that there may be officials who are resistant to acknowledging the changing landscape of ICT for education, and Microsoft therefore needs to work at continuously providing relevant and updated information.

The Microsoft Malaysia representative highlighted the need to be very clear about roles and responsibilities prior to entering into projects with the Ministry. So, for example, with the digital literacy assessment, which was done free for the government, the Ministry was made aware of the potential challenges of the exercise (for example, that teachers may not be cooperative).

Successes and Challenges

One of Microsoft Malaysia's main successes is that it has become a trusted advisor to the Ministry of Education. This is attributed to its being able to share best practices, which gives it an advantage and displays its commitment to education in Malaysia.

One of its main challenges is that when there is a change of political office-bearers — following elections and Cabinet reshuffles, for example — there is a need to explain what the Partners in Learning programme is about. There is a chance that a new minister may not be keen to pursue Partners in Learning and may not want to continue with programmes that predecessors had agreed to.

Analysing the attributes of the relationship

Based on the description of the partnership, the following table summarises whether this partnership meets the requirements of a PPP based on its key attributes:

---

[56] Interview with Director of Legal and Corporate Affairs Malaysia and New Emerging Markets, Microsoft Malaysia, 30 January 2015.

PPP attribute	Presence
Contractual agreement	No, there is an annual MoU, but there is no indication that this is legally binding.
Long term agreement	No, there appear to be short term-ad-hoc agreements depending on the project.
Fixed, finite contract, at the end of which asset control reverts to government	No. The agreements are renewed periodically and there are no assets to transfer
Private company investment in the venture	Yes, the private partners invest in providing training.
Revenue generated to recover private party costs	No revenue stream was generated.
Risks borne by the public sector are transferred to the private partner	There was no transfer of risk.
Government provides further contributions to cover capital expenditures and guarantee to allow effective sharing of risk	Yes, there is some evidence that government provided access to schools and teachers for training

When examining this partnership, there is little evidence that this initiative constitutes a PPP, despite frequently being labelled as such, and this initiative appears to be more a form of corporate social investment and product positioning.

3.7 Summary

From the range of initiatives described in the previous chapter, it is evident that the definition of PPPs in ICT for education is unclear and often loosely applied. It ranges from vendor-buyer models to BOOT models — with very different goals and ways of operating. It appears that the concept of a PPP is used in such a general sense in this sphere that it is difficult to distinguish a "true" PPP from other partnerships that exist between the public sector and the private sector. As demonstrated, the term "PPP" is regularly used to describe CSR projects and donor projects — and there is a risk that almost any initiative that involves the private sector working with the government will be called a PPP. The plethora of ways in which the term is used in ICT for education thus makes it very difficult to sketch a landscape of actual PPPs.

More importantly, though, most initiatives in this field – while being described as PPPs and displaying some of the characteristics of such a partnership – do not stand up to scrutiny as PPPs when analysed more closely. This suggests strongly that:
1) The concept of PPPs is not well understood;
2) There are underlying motivations for labelling an initiative as a PPP when it is not; and
3) Despite the theoretical promise of PPPs, realising this potential is difficult in a sector where assets and infrastructure become obsolescent very quickly and the pace of innovation renders long-term commitments dangerous to make.

This is compounded by the limitation that most of the reported initiatives are from the secondary education field. Additionally, it is also possible that, due to different definitions and understandings of PPPs, more "true" PPPs exist but have not been uncovered by the research, unlike those that have marketed themselves as such. Using the definitions provided in the previous section, there are very few examples of true PPPs in ICT for education.

Table 4 maps out some of the operational aspects of PPPs in ICT for education based on the case studies.

Table 3 Summary of PPPs in ICT for Education Based on the Case Studies

Name of programme	Established	Government role	Private sector role	Risk-sharing	Exit strategy	Level of funding	Contract	Monitoring and evaluation	Sustainability plans
IL&FS Education	Via a tender process since 2010. There was substantial negotiation around costing and pricing.	Provide physical school infrastructure, support in the form of school principals, teachers and state education systems, and reimburse private partners when they achieve milestones.	Mobilise capital, procure hardware, set up computer laboratories in schools, provide highly qualified teachers, produce multimedia content, train teachers on using content and managing the laboratory, and conduct overall project monitoring and management.	Private sector carries most of the risk. Provide the initial capital investment and running costs; sometimes takes time to reimburse. Risk of obsolete technology. Government risk is around choice of partner.	Clearly defined in a contract. Contract runs for a defined period. At the end of the contract, asset ownership is transferred to the schools.	Payment corresponds with achievement of predetermined outputs.	The scope and objectives are clearly identified in the contract.	Private partner conducts its own monitoring. Third-party project monitoring as well as validation checks done by public sector staff. Annual student examinations conducted to monitor effectiveness of intervention.	Sustainability plans are defined at the start of the project and are usually defined in contract. Infrastructure needs to be in working condition. Schoolteachers are trained in specified skills and in how to manage the laboratory.
Virtual University of Pakistan	Established by the government as a public sector, not-for-profit institution to provide affordable quality education to students all over the country. Partnerships with the private sector (to establish private virtual campuses) is via an application process.	Provide syllabus and online tuition support, administer and monitor examinations.	Provide computer laboratories that are well functioning with uninterrupted power supply and broadband Internet access, and loaded with the required software.	Private sector carries most of the risk.	No exit strategy.	Private partner receives a portion of student fees (usually between 50% and 70%) depending on facilities.	Contracts (or at least those done at the start of the initiative) are not formalised. Appears to be some effort to formalise agreements.	Conducted by public partner to ensure adequacy and quality of infrastructure.	No sustainability plans are in place.
BlueSky	Responded to a request for proposal to a tender to provide telecommunication	Provide funding (with the ADB) for the equipment and installation costs.	Ensure that the network is set up and functional, and to provide operational maintenance.	Government takes the risk that the risk that the technology does not work.	There is no exit strategy	60% of payment made at the start of the project to purchase network	There is a formal contract established at the start of the project.	Project is monitored by a third part sponsored by the ADB	There are no sustainability plans.

53

Name of programme	Established	Government role	Private sector role	Risk-sharing	Exit strategy	Level of funding	Contract	Monitoring and evaluation	Sustainability plans
	infrastructure to schools in Samoa	Provide access to schools to set up requisite infrastructure		Private sector takes risk that the character of the network may change		infrastructure. During the three year contract period, operational maintenance costs are recovered for the support and operation of the network.			
NSDC and Talentsprint	NSDC was established in 2008 under the Ministry of Finance. Private partners are solicited and invited to submit an application.	Works with the private sector to fulfil its mandate of skilling 150 million people by 2022. Provides a catalyst for skills development and training by providing loans with favourable terms.	Train the required number of people as per agreement with NSDC. Provide infrastructure, training material and support for students.	Risk is shared. NSDC's risks: partner may not be successful, and geographical location of the project may not support the partners. The "quality" of the entrepreneur is another risk. Talentsprint's risks: taking on debt, setting up training centres, dealing with local people and mindsets, attracting students, and retaining students who may not want to work.	Usually mutually agreed by both parties. NSDC aims to be proactive in ensuring that partners do not exit the partnership through the early identification of difficulties and establishing solutions and recovery mechanisms.	NSDC offers funding with better interest rates than banks. They usually have a small equity investor stake in the private company.	Formal contracts established at the start of the partnership.	Rigorous online monitoring system where data are verified. Monitoring is outsourced to a third-party consultant. Training is monitored through a call centre and verified through random calls to students and visits to the training partner.	Sustainability plan required at the time of proposal development. NSDC works with its partners every year to refine their short-term and long-term strategies.
GILAS Initiative	Initiated by the private sector in 2005.	Allowed consortium access to	Companies put CSR funds into ICT projects in	Private sector took on the risk, but as this	Handover of project to government — to	Seed funding.	No contract was in place.	Monitoring by private partners, local	Sustainability was ensured by handing the

