

THE IMPACT OF OPEN LICENSING ON THE EARLY READER ECOSYSTEM **REPORT SUMMARY**



Neil Butcher and Sarah Hoosen, Neil Butcher and Associates
Lisbeth Levey, Consultant, ICT for Development
Derek Moore, Weblearning



This synopsis of **The Impact of Open Licensing on the Early Reader Ecosystem** includes key research findings and implications.

The full report can be found at <http://www.nba.co.za/impact-open-licensing-early-reader-ecosystem>

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GLOSSARY OF KEY TERMS

Below is a list of definitions for terms used in this report that might not be widely understood by readers unfamiliar with words common to the digital, e-learning, and/or early literacy world.

Creative Commons	Creative Commons is a non-profit organization ‘that enables the sharing and use of creativity and knowledge through free legal tools.’ ¹ To do this, Creative Commons has developed a series of licences that work alongside copyright to make it possible for authors to modify standard copyright terms and provide open access privileges to users. Each Creative Commons licence provides a different degree of freedom to users, but all require full attribution. Creative Commons licences are typically used for open access, open educational resources, and other forms of openly licensed materials.
Decodable	In reading instruction, the term ‘decodable’ refers to words containing only the phonetic code the child or student has already learned. To determine if text is decodable, you need to evaluate the phonetic structure of the vocabulary and compare it to the code knowledge the child has already acquired. We often think of decodable text as phonetically simple words and text. Although decodable text is simple in the beginning when the child has limited knowledge of the phonemic code, decodable text expands as the child learns more of the phonemic code. ²
Home language	The literature indicates a number of different terms used to describe marginalized or minority languages – e.g. first language, mother tongue, home language, heritage language, and native language – with each having different definitions. There are some contentions around using the various terms. For example, while ‘mother tongue’ is commonly used, it is argued that it is difficult to determine which language used by multilinguals is actually the person’s mother tongue, and a mother tongue can change during a person’s lifetime. In some countries, ‘native language’ refers to the language of one’s ethnic group and not necessarily the language the child speaks at home. Similarly, ‘first language’ may not be appropriate as it relates only to origin and a multilingual person’s chronological first language may not be their dominant language.
Local language	While an official language is a language that is given a special legal status in a particular country or jurisdiction and is generally used within government, there may be many other languages used by a people or country. We refer to these as ‘local languages’. This includes indigenous languages (languages that are native to a region and spoken by indigenous people).
Open educational resources	Open educational resources (OER) are resources that are allowed to be used, adapted, and distributed for teaching and learning without requesting permission. Although OER are mainly sharable online, they can be made available offline via a school intranet, on CD-ROM, DVD, or a memory stick, and in print.
Open licensing	Openly licensed works are free to be shared and built upon without requesting permission from the author or publisher. ³
Print on demand	Print on demand (POD) is a printing technology and business process in which copies of a book (or other document) are printed in response to an order, printing the exact amount ordered, usually in small quantities.
Value network	A value network is a network of relationships, which creates both tangible and intangible value through a complicated dynamic exchange between individuals, groups, and organizations. ⁴

¹ Creative Commons. (n.d.). *About Creative Commons*. Retrieved 4 March 2016 from <http://creativecommons.org/about>

² Gagen, M.R. (2007). *Decodable Text Explained*. Retrieved 4 March 2016 from <http://www.righttrackreading.com/decodabletext.html>

³ Open Definition. (n.d.). *Guide to Open Licensing*. Retrieved 4 March 2016 from <http://opendefinition.org/guide/>

⁴ Forum for the Future. (n.d.). *Value, Unchained*. Retrieved 4 March 2016 from

<https://www.forumforthefuture.org/sites/default/files/Value%2C%20Unchained%20-%20A%20short%20summary%20of%20value%20networks.pdf>



INTRODUCTION

Developing early literacy usually requires access to structured, decodable texts and levelled readers, an array of supplementary reading materials (SRMs), and teachers trained in literacy development methods and teaching in language/s spoken in the school where they teach. The fact that children acquire literacy most effectively in their mother tongue introduces a significant barrier to literacy development for those who live in low-income countries and speak local languages for which there is not a viable publishing industry. Even where content has been created, the supply chains that are needed to print and distribute educational materials are typically underfunded, inefficient, and often susceptible to corruption. In addition, these supply chains are often inequitable, are based on unreliable school statistics, have storage and stock control systems that are substandard, depend on poor transportation facilities, and are negatively affected by delayed payments from governments.

