Structured Abstract:
Purpose
The purpose of this paper is to describe how the graphic organizer the Business Model Canvas can be used as a platform for business information literacy instruction.

Design/methodology/approach
This paper is a case study of the application of the Business Model Canvas in business information literacy instruction in an academic setting.

Findings
Entrepreneurship students can struggle to differentiate between the purposes of databases and to integrate research findings into the planning of their business. The Business Model Canvas provides a common framework for entrepreneurship students to understand the different purposes of the many information sources available and imposes the iterative process of making and testing assumptions against research.

Research limitations/implications
The findings discussed here are used in business and entrepreneurship classes, and thus far this process has been employed with that group in mind. This case study also discusses relatively new processes; the teaching described has not yet been rigorously assessed.

Practical implications
This process gives students practice integrating library resources into their work and understanding the use of specific resources. This model for instruction could be applied to business information literacy in entrepreneurship classes, and courses in other disciplines which also incorporate project planning.

Social implications
This process has the potential to improve the opportunity assessment process for student entrepreneurs, and to enrich information seeking practices for entrepreneurs.

Originality/value
Little has been written about the use of graphic organizers to differentiate between information resources. This research helps address this gap, while also helping to further explore how entrepreneurship students can best use library resources while developing their business plans.

Keywords:
Entrepreneurship, entrepreneurship research, business information, business model canvas, information literacy, business databases, business school libraries

Introduction
Academic libraries provide a vast amount of information useful to students learning the practice of entrepreneurship as they develop their understandings of industries, markets, business processes, and competitors. Much of this information is made available through subscription databases, with each outlet specializing in content and differing in form. Though integrating these resources into a research process can greatly improve student projects and papers, differentiating between resources and understanding their value can be major obstacles for many students.

To help address these issues, the Gast Business Library at Michigan State University uses the Business Model Canvas (BMC) in two specific ways: to encourage iterations on business concepts using library
resources and to match the students’ information needs to specific databases. The BMC is a graphic organizer used by entrepreneurs to draft important elements of their business idea. By emphasizing the connection between sections of the BMC and databases of business information, students are able to identify useful sources. Capitalizing on the popularity of the BMC, this format provides a familiar format for library resources to be matched with typical business research problems, giving a structure for understanding the relevance of the resources to the end user.

**Relevant Literature**

This case study builds off of a number of relevant fields: business information literacy (BIL), entrepreneurship instruction, the use of graphic organizers in education and business, and the specific use of the BMC in higher education are all relevant. Here I will touch on applicable themes and writing in each of these fields.

As Norris Kreuger writes (2003), “The ‘entrepreneurial event’ (defined as initiating entrepreneurial behavior) depends on two critical antecedent perceptions of desirability (both personal and social) and perceptions of feasibility (both personal and social).” Helping students create more accurate perceptions of both desirability and feasibility is crucial, and is a process librarians can play a part in. The rise in librarian research and writing on library support of entrepreneurs reflects this.

In the literature, two problems limit the positive impact that business information resources can have: first, a lack of awareness and differentiation of business information resources; and second, a failure to integrate those sources into the process of planning a business. The information resources available to entrepreneurs are useful and varied, and in the academic setting many resources are provided through library websites in the form of databases. While these resources have profound potential usefulness, they often come with substantial learning curves. However, as the business research team of Toronto’s MaRS Discovery District writes, “No single product meets all, or even most, information needs” (Fitzgerald et al. 2010, p. 193). Journal articles might come from one source, market research for particular industries from others, and descriptions of market segments from others still. One response to this challenge has been the development of single interfaces for finding a variety of relevant content (Mckeown, 2010). However this approach is limited by the material available to a given database, and as such specialized sources are often available.

In addition to the identification of appropriate resources, many entrepreneurs and entrepreneurship students find integrating research into their work challenging. As noted in Campbell and Cook’s work on embedding information literacy into market research classes, “Even when [students] found some data, they had difficulties determining what mattered and would tend to simply list this data without integrating it into the final analysis” (Campbell and Cook 2010, p. 173). Understanding the data and integrating into business model formation requires a set of skills that many students have not fully developed. In research on existing businesses’ development of growth plans based on market and industry research, one possible outcome was that “research generated more questions than it answered” (Leavitt et al. 2010, p. 217).

On the topic of BIL, there has been relevant work on the role of the librarian in creating instruction modules and sessions that fit well with larger course material. In Martha Cooney’s 2005 survey of business librarians on the use of information literacy (IL) instruction in their work, she analyzed the knowledge of important IL concepts, revealing that most business librarians were not knowledgeable about the language used to describe IL topics and that assessment of information literacy was not often present, while also noting an evolution as more librarians were learning about appropriate practices (Cooney 2005). Both Fiegen (2002) and Cooney and Hiris (2003) discussed the importance of working closely with faculty in development of appropriate information literacy content for business courses. Other articles present useful ways to assess information literacy instruction in a business context; Vaughan et.al (2004) helped provide a background for evaluation and assessment of BIL instruction, while Strittmatter (2012) provided a template for assessing BIL instruction with quantitative analysis of surveys taken before and after BIL instruction modules.