Name of programme	Established	Government role	Private sector role	Risk-sharing	Exit strategy	Level of funding	Contract	Monitoring and evaluation	Sustainability plans
		schools. Ensured that schools were ready to receive and utilise the PCs, and that teachers could attend training.	schools. Raised funds for the initiative. Consortium provided ICT infrastructure, Internet connection and computer training to teachers.	was funded by donations and fundraising, there was no real transfer of risk.	mainstream the initiative into the MoE.			government and local districts. Third-party impact study completed.	project over to government so that costs are covered as part of daily running expenses of schools. Government has continued the roll-out of the programme.
Intel Teach	Started in 1996 as a CSR initiative.	Provides access to teachers for training. Provides certification to teachers who participate in the programme. Adapts the curriculum to suit the local context.	Provides ICT curriculum to train teachers. Provides training of master teachers who then roll out the training to other teachers. Brings expertise and best practices from different countries with regards to education transformation. Offers technical guidance. Covers the cost of developing the curriculum. Covers the cost of trainers' training.	There is no transfer of risk.	There is no exit strategy.	In-kind funding covers the cost of trainers.	MoU with MoEC, which outlines the deployment of Intel's programmes with the Ministry.	Intel conducts its own informal monitoring and there has been formal evaluation as well. Teacher professional development directorate in MoEC evaluates teacher proficiency.	No formal sustainability plan. However, Intel works to continually update the government to ensure that it understands the programme. Intel also connects with trained teachers to learn about their progress after training.
Microsoft Partners in Learning	Over 10 years ago, initially (and according to respondent) as part of the normal procurement process.	Draws on Microsoft expertise for advice on ICT for education issues. Facilitates access to	Provides teachers with professional development opportunities (face-to-face and online training) tailored to local	There is no transfer of risk.	There is no exit strategy.	In-kind funding. Provides special education pricing.	Annual MoU with MoE which covers teacher professional development, and sharing of best practices,	Microsoft conducts its own monitoring.	No sustainability plans developed.

Name of programme	Established	Government role	Private sector role	Risk-sharing	Exit strategy	Level of funding	Contract	Monitoring and evaluation	Sustainability plans
		schools and teachers to conduct training and digital literacy testing.	contexts, and connects teachers throughout the world. Provides content to students via the IT Academy, and provides access to curriculum resources for educators. Involved in developing educational blueprints. Conducted digital literacy testing of all teachers in Malaysia.				content and trends.		
DataWind and the Aakash tablet	Via a tender process.	IIT executed project. Developed specifications for the tablet, conducted evaluation on first version of the tablet.	Built tablet according to specifications.	There was no transfer of risk.	Relationship ended when tender ended — the pilot was not pursued/expanded.	N/A	Vendor-buyer.	Evaluation done by implementing partner and results used to improve the product.	N/A

It is thus evident that the scope of PPPs in this sector is inconsistent and limited. The implications of this are considered in the following chapter.

Chapter 4:   What the Desktop Research and Case Studies Reveal about PPPs in ICT for Education

4.1 Lack of information on PPPs

The desktop research has revealed that there is a limited and contradictory body of literature on what a successful PPP in ICT for education might look like. In particular, the data availability on actual PPP investment in Asia and the Pacific region is limited and incomplete. Importantly, there is a lack of evidence, from the literature and the examples and case study sourced for this study, for the existence of many true PPPs in this field.

This observation is not new. Mann et al. (n.d.) note that, at the First Regional Conference on Secondary Education in Africa in 2003, it was observed that "there is scant information about PPPs … the absence of widely known models, summaries of key experiences and shared lessons learnt made the start-up and monitoring of these partnerships more challenging." Furthermore, the PPP and partnerships have different meanings for different constituents: "There remains a general lack of consensus about what exactly a partnership is, what the role of the private sector should or could be, and what some of the common obstacles and best practices in PPPs are, particularly regarding education."[1]

Additionally, there appears to be a "veil of secrecy" around some of the details provided on PPPs (and particularly those details contained in contracts between government and their private sector partners). There is a general scarcity of reports on such initiatives, and in some instances, potential interviewees refused to be interviewed about their initiatives. Others were not certain how their initiatives were related to PPPs. Although there is no evidence to confirm this, it is likely that this literature is further constrained by the reality that, for both governments and private partners in a PPP, there is limited value in revealing all the contractual details of PPPs in the public domain. Given that PPPs remain politically contentious in many countries, revealing full details of contractual and financial arrangements is politically risky for both government and the private sector, which makes it difficult to access detailed information on PPPs. These observations raise the issue of how sustainable PPPs can be in the long term in this field.

4.2 Misunderstanding of the term PPP

This study has revealed that misuse of the term "PPP" is widespread. When approaching participants for the study, it became clear that people did not understand what the term meant, and thus time was taken to explain it. It is crucial to note that, when many people were asked to provide examples of PPPs, most identified general ICT for education initiatives that involved the private sector. When many of these leads were pursued (and in some instances, when interviews were conducted), it became clear that there is no PPP element attached to these initiatives.

For example, in Indonesia, we were referred to the relationship between Telkom Indonesia and the Ministry of Education to support Pustekkom and Jardiknas ICT services to the education sector. However,

---

[1] Mann, G., Pier, D., Yasin, K., and Juárez and Associates. (n.d.). The Role of Multi-Stakeholder Partnerships in Colombian Education. Retrieved from www.unesco.org/iiep/PDF/pubs/Colombia2.pdf

there was no evidence of a PPP in this relationship, particularly as Pustekkom is part of the MoEC, and Telkom is a majority state owned company. The connectivity arrangements in education in Indonesia are segmented at national level (Jardiknas network) and school level (via School Operational Assistance fund). The Jardiknas network is procured through an annual tender process. Wifi.id is a service that Telkom sells to schools, organizations or personnel that are interested in reselling internet connectivity provided by Telkom through WiFi hotspots. For school/education institutions, Telkom refers to its product/service as Indischool Wifi.id. The regular Wifi.id charges are 1 cent (IDR 1000) for 2 hours duration, but for Indischool Wifi.id its only charges 1 cent for 24 hours. There is no exclusive partnership among government and Telkom for Indischool Wifi.id. Any schools willing to provide low cost broadband internet connection can partner with Telkom to provide this service. Telkom is also developing an EMIS application for the MoEC. This is a free service provided by Telkom for the MoEC. However, again, there was no evidence of a PPP.

Similarly, in Malaysia we were referred to the Smart Partnership initiative (see http://moe.gov.my/en/perkongsian-pintar), but there is no reference to PPPs in this initiative. Private sector involvement appeared instead to be in the form of joint training programmes, projects of funding or donation for ICT development in education. Likewise, we were directed to the eKindling collaboration in the Philippines (http://wiki.laptop.org/go/EKindling), in which eKindling, in collaboration with the National Computer Center, OLPC Friends and Lubang Municipality, is bringing 100 XO laptops to two public elementary schools on the island of Lubang Mindoro. Another such example in the Philippines is the LRMDS (Learning Resources Management and Development System) co-developed by the agency and the Australian Government Overseas Aid Program (AusAID), which sought to make learning resources available to teachers (see http://lrmds.deped.gov.ph).

4.3 Appropriation of the term PPP to describe any partnership between the public and private sector

The study found that there is a misuse of the term PPP in ICT for Education to describe relationships that do not exhibit the attributes of PPPs, and it is sometimes used to refer to any cooperative combination of the public and private sectors to achieve a public policy goal.[2] It also appears to be used to describe relationships formed between the private sector and public bodies, often with the aim of introducing private sector resources and/or expertise in order to help provide and deliver public sector assets and services. The working arrangements range from loose, informal and strategic partnerships (for example, CSR initiatives) to more formal contracts, such as the BOOT model (for example, the infrastructure projects in India). While there is evidence of the latter being a PPP (as per various definitions), the more loosely defined and structured partnerships tend not to be PPPs in the "true" sense — that is, as the term is used in other sectors.

