Pain Points and Solutions: Bringing Data for Startups to Campus

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Pain Points and Solutions: Bringing Data for Startups to Campus

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Abstract

Entrepreneurship is growing as a cross- and interdisciplinary area of focus for higher education. From patent and tech transfer offices to business, science, and engineering programs, the demand for entrepreneurship resources and support delivered via libraries is booming. Building library collections to help patrons design, launch, and run successful businesses is challenging: Market research and private equity/venture capital resources arrive at premium prices. Increasingly, these resources must interoperate with software used to clean, analyze, and visualize data. This data is often difficult to find and deploy. Restrictive, corporate-style licenses reflect that new vendors are not yet acclimated to the academic market's access requirements and licensing constraints.

This paper will share a framework for how to understand entrepreneurship in higher education and explain the types of information commonly requested by users. Such information often exists in disciplinary silos, emphasizing the importance of collaborative collection development across subject lines. The authors will explore the unique challenges to building collections that serve patrons developing new ventures. This includes collaborating with external stakeholders to fund resources that have not been traditionally purchased by libraries. Strategies for licensing data and other e-resources in this space will be discussed, including the central complications arising from universities as incubators for for-profit startups. The authors will suggest best practices for building relationships with stakeholders, developing relevant collections and services, and marketing these resources to support communities.

Introduction: Entrepreneurship in Higher Education

Entrepreneurship is a term frequently used to refer to a variety of business-related ventures, describing activities ranging from product development to thriving businesses started by an individual. Formally, entrepreneurship is defined as "a process of fundamental transformation: from innovative idea to enterprise and from enterprise to value" (Brooks et al., 2007, p. 5). Many individuals may create something unique, but entrepreneurship occurs through commercializing a product or service and achieving profit. It is estimated that up to 70% of startups fail (CB Insights, 2018). It is important that universities prepare students for the wide range of activities and skills an entrepreneur will need to succeed when starting a new venture.

While now slightly dated, the Kauffman Foundation report *Entrepreneurship in American Higher Education* (2007) provides a framework for entrepreneurship in higher education. Entrepreneurship courses are found within and beyond business schools, showing up in curricula ranging from law to STEM to arts and sciences. Students across all disciplines participate in competitions, seeking funding for new ventures or the prestige of winning a competition to attract a future employer.

Building library collections to support entrepreneurship in the curriculum and to support patrons working toward launching businesses in the private sphere is very challenging. Armann-Keown and Bolefsk (2017, p. 3) found that 83% of ARL libraries indicated that their institution identified expanding innovation and entrepreneurship as a strategic priority for the university. Since this is such a strong area of growth for academic institutions, it is necessary to expand conversations of entrepreneurship support by library staff and address key challenges related to research support and collection development.

Entrepreneurship is interdisciplinary and requires a high level of collaboration across a university's

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departments and programs. Libraries are a central place on campus where groups can come together and utilize information and data resources. However, the physical distance between a library and entrepreneurship facilities may mean most interactions with patrons occur virtually. Some libraries have reconfigured their own spaces to serve as an incubator or accelerator for student entrepreneurs, such as the Rosenfeld Library at UCLA's Anderson School of Management.

Libraries have a rich tradition of reimagining spaces and offering new workshops and services to meet emerging patron needs. However, the growing challenges associated with the data needs of entrepreneurs have not been widely discussed in the library literature.

Information and Collection Needs

While traditionally patrons have requested assistance with business plan research, contemporary entrepreneurs' requests better align with the state of venture capital funding. Students now request information and data to build businesses models, canvases, and pitch decks. The importance of data to these outcomes highlights the need for business, technical, and legal mentoring for our user communities. While there are similarities between the traditional materials purchased by libraries and data sets being offered by commercial vendors, there are also key differences that may require additional funding, skills, access models, and technological requirements.

Faculty and graduate students increasingly request access to custom data feeds and private APIs to find meaning in big data. While some librarians have assisted faculty with negotiations and acquisitions of data sets, challenging contract terms and premium pricing have limited the ability to license such content for the widest possible audience. While some libraries may contribute financially to resources that are only available to certain user populations, many public institutions have policies that prohibit expenditures that give preference to a single population. While both subscription and one-time data pull options are often on offer by vendors, neither option may allow the institution to truly own the data. Custom, one-time purchase contracts frequently have clauses limiting use and requiring confirmation that all data has been deleted by a certain date. For faculty working on articles for publication, such deadlines can be a challenge as the average time to publication for top-tier journals increases.