Research suggests that these two problems (source differentiation and research integration) could be partially addressed by the use of graphic organizers. Nesbit and Adesope (2006, p. 413) define graphic
organizers as “two-dimensional visual knowledge representations, including flowcharts, timelines, and tables, that show relationships among concepts or processes by means of spatial position, connecting lines, and intersecting figures.” Some of the potential values in graphic organizers are that they provide ‘at a glance’ simplified conveyance of understandings, foster discussion and brainstorming, and “are also effective in identifying both valid and invalid ideas held by students” (Cañas 2003, p. 8). As a graphic organizer, the BMC does differ in construction than the types of graphic organizers that have received the most study and attention: Concept Maps and Knowledge Maps, both forms of “node-link diagrams” (Nesbit and Adesope, 2006, p. 415).

Educators have begun exploring these potential benefits in case studies on their classroom practices. Hixson and Parretti (2014, p. 1) note that the BMC helped their Engineering students to “anchor their work in the needs of their audience.” They also help confirm some of the possibilities presented by Cañas, describing how the BMC acts as a tool for “collecting, organizing and presenting evidence, anchoring participants in a common language, establishing conceptual relationships, testing and refining hypotheses, [and] supporting social interactions and meaning making,” while also noting limitations in the BMC, namely that it is not self-explanatory. In other articles the BMC was used with physical objects to encourage creative problem solving (Buur and Mitchell, 2011) and as a means for spurring new product ideas from the vantage of an existing company (Hoveskog et al., 2015).

University and Course Context

Michigan State University is a large university that serves over 50,000 students, undergraduate graduate and professional, across 200 separate programs (Michigan State University, 2015). Entrepreneurship and small business education takes place in a variety of programs, including the Broad College of Business, the College of Arts and Letters, College of Engineering, and the College of Music. In addition, a number of initiatives support entrepreneurship which are not tied to single departments, including seed funding, an incubator and accelerator for undergraduate entrepreneurship, and a technology transfer office. MSU is also working to make entrepreneurship accessible across all areas of study, through the launch of an Undergraduate Minor in Entrepreneurship in Spring of 2015.

As entrepreneurship activities have continued to grow in importance, it has accordingly demanded more from the library in terms of course support, research resources, and staffing. As new or reimagined courses, the growing and changing entrepreneurship curriculum has also created the opportunity for library outreach. Reflecting this, my role as Entrepreneurship Librarian was created to serve entrepreneurship courses across the University as well as to support entrepreneurial initiatives emanating from non-academic units such as the technology transfer and state research extension offices.

Starting in Fall Semester 2013, a one-off instruction session for using the BMC in conjunction with library resources was created, eventually being implemented in three different courses. The three courses reach different populations at Michigan State. “Business Model Development” is a one-credit course available to all undergraduate students as it serves as first primer on idea generation and uses the BMC extensively in small groups; “The Art of Starting”, a three-credit course that gives a more thorough introduction to entrepreneurship; and “Entrepreneurship: New Venture Strategy”, a Masters level course in the residential MBA program.

In addition to these three courses, other implementations of this basic format are of note. Head Librarian of the Gast Business Library Laura Leavitt used a version of this model for instruction in her three-credit course “Business Intelligence Resources” in the Fall Semester 2014. A modification of this format was also presented at the Experiential Exercises track of the 2015 “Advancing Entrepreneurship Teaching and Research” Conference in Tampa, FL.

The Business Model Canvas

To understand this application of the BMC in instruction sessions, it is first useful to understand the context and research that it grew out of. Studying under Yves Pigneur at the University of Lausanne, Alexander
Osterwalder interviewed and tracked businesses’ methodology for finding winning business models as technology shifted, as his dissertation focused on “specifying and conceptualizing business models,” writing further that “one of the major impacts of ICTs [information and communication technologies] has been an increase in the possible business configurations a company can adopt because of the reduced coordination and transaction costs” (Osterwalder 2004, p. 2). In his doctoral research, and papers published with Pigneur and others (Osterwalder et al., 2005) (Gordijn et al., 2005), Osterwalder studied how firms landed on creative ways to create value for customers, leverage new technologies, and capture wealth and market share. This content was refined over years of consulting with companies, and in 2010, Osterwalder and Pigneur authored Business Model Generation: A handbook for visionaries, game changers and challengers, which brought these concepts to a wider audience. The book simplified the language of their academic writing, broadened the application to all types of organizations, and featured a graphic organizer: the single-page “Business Model Canvas”, or BMC, the subject of this paper.