Donor projects are often referenced in discussions about PPPs in education. International agencies, such as the Asian Development Bank and the World Bank, have invested in providing ICT to the basic education subsector. Some of these initiatives have involved setting up computer laboratories in schools, computerising education administration through EMIS and developing an e-curriculum with appropriate learning materials. Other initiatives have set up "schoolnets" and school-based telecentre projects where schoolchildren use the ICT facility during school hours and the community uses the facility for a fee after hours to generate an income that can help to offset the centre's operating costs. Most of these are initially

---

[2] World Bank. (n.d.). Public Private Partnerships Overview. Retrieved from www.worldbank.org/en/topic/publicprivatepartnerships/overview#1

partnerships between the government and donor agencies, but with the expectation that the community will take over the responsibility of ensuring sustainability once donor support ends.[3]

The term may possibly be used by the private sector itself in an effort to construe a deeper relationship between the private and public sectors than may be the case (for example, trying to portray CSI initiatives as evidence of preferential relationships between private companies and the government or for product positioning). Some private partners intimate, and sometimes even explicitly state, that they have a preferred relationship with government, when actually they have no contractual agreement or guaranteed operating space. It is not clear why this is done, but the perception may be that a PPP is a popular appproach and use of the term may bolster the marketing of initiatives, attaching the label to a project may make it appear more credible, or there may be increased public legitimacy from being associated with a successful global corporation.

It has been noted that there may be other, more appropriate terms that can be used to describe partnerships. For example, a more general term for agreements, such as "shared service delivery," which refers to a model where government works with private companies or NGOs/NPOs to provide services to citizens, may be used.[4]

4.3.1 What a PPP Is NOT

Given that there is no absolute consensus on what a PPP is, it may therefore be useful to consider what it is not. A PPP is not:

• A donation by a private party for a public good.
• A simple outsourcing of functions where substantial financial, technical and operational risk is retained by the institution.
• The "commercialisation" of a public function by the creation of a state-owned enterprise.[5]
• The privatisation or divesture of state assets and/or liabilities.[6]
• A relationship that does not involve the transfer of risks from the public to the private sector.
• A CSR project/initiative.
• Sponsorship.
• Mentorship.
• Loans.
• Aid programme.
• Public institutions that receive incomes from their commercial activities, namely, fee-charging courses, commissioned training, entrepreneurial spin-offs and patents.
• Public institutions with components of self-financing teaching programmes.
• Involving the private sector in education policy formulation. This could involve creating a platform for policy dialogue between the government and the private sector representatives. It could also mean including representatives from private institutions in education policy-making bodies.[7]

[3] Pillay and Hearn. Public-Private Partnerships in ICT for Education.
[4] Wikipedia. Public-Private Partnership. Retrieved from http://en.wikipedia.org/wiki/Public–private_partnership
[5] Department of National Treasury, Republic of South Africa. (n.d.). Public Private Partnership. Retrieved from www.ppp.gov.za/Pages/whatisppp.aspx
[6] Uttarakhand Public Private Partnership Cell. (n.d.). What Is Not a PPP. Retrieved from http://cell.upppc.org/index.php?option=com_content&view=article&id=21:what-not-ppp&catid=11:ppp-basics&Itemid=19
[7] Cheng, K. (2009). Public-Private Partnerships. In Bjarnason, S., Cheng, K., Fielden, J., Lemaitre, M., Levy, D., and Varghese, N.V. A New Dynamic: Private Higher Education. UNESCO. Retrieved from http://unesdoc.unesco.org/images/0018/001831/183174e.pdf

Using this list as a filter, it is clear that most of the ICT for education initiatives identified by the research participants are not PPPs.

4.4 Lost opportunity to integrate ICT into education PPPs

The research revealed that, despite an increased occurrence of school infrastructure partnerships and service delivery PPPs in education, there is no evidence that ICT for education is included as a key condition of the PPP contract. Of course, it is difficult to verify this without access to the contractual information and original terms of reference for these PPPs, but one would expect to find at least some indications of the inclusion of such services, had they been included, as ICT for education is generally seen as a positive marketing feature of educational activities (by both government and the private sector).

Additionally, exploration of the kinds of services being procured in ICT for education suggests strongly that there is limited scope for implementing PPPs exclusively to procure these services. This suggests that that the most effective way to use PPPs to advance ICT for education will be to incorporate the delivery of these services into wider education PPPs. In this way, procurement of ICT for education services can be seen as a means to a wider, long-term educational end, as part of which ICT for education services are seen as an essential input rather than a deliverable in their own right. Shifting the focus in this way might serve to significantly accelerate effective deployment of ICT to improve the quality of educational delivery in the region.

4.5 Service focus in ICT for education

Evidence from the case studies suggests that the main service delivered by initiatives described as PPPs in ICT for education appears to be the provision of ICT hardware and software to enable students and educators to use ICT-based administrative and curriculum/educational tools. Particularly relevant examples of these include the creation of ICT laboratories as outlined in the cases of IL&FS and VU and GILAS. Related to this has been the provision of connectivity — in the same case studies — to allow effective use of online educational services. The case study of BlueSky provided some evidence of the provision of connectivity to access online educational services.

Theoretically, the access provided in terms of ICT hardware, software and connectivity would allow learners and educators to access online digital resources and repositories. There is some evidence of the existence of initiatives labelled as PPPs that make educational resources, tools and information electronically accessible by learners and educators, most notably from IL&FS and Microsoft. For example, IL&FS notes that it provides access to multimedia content, and in that context, therefore, learners do have access to some digital resources. However, none of the initiatives mention the provision of online digital repositories to allow educators and students to re-use and adapt resources and to share them electronically. As part of the desktop research, we made an effort to locate evidence of any examples of PPPs between government and publishing companies, but could not find any such examples. This may well be because educational publishing has not historically been considered a public service, but has rather been the domain of private companies competing to offer services to governments, educational institutions, and students. However, as governments become increasingly interested in the economic models underpinning openly licensed educational materials and influenced by the pressure to see

government investments in educational materials released in the public domain under open licences, there may well be scope for the development of PPPs in this space in future.

Through provision of ICT laboratories and connectivity, VU private partners are able to provide electronic access to educational resources, tools and information in English and Urdu. The VU model allows learners to access online learning resources to support them in completing subjects in specialised areas of the curriculum when local lecturers are not available to teach those subjects. Importantly, it gives learners access to online, distance learning courses to support them in completing subjects, courses or programmes to meet growing demands for educated workers. The VU LMS system also allows them to communicate with peers and tutors within the system.

There also appears to be a focus on professional development efforts, clearly seen in the form of the CSR offerings from Intel and Microsoft, as well as the IL&FS and GILAS initiatives, which centre on building educators' capacity to teach effectively. These professional development efforts concentrate on the provision of continuing (in-service) professional development opportunities to educators, and are currently offered primarily in a face-to-face environment, although Microsoft noted that it also provides online training. In building educators' capacity, Microsoft and Intel have made available curriculum tools to enhance educators' teaching. In particular, the Partners in Learning programme promotes the use of ICT tools to reduce administrative workloads, reducing the proportion of time spent by educators on non-teaching activities. However, there appears to be little focus on the management of online professional development systems for educators and administrators, or on creating and managing online communities of practice. Additionally, none of them focuses on the provision of pre-service professional development for teachers.

With regards to the provision of ICT-based administrative and management information systems to educational institutions and the provision of online communication systems, only the VU noted that it offers this facility. IL&FS and the NSDC have evidence that they provide centrally managed, ICT-based transversal systems to facilitate the collection of, and access to, management information from their schools and partners.

The ICT for education services delivered in the case studies are summarised in Table 5, below.

