

A young girl with dark hair in a ponytail, wearing a yellow shirt and a pink beaded bracelet, is seen from behind with her right hand raised, pointing upwards. She is in a classroom setting. In the background, a teacher with blonde hair wearing a red and black plaid shirt is visible, along with other students and a yellow-framed whiteboard.

REDSTONE | OPEN

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Seeking a sustainable OER ecosystem

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Executive Summary

In recent years, the collection of open educational resources (OER) has expanded rapidly in K-12 and higher education. Philanthropy has invested heavily in OER because of its exciting potential to meet the needs of diverse learners, accelerate pedagogical innovation, engage the community, and lower costs.

As the collection of available OER – the OER commons – has grown, a collection of institutions and organizations that contribute to and draw on the commons has developed around it. Sustaining this “OER ecosystem” of content and stakeholders that transform the content into innovative approaches in the classroom to improve student experiences is vital to realizing the potential impact of OER. To inform this report, we conducted over 20 stakeholder interviews, as well as a literature review of OER and other open-driven industries.

For the OER ecosystem to be sustainable, users, organizations, and governments must be motivated to contribute improvements to the available resources. Key motivators include values (positive feelings derived from contributing, supporting the community, helping students, sharing knowledge, etc.) and incentives (payment, attribution/recognition, etc.). Each of these motivators is important but probably insufficient by itself to sustain the OER commons. Our research and interviews indicate that a sustainable ecosystem will likely draw on both the values- and incentive-driven perspectives.

THE OER ECOSYSTEM

We use the term “OER ecosystem” to refer to the combination of underlying content and the individuals, institutions, and organizations that contribute to and use that content to advance teacher practice and student learning.

This paper explores both values- and incentive-driven solutions to core challenges to sustainability. As OER development and distribution become more common, new challenges are likely to arise that focus on effective use and revision of existing content. Five core challenges identified include:

- 1.** Creating and refreshing standards-aligned K-12 content or full-course higher education materials is a time- and knowledge-intensive endeavor
- 2.** OER adoption in higher education requires institutional buy-in from administrators and, particularly at research institutions, shifting norms and incentives to encourage openness
- 3.** OER adoption is not yet at scale in traditional distribution channels
- 4.** Quality content does not necessarily lead to improved student outcomes on its own
- 5.** In international contexts, OER risks devaluing content development and distribution in local markets, crowding out local authors

Executive Summary

Despite recent active philanthropic investment in OER development, which has helped to spur OER's mainstream growth, the source of capital for future development and distribution is uncertain.

Looking ahead

Looking ahead, sustainability will require a shared focus on OER's potential impact on teacher practice and student outcomes, as well as balancing the interests of all four stakeholder groups: OER users and advocates, organizations, government, and philanthropy. For OER users and advocates, this may mean accepting the inclusion of organizations driven by profit or other factors. For organizations, it may mean exploring varied revenue models. Governments may need to shift focus to educator training, and philanthropy may seek to expand efforts such as research, advocacy, and collaboration.



Many educators believe that an OER commons represents the future for instructional materials – inexpensive, customizable, and shared by the community. However, challenges created by the OER commons must be addressed so that its progress can continue. This paper provides insight into the roles of institutions, organizations, and practitioners, and positive actions necessary to promote the sustainability of this ecosystem and to advance teaching and learning with OER.

Introduction



Open educational resources (OER) have gained popularity and demonstrated their early potential to improve student outcomes through rigorously developed, customizable materials at low cost. As a result, it has become increasingly important to consider the long-term viability of the ecosystem of content and organizations, institutions, and people who create, share, and use OER. The following report is based on stakeholder interviews and a literature review of OER and other open-driven industries. It presents a definition of sustainability for the OER ecosystem and a series of challenges and potential solutions to realizing a sustainable ecosystem. While the report considers international contexts, examples are largely focused on the US context of K-12 and higher education procurement practices and Common Core standards alignment.

A sustainable ecosystem of OER content and stakeholders

Overview

Over the past six years, the selection of available OER has grown in quality and diversity. The OER commons is populated not only with full-course, standards-aligned K-12 curricula but also with full-course textbooks and ancillary materials for higher education. OER, or the “OER commons” in the context of this report, refers to the full set of available openly licensed content.

As the OER commons has grown, a collection of institutions that contribute to and draw on the commons has evolved around it. Those entities play an essential role in realizing the potential value of OER because content alone cannot change student outcomes. Rather, it is the institutions that spur adoption, quality implementation, and educator engagement that bring the content to life. Looking ahead, sustaining the combination of underlying content and the stakeholders that develop and use that content – referred to jointly as the “OER ecosystem” – is essential to ensuring that new and revised content continues to flow into the commons and institutions can effectively use it to improve teaching and learning.