The problems affecting early literacy development have been well documented. However, research in this field has tended to focus on traditional publishing value and supply chains, without taking much account of new possibilities that might be ushered in as a consequence of the digitization of content and of how the use of open licences might create new approaches and solutions to these seemingly intractable problems. Consequently, this research exercise has focused attention on the development of *value networks based on open licensing* – and the extent to which these might meet the demands for materials in this critically important educational sector. We also devote attention to organizations that promote use, such as libraries. A concomitant focus on local, in-country value network strengths and weaknesses is emphasized because sustainability over the long run will require tapping into indigenous publishing, print, distribution, and use mechanisms.

SHIFTING TO THE CONCEPT OF A VALUE NETWORK: AN EMERGING MODEL

Globally, the traditional publishing business model has come under growing pressure as a consequence of technological development and digitization of content. Digital technology has brought an end to the ‘neatness’ of the traditional value and supply chain in publishing, while digitization has generated a wave of changes that continues to reshape publishing. Digital platforms and devices have also disrupted publisher supply chains. The process is no longer a linear chain or end-to-end process, but is rather a more complicated *value network*, in which different components can be planned and executed independently of one another. This ‘disaggregation’ of traditional chains is facilitated both by digital disruption and open licensing.

Digital disruption refers to ‘the change that occurs when new digital technologies and business models affect the value proposition of existing goods and services’.⁵ Continuous evolution of technology is changing the ways in which people do business, the dynamics of the workplace, and what we perceive as possible. While it has been argued that this process of disruption has not yet begun in earnest for publishing, future ‘disruptions’ mean that publishers and societies will continue to experience significant change, and businesses and organizations will need to leverage digital disruptions to enhance customer experience and drive business value, in the process also enabling the servicing of new and previously underserved/unserved target markets.

Openness is based on two important notions: egalitarianism, which implies an equal right to participate (access, use, and collaborate); and sharing, which is rooted in the idea of widening access where it has previously been restricted. Licensing is central to the issue of openness, and legal frameworks help to govern how open a resource really is. They provide legal mechanisms to ensure that authors of materials can receive acknowledgement for their work while allowing

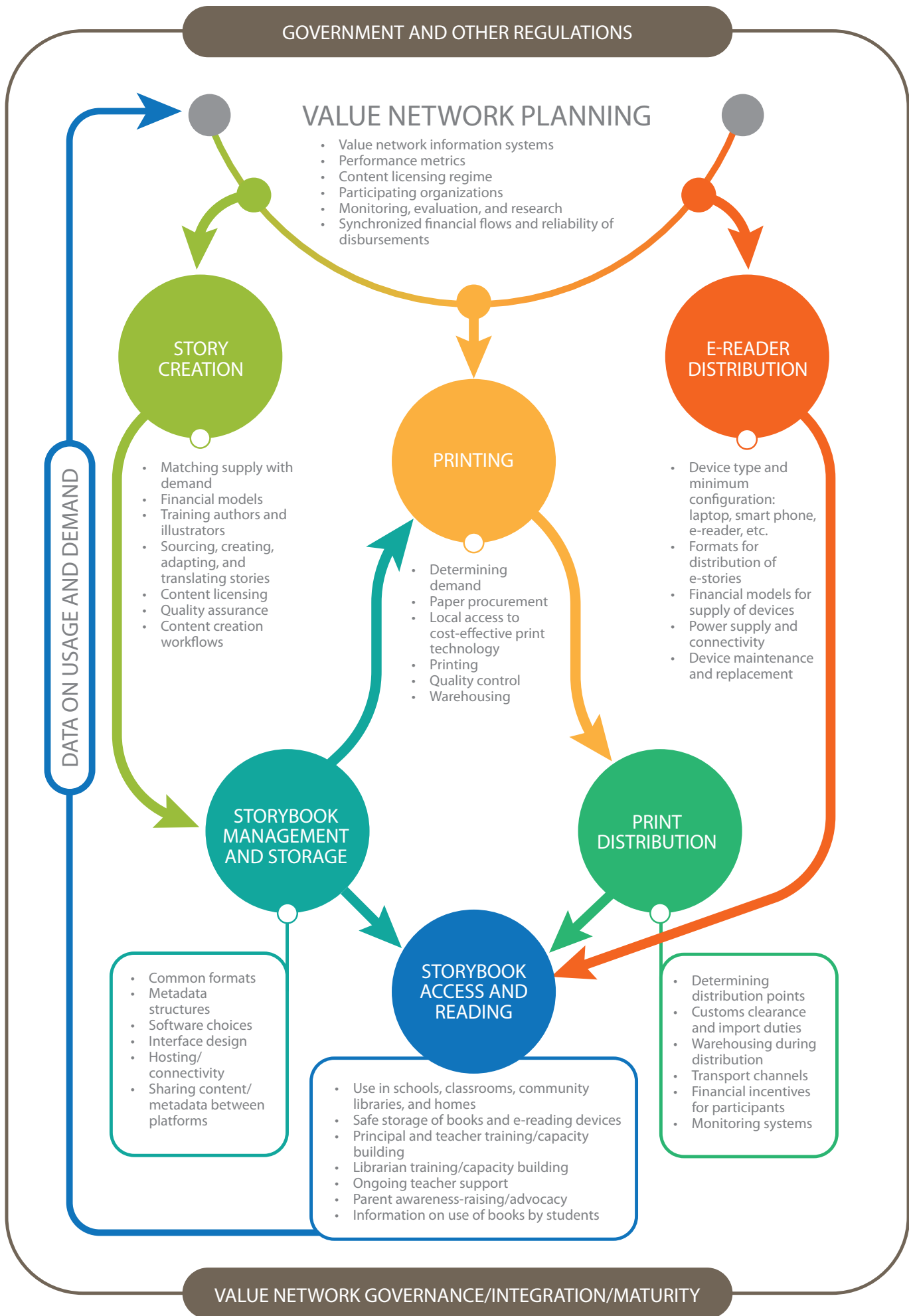
⁵ TechTarget. (n.d.). *Digital Disruption*. Retrieved 4 March 2016 from <http://searchcio.techtarget.com/definition/digital-disruption>