Often scaled to the size of a 24” x 36” poster or to an 8 1/2” x 11” sheet of paper, the BMC divides a rectangular space into nine blocks, with each block pertaining to an aspect of business planning (listed here with their brief description quoted verbatim from Business Model Generation):

- Customer Segments: An organization serves one or several Customer Segments
- Value Propositions: It[the business] seeks to solve customer problems and satisfy customer needs with value propositions.
- Channels: Value propositions are delivered to customers through communication, distribution, and sales Channels.
- Customer Relationships: Customer relationships are established and maintained with each Customer Segment.
- Revenue Streams: Revenue streams result from value propositions successfully offered to customers.
- Key Resources: Key resources are the assets required to offer and deliver the previously described elements...
- Key Activities: ... by performing a number of Key Activities.
- Key Partnerships: Some activities are outsourced and some resources are acquired outside the enterprise.
- Cost Structure: The business model elements result in the cost structure. (Osterwalder and Pigneur, 2010, p. 17)

The Business Model Canvas is a one-page graphic organizer, then, for first sketching out an idea for a business model. The creators of the BMC define a business model as “A business model describes the rationale of how an organization creates, delivers, and captures value” (Osterwalder and Pigneur 2010, p. 14).

**Figure 1**

The Canvas is meant to be a living document, whereon entrepreneurs write out their assumptions and initial ideas, only to continuously update these thoughts with new information. Its simple composition and ease of comprehension mean that it can be introduced and used quickly, while the common use of sticky notes, white boards, and single sheets of paper imply the mutability of what is written down; iteration is encouraged. Assumptions are made more tangible through writing, and are then able to be tested against information.

**The Application of the Business Model Canvas to Business Information Literacy**

In recent years, entrepreneurship education has grown dramatically in enrollment, number of courses available, and participating programs (Kauffman Foundation 2013), while also undergoing a continual maturation in how it is taught (Neck and Greene 2011). Business models, meanwhile, have become much more common as an object of study in academic literature, rising from 3,850 articles published in 2003 to over 22,000 in 2011(Klang *et. al*, 2014).
Just as the BMC is now part of several formal entrepreneurship programs, it is also used widely outside of the academic arena; within Michigan, Small Business Development Centers, mentor networks like SCORE (the Service Corps of Retired Executives), business incubators, and even a weekly coffee-shop meeting of entrepreneurs all use the BMC as a tool for developing and nuancing business concepts. On Michigan State University’s campus, the BMC and its accompanying book are a crucial element of entrepreneurship support and education. Posters of the BMC are featured on the walls of both our business incubator and accelerator, and the BMC is featured in all stages of our entrepreneurship coursework, from first semester undergraduates to students in the MBA program. The popularity of the BMC presents an opportunity to establish the relevance of library resources while using a framework familiar to students.

In many cases, library resources for entrepreneurship are first introduced to students in one-off, course-based presentations where the instructor has invited a librarian to their class. In these entrepreneurship classes, how far along the students are in both their understanding of the BMC and the development of their business ideas will help determine the structure of the instruction session. These instruction literacy sessions follow this general format: 1) Librarian conducts a brief introduction to the library, 2) Librarian the introduces or reviews the BMC and practices the concept on an existing business, 3) Students fill out a canvas, either on their own business idea or on the same for the entire class, followed by a short discussion, and 4) Students practice using a database such as IBISWorld to lookup the relevant industry, 5) Students check the first draft of the Business Model Canvas against the information they are able to glean from the database, and 6) the Business Model Canvas is used to map the value of various databases to specific “building blocks” of the BMC. What follows here is a more in-depth description of these steps.

In an introduction to the library, more broadly useful library topics are covered, such as use of the library website, location of the business library, and other functionality of the library as a service, such as printing and meeting rooms. These instruction sessions are the setting for teaching the value of library resources in entrepreneurship courses and the process of planning a business.

The section of the class on the teaching of the BMC is begun by informally asking the class how familiar they are with the BMC, and it often has had some penetration even if not yet covered in coursework, ranging from “It’s on the walls of the [incubator]” to “We used it in a workshop I took part in [elsewhere].” Bringing the entire business model canvas up on a slide for an explanation follows, with the instructor often chiming in to talk about which elements are of particular importance for the coursework. To further illustrate how the BMC works, it’s often helpful to complete a BMC with an existing business with which everyone is familiar. After a business has been discussed in this way, the class brainstorms relevant search terms for researching this business. At this point, the key searching database is introduced, and in these instruction sessions I have used IBISWorld. IBISWorld, an industry research database, works particularly well for this exercise as it has an accessible interface, covers industries in a way that maps relatively easily to the BMC, and provides plenty of information for the students to pursue further.