The OER commons

The OER commons encompasses the following types of content:

- Instructional materials, reading materials, or other educational supplements that are openly licensed with Creative Commons licenses and free for use by users and institutions
- Content that is available for reuse and remix
- A range of types of content from stand-alone units or lessons to full-course materials, including assessments, professional development materials, and other supplements
- Content that is regularly refreshed and iterated upon to improve quality, support underserved populations, and improve the diversity of high-quality content to reach a wide variety of learners

Key benefits

A well-populated OER commons, with the support of the institutions that implement and innovate on OER content, offers benefits to students, educators, administrators, and innovators in education. At its core, OER is a tool to improve educational outcomes and, as such, it can offer four key benefits:

- 1. OER enables free use by students, educators, and institutions.** It can support all forms of learning (including self-guided or supplementary learning) from elementary through higher education, both in the US and abroad. Whole curricula (e.g., EngageNY) can be adopted free of charge by districts (if they cover printing costs), freeing up resources for other investments. In higher education, faculty can adopt open courses free of charge, and students can take classes for credit without purchasing a textbook. Internationally, OER includes digital and print books for students who may lack sufficient reading resources and enables low-cost translation and modification for cultural appropriateness to increase access for speakers of underserved languages.
- 2. Open licensing can help the field meet the needs of a more diverse set of learners and react to new pedagogical approaches quickly.** The ability to remix and reuse content allows educators to customize content for students of different cultures, backgrounds, abilities, and needs. The best pedagogical practices and customizations can be circulated throughout the marketplace with open licenses that enable further reuse and remixing. Practices and customizations can also be improved upon and shared back through the same medium to provide immediate feedback for developers and adopters who can adjust in real time. The result is a more diverse and inclusive network, in which individuals can share their expertise and experience and can engage with instructional materials and the supports that accompany them.
- 3. OER can help accelerate educational innovation – from content development to pedagogy.** Organizations implementing learning management systems (LMS) and the development of new platforms, professional learning, assessments, and other innovative products and services can populate them with and align them to the very best openly licensed content. Teachers can elaborate on and customize materials to enhance relevance and impact for a diverse set of learners.
- 4. Openness can increase community engagement and enable better teaching.** Some educators may be more trusting of openly licensed content because it invites engagement, feedback, and customization. On the other hand, some educators are distrustful of nonprofit curriculum developers that lack the name recognition and standardization of major publishers. OER has the potential to explicitly position teachers as experts and key knowledge holders in their profession by empowering them to customize content for their students. Realizing this potential impact will require further research and advocacy in the coming years. As OER awareness increases and becomes more mainstream, perceptions of quality and valuation of adaptability may increase as well.





Stakeholders

- **OER users and advocates** include all educators, students, and early adopters. This group includes philosophically-aligned schools (and their administrations) that rely on either individual faculty or an overarching state or district to provide content. This also includes educators using OER textbooks as replacements for standard textbooks.
- **Organizations** are nonprofit or for-profit enterprises that create OER; create services and tools that enable, rely on, or host OER; or distribute OER through traditional commercial channels.
- **Government** includes national governments, states, school districts, and policymakers that procure materials; select curricula; allocate resources for curriculum development, procurement, and support; or enact open-license policies on publicly funded educational resources.
- **Philanthropy** includes foundations that fund OER development or support its adoption, domestically or internationally, in K-12 or higher education.

Figure 1 matches stakeholders in the OER ecosystem with their primary roles.