Table 4   Summary of ICT for Education Service Offerings from the Case Studies

	IL&FS	VU	NSDC	GILAS	Intel Teach	Microsoft	DataWind	BlueSky
Provision of connectivity to enable effective use of online educational services	X	X		X				X
Provision of ICT-based administrative and management information systems to educational institutions		X						
Provision of centrally managed, ICT-based transversal systems to facilitate the collection of, and access to, management information	X	X	X					
Provision of fit-for-purpose online communication systems		X	X					
Provision of ICT hardware and software to enable educators and administrators to use ICT-based, time-saving administrative and curriculum/educational tools	X			X				
Management of online professional development systems for educators and administrators								

	IL&FS	VU	NSDC	GILAS	Intel Teach	Microsoft	DataWind	BlueSky
Offering pre-service and in-service professional development opportunities to educators, school/college/university managers and administrators, and support personnel who focus on effective use of ICT for education				X (in-service)	X (in-service)	X (in-service)		
Launching and managing online communities of practice								
Providing ICT hardware and software to enable learners to fulfil the ICT-related requirements of the curriculum, as well as to become information literate and ICT-capable	X	X		X			X	
Giving learners access to repositories of digital knowledge and other resources		X				X		
Making educational resources, tools and information electronically accessible for use and adaptation by learners and educators								
Giving learners access to online, distance learning courses to support them in completing subjects, courses or programmes to meet the growing demand for educated workers		X						

This summary reveals the limited extent of services procurement in ICT for education through PPPs. And it raises a critical question: Why are there so few examples of PPPs in ICT for education? Analysis of the kinds of services to be delivered in ICT for education provides a clear indication of why this might be; namely, that the PPP model does not lend itself well to procuring many ICT for education services. To understand this better, it is necessary to compare PPPs with other forms of procurement.

4.6 Understanding the dearth of PPPs in ICT for education

When considering the case studies, there appears to be much greater evidence of third party procurement compared to PPPs – this is noticed in the case of IL&FS and BlueSky. The phrase "procurement options" is used to describe the process by which a government will achieve delivery of its ICT for education objectives. The choice of procurement option depends on the nature and objectives of the initiative, and the route that offers the best potential for the delivery of value for money and risk-transfer. Procurement options can be broadly divided into two categories:

1) In-house procurement, where the responsibility for funding ,implementing, operating and maintaining ICT for education remains with the government; and
2) Procurement through a third party, where responsibility is transferred from a government to a private party through outsourcing. Management is through a contract that usually includes a service level agreement (SLA)

As discussed in Chapter 2, in broad terms, a PPP is simply an agreement between a government and a private company to share the risk and rewards of a project, with the private party assuming substantial financial, technical and operational risk in designing, financing, building and operating a project. It constitutes a viable solution to the scarcity of technical and financial resources within governments. Through PPPs, government contracts can, for example, simply state their requirements for ICT products or services and leave the technical specification to the vendor. As a result, risks such as operational and technology/obsolescence risks are transferred to the vendor, as has been illustrated in some of the examples in the previous section. PPPs generally mean that the assets and all related services are provided

through one contract. They are generally long-term contracts involving substantial initial capital investment and are often limited or non-recourse-financed. The PPP is regulated through an SLA with the government operating as the purchaser of services and/or enabler of the project responsible for monitoring and regulating service delivery. [8]

Evidence to date suggests that a PPP can be appropriate where there are major and complex, long-term capital projects with significant ongoing maintenance requirements. Here, the private sector can offer project management skills, more innovative design and risk-management expertise that can bring substantial benefits. Where they are effective, PPPs help to ensure that desired service standards are maintained, new services start on time and projects are completed on budget, and assets will not deteriorate.[9]

However, PPPs are unlikely to deliver value for money in other areas — for example, where the transaction costs of pursuing a PPP are disproportionate to the value of the project or where fast-paced technological change makes it difficult to establish requirements in the long term.[10] The PPP model is only likely to be applicable where:

- The private sector has the expertise to deliver and there is good reason to think it will offer value for money;
- The structure of the service is appropriate, allowing the public sector to define its needs as service outputs that can be adequately contracted for in a way that ensures effective, equitable and accountable delivery of public services in the long term;
- It can be demonstrated that a PPP offers greater value for money for the public sector compared with other forms of procurement; and
- The nature of the assets and services identified as part of the PPP scheme are capable of being costed on a whole-of-life, long-term basis. Investment with a time horizon of five to ten years is unlikely to benefit from the PPP approach.

The use of a PPP would be inappropriate where:

- The pre-conditions of equity and accountability in public service delivery cannot be met, as in most forms of frontline service delivery;
- The transaction costs of pursuing PPPs are disproportionate when compared to the value of the investment a project is delivering, thus impairing its value for money; or
- The fast pace of technological change in a particular sector makes it too difficult to establish requirements in the long term, or high levels of integration make enforcing systems' risk allocation difficult.

Given this, various factors thus need to be considered in an ICT for education PPP when deciding on the PPP procurement route:

- The fast pace of change in the sector, which may make it difficult for the public sector to effectively define the outputs it requires in a long-term contract;

---

[8] Davies, P., and Eustice, K. (2005). Delivering the PPP Promise: A Review of PPP Issues and Activity. PriceWaterhouseCoopers. Retrieved from www.pwc.com/gx/en/government-infrastructure/pdf/promisereport.pdf

[9] HM Treasury. (2003). PFI: Meeting the Investment Challenge. Retrieved from http://webarchive.nationalarchives.gov.uk/20130129110402/http://www.hm-treasury.gov.uk/media/F/7/PFI_604a.pdf

[10] Ibid.

- The high level of integration of ICT infrastructure into the other systems of government, which makes it more difficult to clearly delineate areas of responsibility to the client and the contractor, and so may make an appropriate sharing of risk more difficult to both discern and enforce;
- The nature of the capital investment, with costs in ICT dominated not by large up-front investment but by running and ongoing replacement costs; and
- The duration and phasing of investment, where ICT projects have a short life and include significant asset refreshes.

This provides a possible explanation for the relative dearth of true PPPs in ICT for education; namely, that the PPP as a form of procurement simply does not lend itself well to the nature of most of the services being procured, especially if they are considered in isolation from broader delivery of education services as a whole. There are few compelling reasons for government to enter into an exclusive relationship in this sector, as it does not make sense to remain locked into a relationship when in a few years' time there will be new technology or connectivity options that will change the nature of networking. There are few meaningful risks that can be transferred unless this is done as part of an overall infrastructure plan (for example, building the physical infrastructure of a whole university or college) due to the replacement period of ICT being too short to make risk-transfer work effectively otherwise.As the case studies have illustrated, where attempts have been made to introduce PPPs in ICT for education, they have typically been implemented over a time horizon that is too short to leverage the real benefits of PPPs as outlined above. The reality is that most of the services outlined in Table 5 lend themselves more readily to one of the other more traditional forms of procurement than they do to PPPs. Thus, it is possibly not surprising to have found that many ICT for education agreements between the public and private sector, while being labelled as PPPs, more often than not simply turn out to be a variant of one or more of the traditional procurement options or a form of corporate social investment.

4.7 Identifying the value addition of PPP in ICT and education

Notwithstanding the above limitation, it is worth reflecting briefly on some of the areas in which there may be some value addition through a PPP. In considering these options, though, it is important to keep in mind that it may be equally possible (and often more desirable and cost-effective in the long run) to use other forms of procurement to achieve the same outcomes.

Easing government's financial constraints

In the context of the global financial crisis, PPPs offer a possible solution to easing some of a government's financial constraints around infrastructure and educational service delivery. It can allow governments to create partnerships to share the costs of education and ICT, and such partnerships can be used to improve access, address equity and improve the quality of education. A PPP has the potential to serve as a mechanism to expand education infrastructure and service delivery. Such potential was evident in the case of the VU of Pakistan, where the responsibility for the delivery of quality education services remains with the government, but private institutions provide the necessary infrastructure and services.

Tackling geographical barriers to education and increasing access to education

PPPs focusing on the provision of education using ICT (such as the case of VU in Pakistan) may help meet the demands for education and open access to education for people who hitherto had no such access. This offering has particular value for those living in remote areas, where it is traditionally difficult to provide such services, and for women, who are able to access education close to their homes. Such a

model can serve to create a "spatial balance" so that aspiring students in all regions have better access to higher education.