it to be shared. Open educational resources (OER) apply open source principles to the release of educational content. The term refers to any educational resource (including curriculum maps, course materials, textbooks, streaming videos, multimedia applications, podcasts, or any other materials designed for use in teaching and learning) that are openly available for use by educators and students, without the need to pay royalties or licence fees. These materials are considered open if they are released under an open licence, such as a Creative Commons licence.

Digital disruption and open licensing are important because they have stimulated a range of innovations that have potential to transform various operations of the early literacy reader ecosystem. Most important, though, is that digital disruption in publishing value and supply chains enables a *disaggregation* of those supply chains, so that each aspect of the early literacy reader ecosystem can function independently of the others. This introduces opportunities for working differently and more efficiently. With the Internet, value can be created in networks where individuals, customers, partners, competitors, and suppliers collaborate in value-creation processes. In early literacy in low-income countries, this concept of a 'publishing value network' can be represented diagrammatically (see Figure 1).

Figure 1 An early literacy reader ecosystem





Although this diagram includes many components one would find in traditional publishing value and supply chains, it illustrates how the process is no longer a linear chain or end-to-end process. Rather, we see an ecosystem comprising a more complicated value network, in which the different network components can be planned and executed independently of one another. This disaggregation of the traditional chain is facilitated both by digital disruption and open licensing. The concept of an early literacy reader ecosystem reinforces either the richness or poverty of reading systems in place and the potential (or lack thereof) for adaptation and self-organization. The term 'early literacy reader ecosystem' thus highlights the complex, nonlinear interactions that affect, sustain, or frustrate the reading opportunities of children in low-income countries.

EMERGING INNOVATIONS THAT CAN TRANSFORM THE EARLY LITERACY READER ECOSYSTEM

Within this new framework are emerging innovations, a few of which are summarized below.