Figure 1

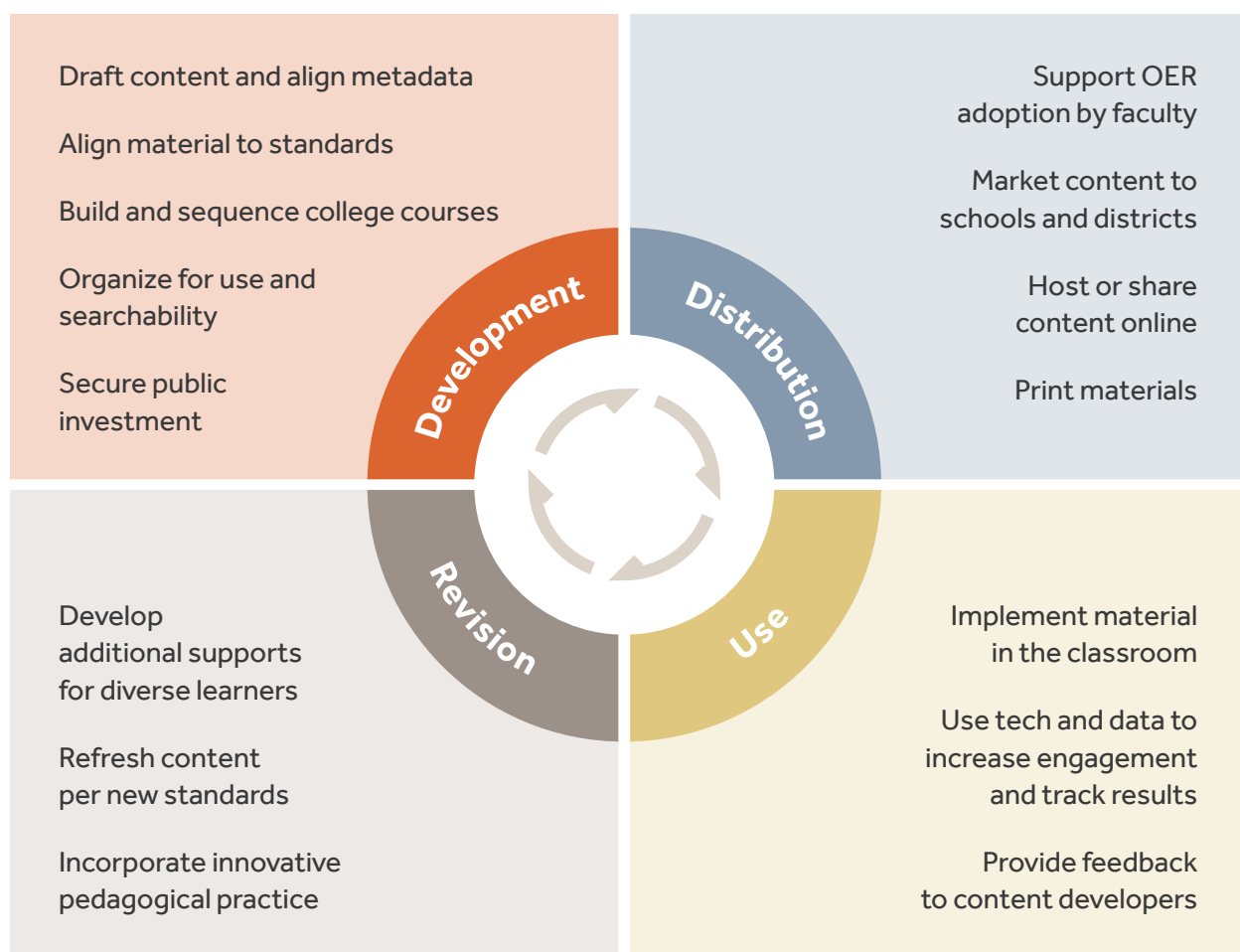
STAKEHOLDER ROLES IN THE ESSENTIAL PROCESSES OF A SUSTAINABLE OER COMMONS

Stakeholder	Current ecosystem role(s)
 USERS & ADVOCATES	Develop and revise locally created content Use professionally developed materials
 ORGANIZATIONS	Develop and distribute content and steward legal and technical tools to support open content and practices Support use and revision with professional learning services and customization tools
 GOVERNMENT	Support distribution and use through content and professional learning procurement Support development and revision by setting standards, enacting open license policies on publicly funded content, funding/adopting new curricula, and engaging teachers to create new content
 PHILANTHROPY	Fund development and distribution of full-course, standards-aligned content Support advocacy to bolster use and professional learning

“Sustainable,” in the context of the OER commons, means that the cycle of content creation, distribution, use, and revision is perpetuated by the participants in and beneficiaries of the ecosystem. Figure 2 outlines the four processes to sustain the OER commons.

Figure 2

THE ESSENTIAL PROCESSES OF A SUSTAINABLE OER COMMONS



Two possible visions

Overview

Experts recognize the power of incentives and values to drive the stakeholders in the ecosystem who replenish and rely upon the commons

A sustainable ecosystem is likely to be produced by a combination of two visions for why and how ecosystem actors will replenish the OER commons. One relies on **values-driven** users and advocates motivated to serve as OER stewards, and the other relies on the **economic incentives** of users, organizations, and government. These two visions are not at all incompatible, but sometimes create tension because OER is free to users, and, like other rigorous content, time-consuming and often expensive to produce. Specialists who make high-quality educational content therefore need to be incentivized, either through payment or other means to contribute their content to the OER commons.

One vision emphasizes values as a primary driver of the ecosystem

This vision emphasizes establishing norms that support sustainability through community, democracy, and openness. A few frameworks have been developed to describe the vision of a values-driven ecosystem. For this report, it is not the framework itself that is most important, but the idea that the OER commons can be sustained by an intrinsic motivation and commitment to openness.

One example, the book *Made with Creative Commons* shares a vision for community-driven contribution and attribution to shared resources. According to the authors,

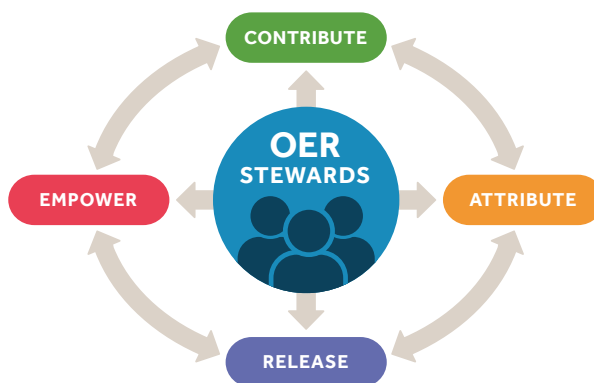
"It takes a conscious effort to foster the context for real sharing, based not strictly on impersonal market exchange, but on connections with the people with whom you share—connections with you, with your work, with your values, with each other."¹

The authors invite creators and users of the commons to cultivate community intentionally, make personal connections, trust in others, and be open and accountable about their decisions.