Providing ICT infrastructure

The value addition of PPPs is evident from the case studies with regards to the provision of ICT facilities. ICT infrastructure in schools and other educational institutions can be rolled out via whole school infrastructure projects, particularly if the education ministry or department is also rolling out ICT infrastructure projects in parallel. From the perspective of PPPs, it is likely most feasible to combine these initiatives by including the provision of ICT in the school infrastructure PPP. This may help ease the roll-out of the required infrastructure. In instances where there is a contract in place to achieve set targets, this can foster a high level of accountability. The value addition has been seen in India, where many schools now have ICT laboratories. Another good example of this is the VU of Pakistan, where the objective is to deliver better educational services and ICT is part of the overall service agreement.

Providing digital resources

It is significant that many of the case study initiatives highlighted the provision of digital resources as part of the partnership. In most instances, the private partner is responsible for this provision — as is the case for IL&FS, which develops content in-house, and for Intel and Microsoft, which offer their ICT curricula for adaptation to local contexts. However, in the case of Pakistan's Virtual University, the video lectures and digital content are developed by the university (the public partner). As has been noted, given the growing interest in openly licensed educational resources delivered via online platforms, there may be emerging potential for PPPs in this space.

Developing teacher skills

Many partnerships in ICT for education tend to involve some level of skills development. In the examples, this is mostly with regards to teacher training (Intel, Microsoft and IL&FS). Teachers need ICT skills to be able to effectively develop 21st-century skills in learners. CSR projects contribute to equipping teachers with such skills and thus potentially have a role to play in the development of teachers. It may therefore be worthwhile to explore integrating private companies' CSR projects into mainstream MoE teacher professional development initiatives (if they are deemed worthy and in line with the country's needs). Aside from this, most initiatives to develop teachers' skills in ICT for education through PPPs are likely only to be successful if this objective is embedded in a wider PPP that includes either running education institutions or developing physical infrastructure for educational institutions.

Developing students

There is some evidence that some of the case studies also contribute directly to the development of students. For example, IL&FS notes that it conducts annual examinations to ascertain whether students have learned the skills they were meant to. In another example, the private virtual campus partners of VU in Pakistan noted the success of their graduates in being able to secure employment or gain admission into doctoral studies.

Establishing entrepreneurs

An unwitting value addition from the case studies is the development of entrepreneurs in the education sector. This was particularly noted in the case of the NSDC in India and the Virtual University of Pakistan, where the model adopted provides opportunities for entrepreneurs to set up training centres or campuses, thus serving the communities in their area.

Driving innovation

Partnership between the government and private sector may have the potential to foster a competitive climate to provide the best technology at affordable prices. They may serve as drivers of innovation for the development of new solutions, as in the case of DataWind and the Aakash tablet (UbiSlate), which exhibited some of the key attributes of a PPP.

Providing access to the labour market

In India, the large numbers of unemployed educated youth suggests that education institutions have been unable to properly assess and respond to the demands of the job market. The establishment of training centres and the efforts of the NSDC ensure further training that is tailored to the needs of the labour market, which increases the likelihood of students being able to enter the labour market as employees or entrepreneurs — for example, Talentsprint pointed out that 60 per cent to 70 per cent of their students are placed in the formal sector.

Improving public relations and boosting demands for the private sector

Often, large business/multinational private sector companies approach participation in ICT for education as a philanthropic endeavour, although it seems clear that they also expect their business to benefit, particularly from a public relations perspective, in terms of market positioning, and in their ability to influence education policy. Such relationships can also help companies to create and capture opportunities for their core business, so there is also a profit motive together with the need to build a brand. Additionally, they can help boost demand for a company's products and services, or provide a mechanism for joint investment and risk-sharing to create new markets or products. Furthermore, working with government can deepen a company's understanding of key markets and develop valuable networks for future business development.[11] This is seen particularly in the case of the CSR initiatives of Intel and Microsoft, but also in DataWind's Aakash tablet and the use of the technology developed to enhance their commercial efforts to roll out a low-cost tablet. The latter's work with the Aakash tablet was widely hailed by international organisations, including the United Nations, thus creating much visibility for their efforts. It is unclear, however, how such potential can meaningfully be leveraged through a PPP without running into serious risks of being labelled as unfair or uncompetitive practice by other similar companies.

4.8 Enabling factors

Given the potential value addition of PPPs and experiences gleaned from the case studies, there are important enabling factors that may be considered in further exploring the development of PPPs in ICT for education.

Creating a robust regulatory framework

A robust institutional and regulatory framework is often the crucial precondition for successful PPP development. There is also a need for strong political will to develop PPP models. Government policies can provide the foundation for the implementation of partnerships. In a competitive proposal process, transparency is important. However, unsolicited proposals (such as the GILAS initiative) can also be a positive catalyst to address public sector needs.

---

[11] Asian Development Bank. (2008). Public-Private Partnership Handbook. Retrieved from www.adb.org/sites/default/files/institutional-document/31484/public-private-partnership.pdf

Strong governance and management

There may be some value in creating PPP units in countries. Existing PPP units tend to vary by government. However, ideally, such a unit should be involved from conceptualisation to negotiation, through to final monitoring of the execution of the partnership.[12] They can share information with others on how to set up contracts and establish reimbursement and assessment mechanisms, and so on in order to develop a robust body of knowledge around PPPs.[13] Additionally, while not a guarantee, such a unit may be useful in addressing issues of uncertainty around the viability of a partnership, particularly as education policy and political shifts may introduce uncertainty into the procurement process.

Favourable environment

A good PPP, particularly one involving local and global partners, usually considers governmental, social and geo-strategic conditions. In order to attract global partners (both private sector and international donors), the macro-conditions must be favourable.[14]

Creating a clear vision and objectives

It is important to define a vision that indicates tangible objectives and outputs and shows clear benefit for the country and the potential for regional/global expansion activities.[15] This can help to create buy-in and promote the model espoused. The NSDC initiative is a good example of this, and, now that it is established, it reports that many new applicants wish to enter the market.

Strong planning and analysis

Evidence of strong planning should be captured in a detailed contract or business plan. Usually, the plan would clearly lay out the parameters that inform the relationship between the public and private partners, and include a detailed description of the rights and responsibilities of, risks to and benefits for both partners. It could also include performance standards; criteria for success; and conditions for renewal, intervention, revocation and non-renewal, while establishing the consequences for meeting or not meeting standards or conditions, as well as incentives for exceeding expectations. The performance standards would be clear, measurable and attainable. Such an agreement generally increases the probability of success for the partnership. As all contingencies cannot be foreseen, a good contract will include a clearly defined method of dispute resolution. It is also important to have complete transparency and accountability around the operator's financials, and contracts should include measures that promote these.[16] [17]

Identifying a champion or advocate

An individual who has the appropriate authority and is respected by stakeholders is needed for a successful implementation process that will give greater momentum to move ahead efficiently.[18] Well-

---

[12] The National Council for Public Private Partnerships. 7 Keys to Success. Retrieved from www.ncppp.org/ppp-basics/7-keys

[13] Central Square Foundation. (2014). Public Private Partnerships for School Education: Learning and Insights for India. Working Paper. Retrieved from http://centralsquarefoundation.org/pdf/ppp_in_school_education.pdf

[14] McKinsey and Company. (2005). Building Effective Public-Private Partnerships: Lessons Learnt from the Jordan Education Initiative. Retrieved from www.weforum.org/pdf/JEI/JEIreport.pdf

[15] Ibid.

[16] The National Council for Public Private Partnerships. 7 Keys to Success.

[17] Central Square Foundation. Public Private Partnerships for School Education.