- **Transforming content creation models**
 - Pratham Books⁶ in India shares its stories under a Creative Commons Attribution licence, and treats content creation, printing, and distribution as separate processes funded independently (rather than loading content creation costs, usually associated with rights acquisition, into the printing and distribution of its books). This results in an ability to sell its printed book titles at approximately 50% of the cost of those sold by commercial publishers. Pratham Books launched a platform called Storyweaver, through which it distributes its resources online under an open licence.
 - The African Storybook Project (ASb)⁷ has created an online platform that provides access to completed stories, while providing tools for creation and translation/adaptation of existing stories. All of these stories are licensed under a Creative Commons Attribution licence. ASb has been experimenting with ways of using its online content creation and translation/adaptation tools to draw new players into the content creation space, including harnessing teacher education students to contribute to content creation.
 - Both Pratham Books and ASb have made their online platforms Web responsive and therefore more easily accessible via mobile devices, expanding access to their openly licensed content.
 - Book Dash⁸ is an example of an initiative using innovative content creation models, bringing together teams to produce a book within the short space of twelve hours.
 - Several initiatives are releasing their storybooks under a Creative Commons licence: for example, CODE in Ethiopia⁹, US-based Brothers Whim¹⁰, Crimperbooks in the UK¹¹, and Little Cree Books in Alberta, Canada¹².
- **Storybook management and storage**
 - Storyweaver and ASb have made available, as separate files, all of the images from their stories so that these can be used as resources in new content. They have also shared and translated/adapted stories, a process which took place 'manually'. However, given that the underlying content (text and images) of the stories is digitized, such sharing might be automated in future, with common data protocols and data-sharing standards enabling users of these platforms to 'see' the underlying content of stories across a network of online platforms.

⁶ Pratham Books is a non-profit organization established in 2004 with the mission of 'putting a book in every child's hand'.

⁷ The African Storybook Project (ASb) was established to create and distribute picture storybooks in African languages, using a Creative Commons Attribution licence.

⁸ Book Dash is a South African non-profit organization that brings together volunteers to create new, African storybooks that anyone may freely translate and distribute.

⁹ CODE Ethiopia has begun to release its storybooks under a Creative Commons licence. Most of its books are print-based.

¹⁰ Brothers Whim releases its books under a Creative Commons Attribution licence. Downloads are free; print copies sell for a range of prices, depending on the number of copies purchased.

¹¹ Crimperbooks offers storybooks online with a Creative Commons licence at no cost.

¹² Little Cree Books focuses on designing supplementary reading material (in the Plains Cree dialect) for children who do not speak Cree as a first language.



- PanOpen¹³ is a learning platform founded exclusively on OER. It allows each institutional user a range of services, including the options of curating their own library of OER titles and customizing content for their particular curriculum and learning objectives. It rewards stakeholders with a revenue-sharing arrangement. Academics are incentivized to provide resources and for access to content and open source courseware and tools, while students pay far less than they would otherwise spend on textbooks. Local content creation organizations in early literacy could consider partnering with platforms like Storyweaver and ASb based on a similar business model.
- **Printing and distribution**
 - Print on demand (POD) is a book distribution system or process whereby individual copies or small numbers of books are printed in response to orders, printing the exact quantity required.
 - Developments in digital inkjet printing mean that printers are becoming faster and more reliable, while producing better print quality.
 - Hybrid printing involves the use of two different printing technologies in one print job. This allows publishers the option of choosing which technology to use, depending upon the number of copies, deadline, quality level, and other customer requirements.
 - Direct-to-consumer distribution usually involves the Web used in combination with social media to enable authors and publishers to market their titles directly to consumers, thereby increasing royalties because a large portion of the distribution chain is eliminated.
 - Automatic replenishment is an inventory management model in which small numbers of books are stored in a warehouse, with reprints triggered automatically when stocks run low. The publisher only pays for the printing of each copy when it ships out of the warehouse.
 - Radio-frequency identification (RFID) is a broad term for technologies that use radio waves to automatically identify people or objects. This technology allows for real-time accurate tracking capabilities, allowing better visibility and control of inventory.
 - Fulfilment centres are locations where incoming orders for books are received (from affiliated stores or locations), processed, and fulfilled. In principle, fulfilment centres servicing multiple printing and distribution requirements across different economic sectors might provide a way to begin to develop more sustainable distribution capacity in low-income countries, which could in turn reduce the costs of book distribution for early literacy.

The above are just a few examples of innovation occurring in print and distribution. What is clear from the desktop research and interviews is that printing and distribution are evolving rapidly as technologies become more sophisticated. These innovations, if combined with innovations in content creation, storage, and management, might provide creative solutions to the multifaceted challenges of early literacy reader delivery to young children in low-income countries.

WHAT ARE THE IMPLICATIONS FOR EARLY LITERACY CONTENT CREATION AND UTILIZATION INITIATIVES IN LOW-INCOME COUNTRIES?