1. Stacey, Paul, and Sarah Hinchliff Pearson. "Made with Creative Commons." <https://creativecommons.org/use-remix/made-with-cc/>

Another example, the CARE (contribution, attribution, release, and empowerment) framework, written by a small group of OER advocates, asserts that adequately appreciating contributors, providing tools to share OER, and empowering students and educators through a commitment to meeting the diverse needs of all learners will create the conditions to encourage the participants in the ecosystem to invest in and contribute to the OER commons.³ The CARE framework does not rule out revenue generation, but it emphasizes the role of users, government, and nonprofits as the lead content contributors. It also positions revenue generation as a secondary consideration, bounded by a values-driven commitment to the OER commons.

Figure 3
THE CARE FRAMEWORK²



In a fully values-driven model, OER users – and potentially other content developers – contribute back to the commons because of a common belief in the promise of OER to improve student learning, creating a cycle of iteration and innovation that does not rely on the market to incentivize open practices. This approach emphasizes community, public investment, and the importance of values as a core component for growth – consistent with traditional economic theory about commons management.⁴ Thus, it would need to create an environment that encourages participation by all actors, including for-profit and non-profit market actors, through positive, rather than negative reinforcement.

A second vision places primary importance on drivers of revenue generation to sustain paid developers (including teachers) who create OER

The second vision is based on a belief that values alone are unlikely to drive sufficiently high quality of new material, revisions, and improvements to sustain the OER commons without the work of other specialists and professionals (e.g., coders, visual designers, marketers, and educators). Those focused on aligning incentives to drive contributions to the commons emphasize that properly aligned incentives neither require nor expect behavioral change (such as the development of new content to contribute to the commons) from users to sustain OER.⁵ This approach relies on fee-based products

2. Petrides, Levin, and Watson. "Toward a Sustainable OER Ecosystem: The Case for OER Stewardship." 4 March 2018, <https://careframework.org/>

3. Petrides, Lisa, Douglas Levin, and C. Edward Watson. "Toward a Sustainable OER Ecosystem: The Case for OER Stewardship." 4 March 2018, <https://careframework.org/>

4. Stacey, Paul, and Sarah Hinchliff Pearson. "Made with Creative Commons." <https://creativecommons.org/use-remix/made-with-cc/>

5. Jacobs, Brian. "OER Beyond Voluntarism." 28 August 2014, <https://www.insidehighered.com/views/2014/08/28/open-educational-resources-movement-needs-move-beyond-voluntarism-essay>

and services to generate revenue that in turn allows developers to invest the time required to achieve levels of OER quality necessary for widespread adoption and effective implementation. These fees can also be used to pay for the time of educators who would likely need to dedicate additional hours to content development and whose time is often undervalued.

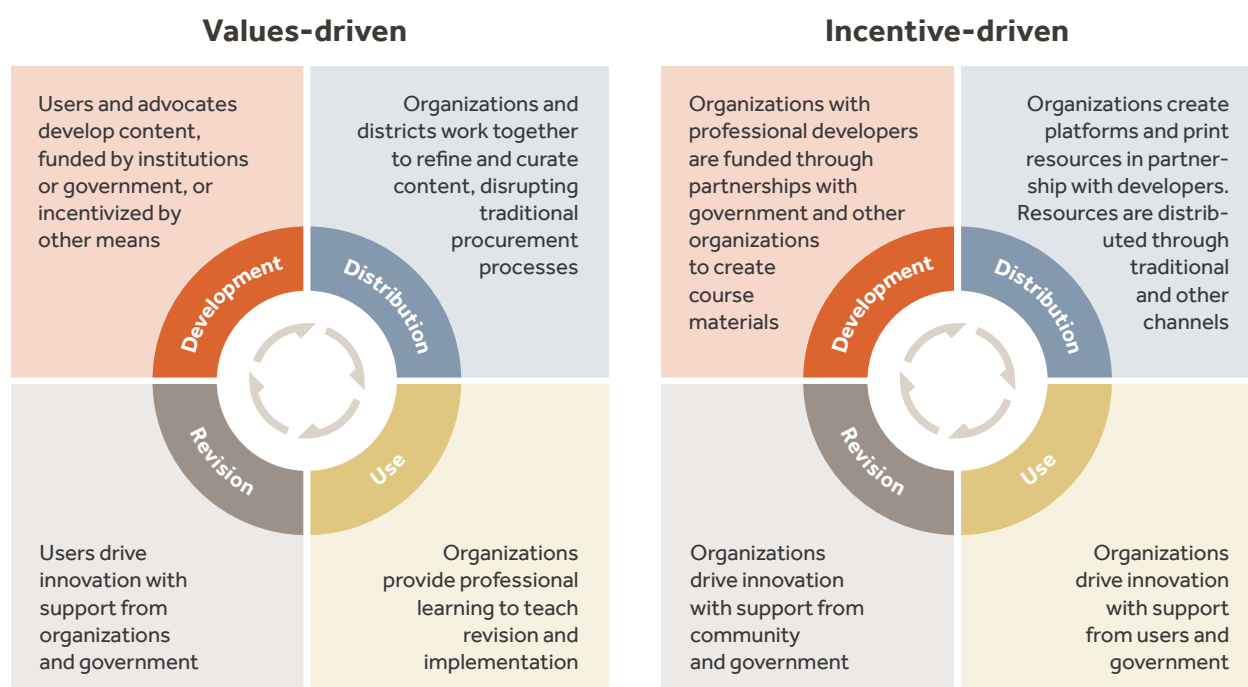
Adherents to this view acknowledge that users can play valuable roles in revealing opportunities for improvement, articulating underserved needs, or piloting solutions, but they consider those roles as supportive of specialists who would ultimately be responsible for OER development and distribution. This approach emphasizes the marketability of OER and the need to pay for quality for the OER commons to achieve its desired impact.