In some cases, data that is freely available online may be purchased through a third-party provider, because the freely available content is not able to be bulk-downloaded, coded, or operable with certain programming languages or computing environments. For example, an institution might decide to bulk purchase a publication in XML, even though the same content is freely available in individual PDFs online. The time versus funding debate occurs frequently in entrepreneurship. In addition to purchasing or otherwise identifying publicly available data sets, academic libraries now offer support for every step of the research life cycle. This includes supporting the software and skills required to clean, analyze, visualize, and publish data, in addition to the resulting scholarship.

Increasingly, traditional library resources are being used in novel ways. For example, patrons may wish to use textual content available via a library subscription without the knowledge that bulk downloading or crawling the subscription violates the license agreement. Researchers are often frustrated to learn that the traditional method of delivering information and data via an end-user database interface will not support their scholarship and may require an additional fee or stand-alone purchase. Librarians and scholars alike bristle at the idea of "paying twice" for the same material, while vendors justify product offerings based on new and enhanced functionality.

While there is strong scholarship centered on librarian efforts to support entrepreneurs with spaces and research services, less has been written about the challenges of supporting their collections needs. Inherently, entrepreneurs' research efforts are part of a process that may eventually result in for-profit revenue generation. While entrepreneurship as scholarship is deeply validated by university curriculums, the for-profit use of library resources conflicts with the vast majority of library contracts. Library contracts typically limit approved uses to educational and not-for-profit applications in exchange for deeply discounted academic pricing. Additionally, Tech Transfer offices assist university stakeholders with commercialization efforts for new products. These departments must often license their own resources to avoid violating library license agreements.

In addition to the above challenges, librarians must develop strategies to acquire unique, traditionally commercial products, thus "mainstreaming" them in the academic market. One way to address growing needs for information not traditionally purchased by

libraries, within library budgets, is to create partnerships with internal and external stakeholders. Partnerships may be temporary (intended to bring a product to campus and determine its value to constituents) or permanent (intended to balance budget challenges for libraries and academic departments). A foundational challenge of collective purchasing surrounds who will "own" and therefore manage a license agreement and the resulting acquisitions and maintenance processes. There is a fair amount of hidden labor involved, which can be further complicated by central or distributed IT requirements, procurement policies, and accounting structures. While libraries have established workflows to handle library acquisitions, there may be practical reasons for having certain contracts be processed by a particular unit. For example, business schools and research centers often have greater flexibility than the library when it comes to signing challenging contracts. While the library must say "no," a partner unit taking the lead on that same contract may be able to say "yes."

Strategies for Success

Librarians can embrace licensing and negotiation challenges to build meaningful, relevant, and cost-effective collections solutions. One such option is to move away from FTE pricing to help vendors better understand the scope of possible use at your institution. For example, letting the vendor know the size of your institution's business school and requesting pricing based on the size of that primary user group may more accurately reflected anticipated usage. While it is less than ideal for libraries to acquire resources that are limited to certain populations within an institution, this strategy may be an affordable option to acquire an otherwise out-of-budget resource. In such cases, always ask for licenses to include a provision for walk-in users, as per the CRL model license user agreements. Some vendors may not have the IT infrastructure to allow for provisioning of access to select groups, which can be used to leverage pricing for primary user group populations but afford access across all institutional IP ranges.

An additional avenue involves working with consortia to establish pricing. This is especially valuable when working with commercial vendors who do not have a strong understanding of the academic market. The Association of Business Library Directors (ABLD) has successfully worked with commercial vendors to secure academic pricing to resources requested by their constituents. Other established professional associations that support entrepreneurship librarians—including BRASS, SLA B&F, and Entrelib—could step into this advocacy role.

Librarians primarily charged with overarching collection development coordination can also continue to monitor the market for new entrants. Vendors with no or very few academic clients may be willing to offer affordable pricing to gain access to the market. Librarians often forget that the net academic market is as valuable to vendors as their resources are to libraries' constituents.

In the 2017 ARL SPEC kit**,** "the majority of the responding libraries (42% or 75%) did not need to revise their license agreements or clarify limitations of use for online resources due to expanded entrepreneurial initiatives" (Armann-Keown & Bolefski, 2017, p. 6). Upon reading this report, we wondered if library liaisons that frequently work with entrepreneurs, such as business, law, and STEM liaisons, were reading license agreements for all of their e-resources. Is it clearly communicated that walk-in clauses do not supersede clauses preventing commercial use? Is a central subject selector communicating information back to fellow liaisons, or are electronic resources librarians and acquisitions teams responsible for negotiating and communicating license terms to library staff? Do electronic resources librarians understand the nonacademic questions librarians can receive from students, faculty, and other campus constituents?