[18] Akkawi, A. (2010). INSEAD PPP as a Policy Instrument. Ernst and Young. Retrieved from http://campuses.insead.edu/abu_dhabi/events/PPPPresentation29.11.10.pdf

informed champions can play a critical role in minimising misconceptions about the value to the public of an effectively developed PPP.[19]

Partner selection

A partner's experience in the specific area of the partnerships being considered is an important factor for identifying the right partner. Equally, the financial capacity of the private partner is an important consideration in the final selection process.[20] Two interviewees highlighted the need for a strong partnership with motivated partners who are focused on achieving project implementation within the agreed timelines.

> *It's the involvement between two organisations or parties that determine success — how they resolve differences, agree on timelines — will define the success and failure of the partnerships.[21]*

Create a balance between global and local standards

It is important for PPPs to find this balance because, while localised solutions are necessary, the outcomes should be recognised globally (that is, they should be in line with global ICT for education imperatives).

Flexibility in working arrangements

Partnerships need to be open to change and feedback in order to modify programmes accordingly. Such flexibility can also encourage innovation and allow for the demonstration of proof of concept models.

Continuous monitoring

Regular monitoring allows the development of flexible plans that will let the partnership adapt to changing situations. Third-party monitoring is an effective option that can evaluate the implementation of a PPP model and is important in ensuring the credibility of outcomes.

Adequate funding

PPP suppliers generally finance the investment and thus need to raise the necessary equity and loan capital from the market. Private companies must have the fundraising ability to cover full operational expenses. However, financial disbursements from public to private partners should also be completed on time so as to not to jeopardise the success of the project. It may also be worthwhile to include a degree of fiscal constraint that reinforces the need for a value for money approach.[22]

Robust exit strategy

The exit strategy should include a framework that allows for cascaded consequences. Thus, the contract should clearly specify the conditions of financial penalty, renewal, reduction in duration and termination.[23]

Relevant quality products

There should be a focus on providing services or facilities that are "in line with ground realities" and are of good quality.

---

[19] The National Council for Public Private Partnerships. 7 Keys to Success.
[20] Ibid.
[21] Interview with Communications and Platforms Manager, DataWind, 3 February 2015.
[22] CBI. (2007). Going Global: The World of Public Private Partnerships. Retrieved from www.infrastructureaustralia.gov.au/publications/files/going_global_PPPs_UK.pdf
[23] Central Square Foundation. Public Private Partnerships for School Education.

Chapter 5:   Conclusion and Recommendations

5.1 Recommendations

PPPs are an approach to procurement of services that is gaining considerable traction globally. While this approach has a much longer history in other sectors, it is growing in the education sector, with the realisation that PPPs in education offer potential for developing education systems to overcome some of their challenges, such as expanding access to education and improving programmes.

However, research on PPPs suggests a cautiously optimistic approach, as there are numerous cases of failed PPPs:

> *Despite being touted as a panacea, PPPs are often misunderstood and work well only under certain conditions. Because of this, a good deal of organizational and instructional literature has appeared with the goal of enumerating and promoting best practices involving PPPs, to ensure successful joint ventures.[1]*

The task of providing ICT for education is enormous and requires ongoing funding. PPPs offer one possible form of an appropriate strategic partnership in order to succeed in this endeavour of implementing ICT for education by bringing together governments, development partners, civil society and the private business sector. However, this research has revealed limited evidence of true PPPs in ICT for education in Asia and the Pacific Region, reflecting on reasons why this might be so. Nevertheless, based on the research conducted, the following recommendations are made to improve strategies and operational models of development partners such as the ADB in supporting developing countries in their efforts in pursuing PPPs as one mechanism to help to deliver on policy objectives and targets in ICT for education.

Develop a common understanding of the term

As Chapter 2 demonstrated, there is no standard universally accepted definition of the term "PPP." It often means different things to different people, which can make assessing and comparing international experience of such partnerships difficult. This has resulted in suggestions for narrowing the definition of the concept. For example, at the International Telecommunication Union, European Regional Initiatives meeting Increasing Role of Public Private Partnerships in the ICT Ecosystem, it was suggested that a PPP should be seen as a narrower concept that includes only economically related joint arrangements — for example, investments by private and/or public entities.[2] Nevertheless, there is also evidence of the term being used more loosely to refer to associations centred on topics of mutual interest, with each party's activities remaining independent.[3]

---

[1] Fife, E., and Hosman, L. (n.d.). Public Private Partnerships and the Prospects for Sustainable ICT Projects in the Developing World. Retrieved from http://classic.marshall.usc.edu/assets/025/7539.pdf

[2] International Telecommunication Union, European Regional Initiatives. (2013). Increasing Role of Public Private Partnerships in the ICT Ecosystem: 25 Years of Telecom/ICT Sector Reform in Europe, and Beyond. Retrieved from http://www.researchgate.net/publication/266943963_Increasing_Role_of_Public_Private_Partnerships_in_the_ICT_Ecosystem_25_Years_of_TelecomICT_Sector_Reform_in_Europe_and_Beyond

[3] McKinsey and Company Social Sector Office. (2009). Public Private Partnerships: Harnessing the Private Sector's Unique Ability to Enhance Social Impact. Retrieved from http://mckinseyonsociety.com/downloads/reports/Global-Public-Health/Public_Private_Partnerships_Enhancing_Social_Impact.pdf

In education, there are myriad ways in which the term is understood — and a lack of consensus as to what a PPP covers. One probable result of this is that any relationship between the public and private sectors is deemed by some to constitute a PPP (especially if it in their interests to do so). This is corroborated by examples explored in the case studies during the interviews.

Given this, there is merit in developing a common understanding of PPPs that can be applied to ICT for education. This can include developing a clear definition that outlines the ADB's perspective on what constitutes a PPP (in general), which can foster the development of a sound understanding of what is entailed in PPPs and the creation of conducive environments for sustaining the interest of both public and private partners. Specifically, within ICT for education, the ADB can highlight the weak use of the term and clarify in what contexts the term should be used. A simple theoretical understanding of the nature of PPPs, building on the attributes defined in chapter 2, can lead to greater insight and more successful projects in this sector.

Adopt appropriate partnerships suitable to the context

It is prudent to recognise that not all projects are suitable for PPPs, and PPPs are just one tool available for governments (as was outlined in the previous chapter). Every country has its own unique challenges, priorities and financial constraints. PPPs are not a one-size-fits-all solution, and they can carry significant costs. In some cases, other, potentially less costly methods of public-private collaboration will serve a given cause as well as or better than a new PPP.[4] Thus, the nature and extent of PPPs should be based on a government's assessment of its appropriate role in ICT for education and the relative costs and benefits of private sector involvement.

Encourage the development of regulatory frameworks

These frameworks should be tailored to each country's needs and context to promote PPPs in ICT for education. This can include the creation of institutional and regulatory mechanisms, such as a dedicated PPP unit. It may also be useful to encourage governments to establish open and transparent processes and retain sufficient expertise in risk and contract management (technical and managerial). At the same time, there is a need to ensure that PPPs do not bypass the issue of reform of the public system by simply handing over a task to the private party.[5] The ADB may thus wish to develop a simple policy guideline outlining the enabling effects of PPPs for ICT in education, and to ensure that risks and responsibilities are shared.

Focus on integrating ICT service delivery targets into PPPs that deliver broader education services

The results point to limited potential for PPPs focusing narrowly on ICT for education services provision. More careful analysis of the list of ICT for education services may be required to determine the viablity of delivery of any of these services constituting a core focus for a PPP. The main rationale for involving private partners in traditionally government-provided offerings is that the private party might be more capable than the public party of delivering the service at a specific time, fixed price and agreed-upon service level (quality). If it is possible to identify services that are handled better by the private sector than the public sector, it may be advantageous to build the services into a wider education PPP contract.[6] In ICT for

---

[4] Asian Development Bank. (2008). Public-Private Partnership Handbook. Retrieved from www.adb.org/sites/default/files/institutional-document/31484/public-private-partnership.pdf

[5] Gurumurthy, K. (n.d.). PPP Models in School Education: Learnings from "ICT Programs in Schools." Retrieved from www.itforchange.net/sites/default/files/ITfC/5_PPP_Models_in_IT_programs_in_schools%E2%80%93some_lessons_from_research.pdf

[6] Boye, E., and Mannan, M.A. (2014). Bangladesh: Public-Private Partnership in Higher Education. Asian Development Bank. Retrieved from www.adb.org/sites/default/files/project-document/81969/45181-001-tacr-01.pdf

education, this is particularly important given the short lifespan of technology, and a PPP that focuses mainly on the technology or ICT for education services provision may not be viable.