A middle ground is both possible and necessary

It is valuable to name the underlying philosophical and practical tensions, as these can help frame sustainability models for the ecosystem and can shape discussions in the field. Values- and incentive-driven ecosystems have the same components and players, but the roles of different stakeholders and the activities they might pursue vary (Figure 4). Likely, a sustainable ecosystem will draw on both visions. Figure 4 takes each vision to its logical extreme to define the end points on a continuum.

Figure 4

TWO ALTERNATIVE VISIONS OF THE ECOSYSTEM



A viable ecosystem will draw on both values and incentives to achieve sustainability and impact. In fact, these two forces often work in tandem. For example, an organization responsible for developing content might choose to sell professional learning services, LMS integration, or licensed custom content to fund the continued development and revision of its high-quality OER content. This organization may be motivated by the potential impact of its contributions to the OER commons and the value of its services, but rely on the incentives of the marketplace (paid services) to sustain itself and realize its broader mission (new, high-quality OER content). Alternatively, a large school district could use its existing curriculum budget to issue a request for proposals open to the entire marketplace (both for-profit and nonprofit) and make openly licensing the final product a criterion for competing. In this scenario, the developer receives an incentive from the district to create the content (payment), but it shares the final product with the field as OER to align with the district's values.

Solving core challenges

Overview

Five core challenges to sustainability stand out, primarily in the development and distribution stages. The last several years have witnessed remarkable philanthropic and government investment in OER development, which has helped spur OER's current rapid growth in the mainstream. It is perhaps not surprising that these unique investments now raise questions about the source of the next injections of capital for ongoing development and distribution. If the ecosystem can find ways to sustain the development and distribution of high-quality OER at system-wide scale, challenges may shift to include a greater focus on use and revision. As the field explores these questions, philanthropy can consider the extent to which it values a robust, refreshed set of openly licensed content to populate the commons in the long run.

These five challenges are described below, along with their corresponding ecosystem process and potential solutions. Solutions span the continuum from incentive- to values-driven so that the ecosystem can benefit from both concepts.

Challenge 1

Development and revision: Creating and refreshing comprehensive standards-aligned K-12 curriculum or full-course higher education materials is time- and knowledge-intensive

In both K-12 and higher education, the best standards-aligned OER content is created by paid developers (including teachers) with dedicated time and resources. Those same developers are likely to create refreshed and revised versions of their content. However, many of the recent OER developers have not yet found investors willing to capitalize future open investment, and thus maintaining an open license for new and revised content could become challenging. Additionally, developers require technical expertise to create the supports and tracking capabilities that can increase the usability and interoperability of the content. Thus, it may not be feasible to rely solely on educators to contribute to content design.