It is clear that licensing is a multifaceted process, further complicated by restrictive, corporate terms from vendors who primarily sell to commercial enterprises. Some challenges are mostly applicable to faculty pursuing academic entrepreneurial scholarship. Vendors may have unrealistic expectations of control over how their information is used. For example, a vendor may wish to exercise total ownership of any product created from their data. This can directly interfere with scholarly communication norms; for example, a faculty member publishing a peer-reviewed article utilizing data is not in a position to grant the vendor rights to own and distribute a work that he or she has published in a journal. Some agreements may go further, asking for the right to approve any works that may be published. In addition to contradicting academic freedom, it is also unreasonable for libraries to take on the burden of ensuring all data users seek this permission.

Another challenging clause often found in licenses is language addressing commercial use and financial

decision-making. Terms may range from saying the vendor is not liable for outcomes of financial decisions made using its data to forbidding any commercial use for any of its content. Licenses often do not address key academic gray areas, such as students engaged in corporate internships for course credit, students completing academic projects that will lead to the commercialization of products postgraduation, or campus incubators that mentor and support entrepreneurial teams composed of a mixture of affiliates and nonaffiliates. Librarians must begin to proactively address these liminal cases to advocate for new types of use and future proof contracts.

Best Practices

First, we encourage colleagues to think beyond traditional library liaison roles. Entrepreneurship is interdisciplinary in nature, so strategies for support must involve cross-disciplinary teams. Identify the nature and scope of each person's contribution: Who in your community of practice has experience with contract negotiations? Data analysis? Patent searching? Medical market research? When forming these teams, whether informally or organizationally, acknowledge the importance of supporting one another and constituents in systematic ways. If the purposes of such a group and member roles are not clear, they cannot be effectively communicated or marketed to stakeholders or users.

When working with licenses, whether one's role is as an electronic resources librarian, library administrator, or subject liaison, communicate what is critical to ensuring that license terms align with this type of knowledge production and user needs. While it is challenging, user needs must be anticipated and articulated in as many potential use cases as possible during the negotiation period. This includes looking at all potential user groups on your campus: students, faculty, staff, research centers, tech transfer offices, alumni, internship hosts, community users, and more. Try to include language that supports for-profit use cases.

After licenses are negotiated and products are brought to campus, ensure that relevant terms are easy for users to understand and clearly visible from all resource access points. Rather than invoking fear of legal retribution, focus on making it as easy as possible for stakeholders to understand supported use cases for that individual resource, and acknowledge that due diligence is required as individual resources for different vendors will have different use terms. Make it clear how users with questions can receive timely guidance from librarians. For example, the University of British Columbia has an excellent visual graphic with details for the usage guidelines for each database and e-journal offered by their library. Areas covered include alumni access, course packs, and text and data mining (UBC, n.d.). While generally most library license resources do not allow commercial use, it is important to find a way to ensure that the resources that do are clearly represented on library and university websites.

In addition to ensuring that users understand usage terms, professional development may be necessary among library staff to ensure liaisons and acquisitions teams are communicating clearly and effectively. This is also true for stakeholders outside of the library, for example when administrators outside of the library are responsible for signing license agreements.

In addition to ensuring all library staff who support patrons understand how license terms can impact use cases, and where they can go to clarify license terms, focus on instruction. Where will your entrepreneurship resources likely be promoted and deployed? Our instruction with utilizing our resources to help with areas of research like patent searching, estimating market sizes, modeling legal documents, and profiling consumers will help patrons build connections between their needs, our resources, and the value of the library.

A newer, but critical area of instruction involves data literacy and software computing. Librarians should be able to understand the differences between programming languages and be able to recommend options for research. Librarians should also be able to provide support, whether themselves or by making connections, for faculty and students to gain the skills they need to analyze their data. Building a campus network to connect users to instructors and content needed to teach researchers how to work with data (coding languages, software, etc.) is critical.

Conclusion

While we highlighted many challenges surrounding supporting entrepreneurship in higher education, we firmly believe librarians are in a position to face these challenges and enhance their presence in academic entrepreneurship communities in numerous ways. Our key takeaways for success include steps toward an advocacy movement; libraries have always

been more powerful when working with others to pursue fair agreements with vendors. Let's extend these efforts to reach a greater number of nontraditional vendors.

Additionally, librarians need to build relationships across academic disciplines and colleges, both inside and outside of the library. Perhaps form an entrepreneurship support group at your institution, which may include liaison librarians, an electronic resources librarian, data curation specialists, faculty, and/or administrators of campus incubator groups, like at the University of Arizona (Tumarkin, 2014).

Finally, there is a need for continuing education for all library staff as license agreements cover a greater percentage of library collections. While all library staff may not be involved in collection development or acquisitions, any staff working with patrons should feel confident that they understand the contexts in which various library resources should be recommended and utilized. Continued professional development in this area will ensure that staff across your library system are able to support growing entrepreneurial programs, both academic and commercially focused, at your institution.

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