For example, this could be done during school infrastructure projects. When creating school infrastructure projects, governments could embed ICT and connectivity provisioning in those partnerships. Thus, any new school built or refurbished could also include relevant ICT facilities and connectivity requirements for educators and students. Such initiatives might also need to include sufficient capacity and skills building among educators in how to use the facilities and maintain them in order to ensure that such initiatives are sustainable.

Encourage the establishment of effective governance systems

In instances of governments wishing to explore PPPs in ICT for education, there is a need to ensure that the public agencies responsible for establishing and monitoring PPPs have the resources, information and skills required to design, develop and manage this complex relationship. An effective governance system can foster decision-making on major strategic issues and alignment of multiple partners within initiatives. This can include the development of a steering committee that is representative of each sector with individuals with sufficient seniority and time to engage actively. This committee should be constituted at the beginning of the initiative, as was done in GILAS.

Encourage consistent and transparent monitoring and evaluation

Little is known about how PPP models operate in this sector, which makes systematic evaluation difficult. Any PPP model should thus include monitoring and evaluation in its budget. There is also a need for better reporting of failed case studies, as these can be as instructional as successful ones. Thus, evaluating and reporting on initiatives in the region can allow for lessons to be learned and thus inform PPP development in the region. Likewise, it will be valuable to encourage governments to share more openly experiences gained during implementation of PPPs in an effort to build a strong evidence base to inform design of future PPPs.

5.2 Conclusion

Although this report has produced limited evidence of true PPPs in ICT for education, it has reported on various initiatives that exhibit some of the attributes of PPPs and that have been valuable to be both government and the private partners. Using this as a starting point, we believe that there is much value to be gained from further investment in developing an innovative conceptual framework to help governments to identify the potential for establishing PPPs in this sector. Such investment could focus, in the first instance, on convening a meeting of key experts and facilitating creative brainstorming on how to integrate new technological trends (such as open licensing, cloud hosting, and virtual education) and existing models of PPPs (for example, voucher programmes and school infrastructure programmes) to define new ways in which PPPs can help to meet ICT for education service delivery targets. If well designed, such an event could then be used as a basis for deriving new procurement models that harness the true potential of PPPs in ICT for education. Indeed, such investment may be the key to unlocking the much-touted, but little seen, potential of PPPs in ICT for education. As this research has illustrated, there is unlikely to be much progress for as long as government and the private sector continue to approach procurement in this sector using assumptions and conceptual models that are mostly derived from an educational system designed for a world that did not include ICT.

References

Akkawi, A. (2010). INSEAD PPP as a Policy Instrument. Ernst and Young. Retrieved from
    http://campuses.insead.edu/abu_dhabi/events/PPPPresentation29.11.10.pdf

Asian Development Bank. (2008). Public-Private Partnership Handbook. Retrieved from
    www.adb.org/sites/default/files/institutional-document/31484/public-private-partnership.pdf

Asian Development Bank. (2014). Public–Private Partnerships in Urbanization in the People's Republic of China (2014).
    Retrieved from www.adb.org/sites/default/files/publication/42860/public-private-partnerships-urbanization-prc.pdf

Asian Development Bank. (n.d.). ADB TA: Partnership for Innovation in in Education in Asia and the Pacific. Terms
    of Reference—Study on Public-Private Partnerships in ICT for Education.
    (See http://adb.org/projects/details?page=overview&proj_id=47211-001 .)

Body of Knowledge on Infrastructure Regulation. (n.d.). What Are the Different Types of PPP Arrangements? Retrieved from
    http://regulationbodyofknowledge.org/faq/private-public-partnerships-contracts-and-risks/what-are-the-different-
    types-of-ppp-arrangements

Boye, E., and Mannan, M.A. (2014). Bangladesh: Public-Private Partnership in Higher Education. Asian Development Bank. Retrieved
    from www.adb.org/sites/default/files/project-document/81969/45181-001-tacr-01.pdf

British Columbia Ministry of Municipal Affairs. (1999). Public Private Partnership: A Guide for Local Government. Retrieved
    from www.cscd.gov.bc.ca/lgd/policy_research/library/public_private_partnerships.pdf

Business Dictionary.com. Definition of build, own, operate, transfer (BOOT). Retrieved from
    www.businessdictionary.com/definition/build-own-operate-transfer-BOOT.html

CBI. (2007). Going Global: The World of Public Private Partnerships. Retrieved from
    www.infrastructureaustralia.gov.au/publications/files/going_global_PPPs_UK.pdf

Central Square Foundation. (2014). Public Private Partnerships for School Education: Learning and Insights for India. Working
    Paper. Retrieved from http://centralsquarefoundation.org/pdf/ppp_in_school_education.pdf

Cheng, K. (2009). Public Private Partnerships. In Bjarnason, S., Cheng, K., Fielden, J., Lemaitre, M., Levy, D., and Varghese,
    N.V., A New Dynamic: Private Higher Education. UNESCO. Retrieved from
    http://unesdoc.unesco.org/images/0018/001831/183174e.pdf

Davies, P., and Eustice, K. (2005). Delivering the PPP Promise: A Review of PPP Issues and Activity. PriceWaterhouseCoopers.
    Retrieved from www.pwc.com/gx/en/government-infrastructure/pdf/promisereport.pdf

Deloitte. (2006). Closing the Infrastructure Gap: The Role of Public-Private Partnerships. Retrieved from
    www.infrastructureaustralia.gov.au/publications/files/Closing_the_Infrastructure_Gap-
    The_role_of_PPPs_Deloitte_2006.pdf

Deloitte. (2010). Public-Private Partnerships: Working Together to Improve Public Infrastructure and Services. Retrieved
    from www.slideshare.net/james3b/public-private-partnerships-deloitte

Department of National Treasury, Republic of South Africa. (n.d.). Public Private Partnership. Retrieved from
    www.ppp.gov.za/Pages/whatisppp.aspx

EdTech Times Staff. (2012). India's Student-Centric Aakash 2 Tablet Improves Processor, Battery Life, and Screen Size. Edtech
    Times. Retrieved from http://edtechtimes.com/2012/12/10/indias-student-centric-aakash-2-tablet-improves-
    processor-battery-life-and-screen-size/

European Commission. (2003). Guidelines for Successful Public-Private Partnerships. Retrieved from
    http://ec.europa.eu/regional_policy/sources/docgener/guides/ppp_en.pdf

Fife, E., and Hosman, L. (n.d.). Public Private Partnerships and the Prospects for Sustainable ICT Projects in the Developing
    World. Retrieved from http://classic.marshall.usc.edu/assets/025/7539.pdf

Government of Canada. (n.d.). Foreign Affairs, Trade and Development in Canada. Retrieved from
    www.international.gc.ca/trade-agreements-accords-commerciaux/topics-domaines/other-autre/csr-rse.aspx?lang=eng

Gurumurthy, K. (n.d.). PPP Models in School Education: Learnings from "ICT programs in schools." Retrieved from
    www.itforchange.net/sites/default/files/ITfC/5_PPP_Models_in_IT_programs_in_schools%E2%80%93some_lessons_fr
    om_research.pdf

HM Treasury. (2003). PFI: Meeting the Investment Challenge. Retrieved from
    http://webarchive.nationalarchives.gov.uk/20130129110402/http://www.hm-treasury.gov.uk/media/F/7/PFI_604a.pdf