Below are five possible solutions that consider alternatives to philanthropic grants (relying on governments, organizations, users and advocates, or subsidized investment – or a combination) to support new OER. Some solutions are better tailored to the K-12 procurement process, while others could apply to higher education or both:

- **Government funding: States and districts collectively fund professionally developed new OER curricula.** A state or a consortium of districts could direct funds that would typically be used to fund textbook purchases to pay for OER materials that align with state standards or meet other specifications (e.g., English Language Learner [ELL] supports). For example, districts like Detroit and Memphis that have already procured OER curricula through Open-Up Resources could use similar resources to fund the development of customized content, such as ELL materials, assessments, workbooks, and other supporting tools. In higher education, New York has allocated \$8 million to OER initiatives at State University of New York (SUNY) and City University of New York (CUNY) to reduce student textbook costs.⁶ These resources can fund the development of OER versions of high-cost textbooks.
- **Government and institution funding: Universities award mini-grants to faculty for content development or adaptation.** For example, the state of Georgia has had success with mini-grants of roughly \$10,000 to faculty members to customize or author a textbook. Their \$2.1 million investment in “Textbook Transformation Grants” will save students an estimated \$26.4 million.⁷
- **Organization and government co-funding: Education technology companies that benefit from quality OER partner with districts to invest in new content.** Organizations developing content could grant partners first-to-market benefits in exchange for investment in new materials. For example, a platform provider could partner with a handful of its largest, most innovative district customers to invest in new content. The developer may self-fund a portion of the cost in exchange for revenue-sharing agreements with the technology company (e.g., an LMS provider) and an agreement to share all new material as openly licensed. The platform provider could invest so that the development process and new content are aligned to client needs and platform specifications. While the content would ultimately be openly licensed as OER, all the players involved would gain from the arrangement.
- **User-led funding: States or districts provide professional development to train a specialized group of educators to create new content.** For example, professional learning providers could partner with districts to host summer workshops for supervised curriculum development. Districts could send master teachers to learn the fundamentals of content creation and develop or revise a unit with professional guidance. Teachers could then continue to develop materials together using the skills they build and the model they create at the workshop.
- **Subsidized investment: Philanthropic foundations create a Program-Related Investment (PRI) fund to develop new materials.** A full set of K-12 OER in eight subjects could require approximately \$160 million dollars to create, based on interviewees’ rough estimate of \$5–10 million per subject per grade band, recognizing that the cost will vary based on complexity, pedagogy, number of grades, volume of ancillaries, etc. However, new content would only be neces-

6. “Governor Cuomo Announces \$8 Million for Open Educational Resources Initiative at SUNY and CUNY to Cut High Cost of Textbooks.” 16 May 2018. <https://www.governor.ny.gov/news/governor-cuomo-announces-8-million-open-educational-resources-initiative-suny-and-cuny-cut-high>

7. Gullings, Kyle. “Open Educational Resources (OER) in the Music Theory Classroom: A Curricular Redesign Travelogue.” <http://flipcamp.org/engagingstudents5/essays/gullings.html>

sary on a rolling basis (perhaps \$5–10 million per subject in each grade band). A revolving fund of \$100 million could fund creation of new content, collect returns, and replenish itself before the next phase of development in each subject was needed.

Challenge 2

Distribution: OER adoption in higher education requires institutional buy-in from administrators and, particularly at research institutions, shifting norms and incentives to encourage openness

Higher education adoption requires administrative, technical, and librarian support to help faculty champions engrain OER in standard course design. Faculty have limited time, and OER adoption often requires incentives, as well as educating faculty about the OER options available. Communicating the strong link between OER and improved student outcomes can build the institutional buy-in to normalize OER at colleges and universities. Solutions approach the problem from three levels – the administration, the disciplines, and the students:

- **Engage the administration: Use data to demonstrate the impact of openness on retention and graduation.** Services like those offered by Achieving the Dream can help colleges track retention and identify factors, such as high textbook costs, that cause students to drop out of the pipeline. Wraparound supports through online platforms (like those offered by Lumen Learning and EdReady) can increase student success rates in core classes. Improved tracking of these factors can help administrators understand the impact that OER can have on their broader mission.
- **Target high-impact disciplines: Disciplines with high enrollment, expensive course materials, and motivated faculty associations may be more open to low-cost alternatives for their students.** Disciplines or institutions can identify vetted curricula (e.g., from OpenStax) and encourage faculty to adopt the content as they would traditional materials. For example, psychology, math, and physics all have high enrollment and expensive textbooks and are likely to have quality content on open repositories.
- **Engage the students: Create student advocacy campaigns about the advantages of OER.** As the primary audience for OER, students can be powerful leaders in shifting institutional practices and policies. Groups like Student Public Interest Research Groups (PIRGs) organize college students around pressing issues, such as college affordability, and have led successful campaigns for OER at institutions around the US.⁸

8. "Make Textbooks Affordable," 2017, <https://studentpirgs.org/campaigns/sp/make-textbooks-affordable> (accessed June, 2018)

Challenge 3

Distribution: OER adoption is not yet at scale in traditional distribution channels

Limited distribution channels reduce the pace of OER adoption and create challenges for organizations that need to reach greater economies of scale to become financially self-sustaining. Adoption at scale would also increase the number of students who could benefit from OER and the diversity of materials in the ecosystem. Organizations can increase their reach through partnerships or direct outreach. Alternatively, advocates and early adopters could lead grassroots efforts to increase OER adoption rates. For any of the solutions below, content format (print or digital) affects the cost of achieving scale as well as the usability of and comfort the users have with the content. The following three solutions provide ways of expanding the reach of OER and could apply to either print or digital, recognizing that larger scale is more challenging with print resources:

- **Partnerships: Content producers partner with organizations that serve traditional channels.** For example, a content producer with a respected name could enter a branding agreement with a distributor. The content developer could vet distributors for quality to ensure the integrity of its brand, and the distributor could use the developer's reputation to sell materials through traditional channels (e.g., curriculum fairs) and receive early access to updated content.
- **Direct outreach: Professional development providers serve as ambassadors,** providing sessions to schools at low or no cost that introduce the material and the potential benefits of OER. Organizations could provide workshops that demonstrate the adaptability and quality of OER. These sessions would serve as a marketing opportunity for providers and an opportunity to educate faculty and administrators about the benefits of OER.
- **Grassroots: Leaders among OER users and advocates recruit educators who have adopted OER curricula to be spokespeople and ambassadors** to other educators in their schools or districts. Leaders could also draft op-eds, campaign on social media to increase OER awareness, and use conferences to explain the value of OER to the broader educational community.

Challenge 4

Use: Quality content does not necessarily lead to improved student outcomes on its own

As some interviewees noted, educators require training and support to implement new curriculum effectively and to customize it for their students without reducing rigor. K-12 and higher education present unique challenges for improving pedagogy. In K-12, curriculum-aligned professional development would ideally teach effective customization so that teachers could translate quality content into educational outcomes. Scaling OER content without accompanying professional development risks

jeopardizing the potential benefits of the high-quality materials. In higher education, open pedagogy has the potential to elevate student engagement and change not only the cost of the content but also the way professors engage with their students. Three solutions could strengthen the link between high-quality OER and student outcomes:

- **Provide high-quality coaching for K-12 educators: Professional service organizations coach teachers to implement high-quality OER with appropriate customization and fidelity to the pedagogical intent.** To fully realize the potential benefits of OER, teachers must effectively implement the curriculum in classrooms. However, this can be especially daunting when OER curricula reflect major shifts in pedagogy (e.g., from traditional practice to student-directed, project-based learning). Professional development can simultaneously improve implementation; increase the “stickiness” of content in classrooms, schools, and districts; and provide a source of revenue for organizations.
 - **Engage students with open pedagogy: Students can take ownership of content and engage deeply with the field through content development.** For example, faculty can have students create Wikipedia pages or write assessments as assignments to engage students in a way that improves the next iteration of the course and teaches the next generation of educators about the benefits of OER.
 - **Partner with professional development providers: Curriculum developers serve as validators of professional development programs.** For example, the developer could sell certifications that signal to districts that a professional development provider is properly vetted and aligned with OER curricula.
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Challenge 5

Development and distribution: Internationally, OER risks devaluing content development and distribution in local markets, crowding out local authors

International aid organizations and foundations committed to improving literacy via culturally and linguistically relevant educational materials have invested millions of dollars in platforms and resources that are easily shared and accessed around the world. The challenges that these organizations face echo those experienced in the United States and Canada. For example, the challenge of valuing and incentivizing content creation is particularly acute in underdeveloped publishing markets where authors and publishers are in short supply. Elsewhere in the report, we explore how to fund content creation domestically, but the challenge of doing so in countries without mature publishing industries, and that face an added challenge of producing content in a wide variety of languages with limited distribution capacity, warrants separate consideration. Two solutions can help address concern about devaluing local content development in the international context:

- **Direct investment: International investments fund locally developed OER content, in addition to repositories and platforms.** Like in developed markets, content creation is a high-skill task. Bilateral and multilateral aid organizations can provide funding to local higher education institutions and nonprofits to produce culturally relevant materials in local languages to be printed and distributed locally.
- **International partnerships: Local printers, platform providers, and distribution channels partner with organizations from other regions.** For example, in developing countries, content creators could use partnership models like those used in North America, offering customization to meet local needs. That depends, of course, on the ability of local markets to develop around value-adding services such as printing, educational platforms, and sales and marketing (in competitive markets).

Implications for stakeholder groups

Overview

Motivations for maintaining the integrity of the OER commons vary across stakeholders. Some may be motivated by the potential impact on student outcomes, others by the potential market value of OER, and yet others because of an intrinsic belief in openness as a value unto itself. Regardless of their motivations, however, all stakeholders benefit from a healthy OER commons. Each stakeholder can define a role that realizes its goals (e.g., build a profitable business, increase college retention, adopt the highest-quality pedagogical content available) while bolstering the sustainability of a commodity that can improve teacher practice and student outcomes.