In a context in which digital disruption and open licensing have enabled a disaggregation of the traditional publishing value and supply chains, *project planners should include dedicated streams of funding to support local content creation, independent of the focus on printing and distribution of that content.* There are no traditional market mechanisms for sustainable investment in the creation of content for local-language early literacy materials in low-income countries, so creation of this content depends exclusively on investments either by governments or donor agencies. *Planners thus need to consider not only achieving specific project outcomes but also supporting sustainable creation of local capacity in the various related components of the early literacy materials value network, in order to reduce wastage and loss of local*

¹³ PanOpen. (n.d.). Retrieved 23 July 2016 from <https://panopen.panopen.com>



capacity after projects are completed. In addition, local publishers and NGOs cannot always meet donor tendering or reporting requirements, even though the quality of their output is excellent. One size cannot fit all, and planners should be cognizant of these constraints.

The use of online content creation tools and workflows means that *content creation teams (authors, illustrators, editors, and language experts) no longer need to be located in the same geographical space or use the traditional linear workflows of the old publishing value chain.* This allows content creators in low-income countries to be actively involved in developing early literacy materials, even when their teams lack the full range of skills required to produce high-quality reading materials. If online workflow systems are designed carefully, the process of establishing dispersed content creation teams can be used cost effectively to provide ongoing professional development support to local publishing companies, NGOs, and other content creation organizations and individual experts; their capacity in developing early literacy materials can be built and can be augmented where required with use of experts from other countries.

Although some of this capacity development may initially require face-to-face interaction through, for example, story development workshops, capacity development support can thereafter be provided on an ongoing basis through online collaboration and interaction. For this to work successfully, though, governments and donor agencies alike will need to see development of local content creation capacity as a valuable outcome in its own right, rather than being fixated on short-term targets of numbers of readers created, translated, and/or adapted in specific languages.

Thus, *disaggregation of the traditional publishing supply and value chains enables integration of new players into the content creation component in early literacy.* Building literacy in local languages is important both for educational purposes and for its longer-term value in building capacity that can develop locally relevant cultural industries in low-income countries. This is important because often these cultural industries have been systematically undermined and undervalued for many years. Thus, targeting local content creation capacity in early literacy should be seen as part of a broader project of building sustainable publishing capacity for local languages in all sectors.

Digitization of content, combined with use of open licensing, enables rapid, cost-effective creation of new content. The examples of Storyweaver and ASb have illustrated how online content creation tools, when combined with openly licensed access to text and illustrations from existing stories, can be used to create ‘new’ stories very cost effectively, thereby allowing for a proliferation of content at a relatively low cost. Importantly, these examples are only scratching the surface of what might become possible if the underlying text and uncompressed illustrations from stories can be more seamlessly transferred between different content creation platforms without requiring manual processes of sharing. This could unlock exponentially more access to high-quality source materials that can be instantaneously shared globally.

Online content sharing tends to focus on completed resources. This is useful when combined with access to online tools for story adaptation and translation – but it may be more beneficial to share the *underlying assets* needed to adapt stories and resources outside of the platforms themselves, making available the text and images (i.e. the assets) of the stories for automated importing into other people’s platforms and content creation tools. *Thus, if the somewhat outdated, expensive notion of maintaining centrally curated content repositories can be replaced with that of networked platforms of content creation and sharing, this can help to shift spending to local content development initiatives,* thereby enhancing their sustainability and helping to further reduce their content development costs. And, if networked platforms such as Storyweaver and ASb embrace open source software, open data standards, and open data-sharing protocols, their investments can enable new content creation agencies to harness these platforms and tools, thereby joining a global network of early literacy materials development and sharing at very little cost.

Online is efficient and cost effective, but young children also need and want access to print. One successful way to improve the reading achievement of children in low-income countries is to increase their access to print. Data from the United States indicate that communities ranking high in achievement tests share some common factors: an abundance of



books in public libraries, easy access to books in the community at large, and a large number of textbooks per student. Furthermore, the only behaviour measure correlating significantly with reading scores is the number of books in the home. An analysis of a national data set of nearly 100,000 United States schoolchildren found that access to printed materials was a critical factor impacting on acquiring reading skills.¹⁴ The key is to get books (either digital or print) into the hands of children who need them the most and take full advantage of the digital disruption and open licensing possibilities discussed in this report.

Open licensing poses threats to nascent content creation organizations, whether they work in print or online, if it is not implemented responsibly. Responsible implementation involves investments in content creation being accompanied by supporting local content creation agencies to develop sustainable new business models that can extend beyond both content creation and early literacy. It may also require long-term commitments to those agencies to support ongoing content creation in early literacy, given that there are often no sustainable sources of income beyond donor funding.