ICT Academy of Tamil Nadu. (n.d.). About ICTACT. Retrieved from www.ictact.in/Pages/Aboutus.aspx

IL&FS. (n.d.). Education, School Infrastructure and Management. Retrieved from
    www.ilfseducation.com/educationservices/schoolinframanagement

InfoDev and PriceWaterhouseCoopers. (2010).Information and Communication Technology in Education in India and South Asia. Volume 1, Extended Summary. Retrieved from www.infodev.org/infodev-files/resource/InfodevDocuments_890.pdf

Intel® Teach Program Worldwide. (n.d.). Retrieved from www.intel.com/content/www/us/en/education/k12/intel-teach-ww.html/?iid=SEARCH

International Telecommunication Union, European Regional Initiatives. (2013). Increasing Role of Public Private Partnerships in the ICT Ecosystem: 25 Years of Telecom/ICT Sector Reform in Europe, and Beyond. Retrieved from http://www.researchgate.net/publication/266943963_Increasing_Role_of_Public_Private_Partnerships_in_the_ICT_Ecosystem_25_Years_of_TelecomICT_Sector_Reform_in_Europe_and_Beyond

Jamil, B.R. (2005). From Policy to Practice: Trends and Evidence on Adopt a School Program. Retrieved from www.itacec.org/research/From%20Policy%20to%20Practice%20PPP%20AAS.ppt

Kaneva, M., and Untura, G. (2014). The Knowledge Economy in China and Public-Private Partnerships of Universities. Retrieved from https://www.academia.edu/8697296/The_knowledge_economy_in_China_and_public-private_partnerships_of_universities

La Rocque, N. (2007). Contracting for the Delivery of Educational Services: A Typology and International Examples. New Zealand Business Roundtable. Retrieved from www.hks.harvard.edu/pepg/PDF/events/MPSPE/PEPG-05-07larocque.pdf

Latham, M. (EdInvest). (2009). Public-Private Partnerships in Education. Retrieved from https://www.nuffic.nl/en/library/public-private-partnerships-in-education.pdf

Lim, C.P. (2007). Supporting ICT Use in Schools with Public-Private Partnership: Experiences in South East Asia. Retrieved from https://www.academia.edu/1657454/Supporting_ICT_Use_in_Schools_with_a_Public-Private_Partnership_Experiences_in_South-East_Asia

Mann, G., Pier, D., Yasin, K., and Juárez and Associates. (n.d.). The Role of Multi-Stakeholder Partnerships in Colombian Education. Retrieved from www.unesco.org/iiep/PDF/pubs/Colombia2.pdf

Marques, R.C. (2010). What Are the Different Types of PPP Arrangements? Body of Knowledge on Infrastructure Regulation. Retrieved from http://regulationbodyofknowledge.org/faq/private-public-partnerships-contracts-and-risks/what-are-the-different-types-of-ppp-arrangements

McKinsey and Company Social Sector Office. (2009). Public-Private Partnerships: Harnessing the Private Sector's Unique Ability to Enhance Social Impact. Retrieved from http://mckinseyonsociety.com/downloads/reports/Global-Public-Health/Public_Private_Partnerships_Enhancing_Social_Impact.pdf

McKinsey and Company. (2005). Building Effective Public-Private Partnerships: Lessons Learnt from the Jordan Education Initiative. Retrieved from www.weforum.org/pdf/JEI/JEIreport.pdf

Microsoft Partners in Learning Overview. (n.d.). Retrieved from http://download.microsoft.com/download/2/B/6/2B6129BE-6A2E-4F43-8BF3-65C86618CB08/PILProgramOverview.pdf

Moudgalya, K.M., Phatak, D.B., Sinha, N.K., and Varma, P. (2012). Genesis of Aakash 2. Retrieved from http://aakashlabs.org/builds/genesis-reprint.pdf

Nair, R.J. (2012). India Unveils New Version of "World's Cheapest Tablet" (Update). Phys.org. Retrieved from http://phys.org/news/2012-11-india-unveils-version-world-cheapest.html

National Alliance for Public Charter Schools. (n.d.). What Are Public Charter Schools? Retrieved from www.publiccharters.org/get-the-facts/public-charter-schools

National Skill Development Corporation. About Us Organisational Profile. Retrieved from http://nsdcindia.org/organisation-profile

Pillay, H., and Hearn, G. (2010). Public-Private Partnerships in ICT for Education. Digital Review of Asia-Pacific 2009-2010, pp. 77-87. Retrieved from www.digital-review.org/uploads/files/pdf/2009-2010/ppp_in_ict4e.pdf

Public-Private Partnership Center, Republic of the Philippines. (n.d.). Retrieved from http://ppp.gov.ph

Qiu, P. (2010). Can Public-Private Partnerships Deliver Better Public Services? *Ethos Perspectives*, Issue 4, 2010. Retrieved from https://www.cscollege.gov.sg/Knowledge/Pages/Can-Public-Private-Partnerships-Deliver-Better-Public-Services.aspx

Republic of the Philippines, Presidential Communications Development and Strategic Planning Office. (2011). DEPED to Continue GILAS Internet project. Retrieved from http://pcdspo.gov.ph/goodnews-article/deped-to-continue-gilas-internet-project

Sañez, O. (n.d.). Gearing Up Internet Literacy and Access for Students (GILAS). Retrieved from www.fit-ed.org/congress2006/GILAS%20(Sanez).pdf

Selinger, M. (n.d.). The Jordan Education Initiative. Retrieved from www.unesco.org/iiep/PDF/pubs/JEI.pdf

The National Council for Public-Private Partnerships. (n.d.). 7 Keys to Success. Retrieved from www.ncppp.org/ppp-basics/7-keys

Uncommon Schools. (n.d.). Frequently Asked Questions about Public, Charter Schools. Retrieved from http://uncommonschools.org/faq-what-is-charter-school

UNESCO Bangkok. (2013). Public-Private Partnerships in ICT for Education. Retrieved from www.unescobkk.org/education/ict/online-resources/databases/ict-in-education-database/item/article/public-private-partnerships-in-ict-for-education

United Nations Industrial Development Organisation. What Is CSR? Retrieved from www.unido.org/en/what-we-do/trade/csr/what-is-csr.html

United Nations. (2002). Report of the World Summit on Sustainable Development. Johannesburg, South Africa, 26 August–4 September 2002. Retrieved from www.un.org/jsummit/html/documents/summit_docs/131302_wssd_report_reissued.pdf

Uttarakhand Public Private Partnership Cell. (n.d.). What Is Not a PPP. Retrieved from http://cell.upppc.org/index.php?option=com_content&view=article&id=21:what-not-ppp&catid=11:ppp-basics&Itemid=19

Virtual University of Pakistan. (n.d.). About Us. Retrieved from www.vu.edu.pk

Voytsekhovsa, G., and Kim, R. (n.d.). The Fight Against Information Poverty of Filipino Youth: Lessons Learnt from the GILAS Project. Gearing Up Internet Literacy and Access for Students. Retrieved from www.unesco.org/iiep/PDF/pubs/Philippines.pdf

Wikipedia. Public-Private Partnership. Retrieved from http://en.wikipedia.org/wiki/Public–private_partnership

Witters, L., Marom, R., and Steinert, K. (2012). The Role of Public-Private Partnerships in Driving Innovation. Chapter 2, The Global Innovation Index 2012, pp. 81-87. Retrieved from www2.alcatel-lucent.com/knowledge-center/public_files/GII_2012-Chapter2.pdf

World Bank. (n.d.). Public-Private Partnerships Overview. Retrieved from www.worldbank.org/en/topic/publicprivatepartnerships/overview#1

Yang, A. (2013). Embracing Change: Delivering Effective Public-Private Partnerships through a New Lens. UNESCO Bangkok. Retrieved from http://www.unescobkk.org/education/ict/online-resources/databases/ict-in-education-database/item/article/embracing-change-delivering-effective-public-private-partnerships-through-a-new-lens/