OER users and advocates

Determine how to be inclusive of for-profit organizations and others who may engage at different levels or be motivated by different factors

A larger community of OER users and advocates will mean greater diversity of motivations, including those who seek financial gain. Recognizing the ways in which different groups and individuals contribute to learning outcomes, to OER, and the commons will be important. For example, some users may choose to adopt off-the-shelf open textbooks without adaptation. This level of engagement can be a gateway to greater involvement (e.g., revision), or it can be the full extent of these users' capacity for engagement. Even this basic level of participation can make it possible for new, better material to reach those educators' students faster as they adopt refreshed content regularly.

At the same time, new users will need assistance in understanding the values and potential impact that drives OER, as well as how to participate in the ecosystem responsibly. A certification (e.g., Creative Commons Certificates) for schools, businesses, governments, educators, or librarians that subscribe to a set of best practices (e.g., licensing and attribution) can help new participants identify quality content and engage productively.

Organizations

Pursue varied revenue models

The most effective business models for organizations will partly be determined by the future of the education system more broadly. A transformation that sees districts and universities pursuing content development directly warrants a different model than one that works within the current procurement and faculty systems. For now, the ideas below focus on the current system.

Partnership models with a revenue-sharing agreement could support professional content developers' ability to earn money from their brands and ancillary services, generating resources to be reinvested in OER. This requires sufficient brand recognition and value that partners are willing to pay specifically for the use of the branding on otherwise free content. If well-designed, relevant, user-developed content is available, platform and professional learning providers could simultaneously vet the quality of those materials while tailoring them to fill gaps in their curated resources.

Organizations can also play a larger role in distribution – engaging with districts, states, and universities to explore how OER can meet their needs. Organizations can use relationships to build alternative distribution channels, working with districts to develop and implement content, engaging LMS providers on development, and tailoring products to varied needs.

Government

Fund new OER content and shift resources from content purchasing to teacher development

The role of government varies depending on the broader dynamics in the education system. Procuring openly licensed content can reduce the cost of curricula and increase the volume of material in the commons, but this requires a larger change in district and state policy. Alternatively, adopting low-cost curricula, particularly if they are developed by the teacher community, would facilitate (and likely necessitate) a much larger investment in professional learning.

Districts and states can learn from experiences over the past several years in places like Louisiana and Washington, DC, about how to organize and support teams of educators in curriculum development. Producing high-quality curricula with teams of educators requires planning and organization, and these efforts benefit from aligned work by professionals (like Odell Education in Louisiana and Leading Educators in Washington, DC). States and districts will need to dedicate resources to educators who become specialists in curriculum development, solicit support from outside organizations, and secure training for other educators engaged in the process.

States, districts, or higher education institutions might also partner to fund new professional course development. New courses could be openly licensed and shared as a public good to be adopted and adapted to meet diverse needs.

Philanthropy

Shift over time from funding content development to supporting quality implementation and providing a venue for collaboration between international and domestic innovators

Philanthropy can shape the future of the OER commons in the long term by moving beyond direct funding for content development to other more forward-looking roles. For example, philanthropy can shape the OER market by funding research on best practices for content development and implementation, as well as research that examines the overall impact of OER in a variety of contexts. Philanthropic organizations can support advocacy for government and institutional investment in and adoption of OER, and they can invest in innovative providers and developers of meaningful and relevant educational materials through PRIs or targeted grants. By cultivating these innovators, philanthropy can keep OER deeply integrated with the most innovative and effective pedagogy available.

Philanthropy can leverage its convening power to support collaboration between domestic and international providers and consumers to spur innovation and learning. Funders can host conferences and bring together innovators from domestic, international, K-12, and higher education to share solutions to common challenges. These events can also educate other philanthropists and governments about opportunities to advance education through OER and provide opportunities for OER users and advocates to engage directly with organizations and government agencies involved in education.

Looking ahead, philanthropy can consider how its own decisions support ongoing re-investment in the OER commons by government, the private sector, and communities of users, and philanthropic organizations can explore which aspects of the education system are compatible with a sustainable OER commons that improves education for students.

In Closing



In writing this report, we recognize that sustaining the OER commons and the surrounding ecosystem has broad implications for the education system and the markets that support it. It is possible that sustainability of the OER ecosystem requires a holistic shift in procurement practices, training, and content development that would redefine the way decisions are made in education. For example, a shift to open procurement practices and government-funded OER would point to the need for advocacy, market disruption, and policy change. In contrast, the ecosystem could develop within the confines of the current system – seeking new distribution channels, leading grassroots efforts to replace traditional publishers in existing procurement practices, and re-allocating existing district and institutional resources from textbook purchasing to wraparound supports and training.

A sustainable vision for the OER commons, and more importantly for the OER ecosystem that uses it to spur innovation and improve student experiences, must deliver on the promise of OER's potential impact on teacher practice and student outcomes. With this potential in mind, philanthropy, government, and others in the ecosystem can consider the value that an OER commons offers for educators, students and the education system more broadly and then determine how to approach the challenges and solutions described above to ensure the quality and ongoing growth and evolution of the ecosystem of innovation and student improvement that thrives on a foundation of OER content.