Disaggregation of the early literacy materials value network enables investments in local printing and distribution capacity that does not only service literacy or education. Reports on early literacy have often noted that the absence of up-to-date printing technologies in low-income countries drives up the cost of printing and distribution of early literacy materials in those countries. This problem is worsened when procurement of services relies on traditional publishing supply chains, because tenders can only be won by companies that have the skills and capacity required to manage that supply chain. However, in the same way that digital disruption enables the drawing in of new market players in content creation, so too will it enable the use of printing and distribution services from organizations that might service multiple economic sectors within a country. Where *openly licensed materials break the monopoly on who can subsequently print the materials*, this enables investment in local printing and distribution capacity that, with proper business planning support, can remain sustainable after the conclusion of the literacy/education project; for example, by providing printing and/or distribution services for multiple government and business requirements.

Careful consideration should be given by government funders and donor agencies to how best to leverage the many opportunities created by digital disruption and open licensing in the design of literacy initiatives and the subsequent procurement of services. *Continued investment in traditional publishing value and supply chains, especially for initiatives operating at a large scale, is likely to prejudice procurement processes in favour of large, international companies at the expense of growth and development of sustainable local capacity.* In addition, focusing exclusively on short-term targets – e.g. numbers of storybooks distributed – is unlikely to support the sustainable development of this local capacity, despite its obvious importance in creating compelling reading materials in local languages for young children. Thus, *more flexible procurement mechanisms are needed, to draw in local players without proliferating administrative bureaucracy either for the funders or the funded.* The importance of building and maintaining local capacity beyond individual short-term project objectives cannot be overemphasized. Several interviewees noted the wastage that typically occurs, as the following quotation illustrates:

The wastage, I believe, in terms of capacity is often due to the fact that so many bilateral and multilateral investments try to sidestep the business of publishing and fund the creation and distribution of a single print-run within the project or within the Ministry, with little thought to ongoing supply.¹⁵

Responsible donor spending, when requiring the use of open licensing, should be accompanied by processes intended to help local players to think through how to harness open licensing within the framework of viable new business models, in a context where those business models are not yet well understood or fully developed. In Sub-Saharan Africa, the publishers included in this report tend to produce storybooks more out of a sense of commitment than a profit motive.

¹⁴ Scholastic. (n.d.). Access to Books. *Family and Community Engagement Research Compendium*. Retrieved 14 March 2016 from <http://teacher.scholastic.com/products/face/pdf/research-compendium/access-to-books.pdf>

¹⁵ Scott Walter, personal communication to Lisbeth Levey (18 May 2016).



Finally, this research revealed instances of organizations unnecessarily duplicating the efforts of others, while perhaps being unaware of each other's work. Likewise, there are parallel resources that could be brought to bear in enhancing the efficiency of initiatives in the field of early literacy. This is especially true of training materials. For example, various organizations have written training materials for authors, illustrators, and teachers, but often such resources are only available to the groups with which they work. Other organizations are more open; for example, ASb has prepared a *Guide for Making and Using Stories*, which is available online under a Creative Commons licence.¹⁶ In addition, the Osu Children's Library Fund has a guide on establishing community libraries,¹⁷ and CODE Ethiopia has prepared its own librarian training materials, which include modules on general principles, library programmes, reading promotion, and literacy/learning support.¹⁸ As a start, organizations producing resources closed to outside readers might be encouraged to make them freely available. It would also be helpful to have a place to mount information about available guides, including those identified through search engines, and provide links to them. *Collaboration among groups and documentation of appropriate resources would enhance efficiency and expand the quality of efforts already under way.*

¹⁶ African Storybook. (n.d.). Retrieved 17 April 2016 from <http://www.africanstorybook.org/>
(Go to the ASb home page, click on help and notes. You will be referred to the Guide.)

¹⁷ Osu Children's Library Fund. (n.d.). *How to Set Up Community Libraries for Children*. Retrieved 17 April 2016 from <http://www.osuchildrenslibraryfund.ca/wp-content/uploads/2010/01/How-to-Set-Up1.pdf>

(There is no licensing information, but a note at the end of the document tells readers to feel free to copy it.)

¹⁸ CODE Ethiopia. (2013). *It Takes a Village to Raise a Reader*. Retrieved 14 May 2016 from <https://codelibraries.wordpress.com/>