Now that the class has some understanding of the BMC as a way to understand a business, they are broken into either their existing project groups or small groups based on where they are sitting, and groups get five minutes to draft their first business model canvas, usually focusing on the areas that the course instructor had provided emphasis for in the beginning of class. Both the librarian and the course instructor work the room during this time, answering questions and providing feedback. Once a draft of BMC is in place, a couple of minutes are set aside to brainstorm search terms, writing them at the bottom of the BMC.

At this point, the class is given instructions to navigate to IBISWorld and proceed with looking up their industry. Using primarily the reports available through IBISWorld, the teams then redraft their business models, updating assumptions they had been making and correcting their previous work. The class’s attention is then redirected to the librarian. This in-class exercise immediately encourages the students to think of their business model, and the resultant canvas, as flexible and changeable with new information. The exercise encourages them to check their assumptions while also filling in details for some aspects of the business they might not have had a strong sense of previously. This exercise can be done in a relatively short period of time,
introduces business-planning practices along with at least one library resource, and helps students to clarify their business idea. Since IBISWorld does not cover market segment or financial information with the depth of more specialized databases, the last section of the class uses the BMC as a graphic organizer to relate which databases to use for specific elements of their business planning. Figure 2 refers to a BMC with specific databases mapped on to the areas where its content would be most useful. Once again the BMC is used, this time to a different effect; where before one generalist resource applied to all areas of the BMC, here specific databases provide greater depth in more specific topics. Depending on the available time, short introductions to these next databases is then included as we reach the end of class.

**Figure 2**

**Evaluation**

In this case study, no formal assessment has taken place. There are nevertheless some takeaways, particularly for when I have used this model for instruction in the same course several times. Instructors report greater integration of outside sources and value the practice with iteration that the instruction model encourages. The practice of mapping many databases to the BMC also helps those affiliated with entrepreneurship programming to recognize for themselves which databases might be of value to students, and have requested the “Disambiguation” poster, featuring many sources mapped onto the BMC, to be posted on the wall of the accelerator.

Some drawbacks to this approach have also become apparent. As noted in Hixson and Parretti’s article on using the Business Model Canvas in engineering education (2014), the BMC does require some explanation. The BIL components of this instruction model require the students becoming comfortable with the BMC, and yet are early enough in their planning that a high-level resource like IBISWorld has the greatest impact.

Another challenge is that the approach to “Disambiguation”, whereby multiple databases are presented on the BMC, is that it can be interpreted as simply knowing where the information is available is all the students need. In reality, many of the databases are sufficiently complicated as to require their own explanation and possibly a follow-up appointment. Additionally, the inclusion of multiple databases for a single block (such as including both e-Statement Studies and Bizminer under “Revenue Streams”) may lessen the chances that students use either. Instruction sessions that show the BMC with multiple databases should limit the number to four. Originally, the BMC was displayed with up to 12 different resources displayed, even in presentation slides, which likely hurt the chances that any would be put to use; corrections have been made to only include the two or three databases that match the needs of the course.

Lastly, if a course instructor hopes for content that does not align well with the BMC, or does not plan to use the BMC in their course, then this model for instruction might not be appropriate. Examples I have encountered might be a greater emphasis on competition (not addressed with the BMC), or a preference for working directly towards a business plan.

**Next Steps**

Though this approach to the instruction of BIL is now established in our entrepreneurship classes, further developments are necessary to improve it and test its validity. Though two values related to BIL are presented here, integration and disambiguation, determining to what extent each is achieved is not yet known.

Two possibilities for testing the effectiveness of the BMC method for BIL instruction are 1) to capture the before and after versions of the students’ Business Model Canvases during the exercise involving an industry-research database such as IBISWorld, 2) to assess the level of understanding of the different databases and whether or not these sessions drive use and citations in classroom deliverables, and 3) to conduct before and after surveying of students to test their understanding of the purpose of databases. A next step for our entrepreneurship coursework could be to continue to iterate on the BMC over the course of a semester, incorporating other forms of information and research such as interviews of potential customers.
There are also possibilities for creation of other materials which support the use of library resources at important junctures in the business model formation process, such as through videos or interactive web-pages exploring how to use databases to size a market while using the BMC as the framework.

Conclusion

The Business Model Canvas presents a great opportunity for librarians who are working with business and entrepreneurship coursework. As an already popular tool for helping entrepreneurs plan and iterate on their business concepts, the BMC introduces library material expertise in such a way as to quickly improve their understanding of a given industry in addition to the state of their concept. It also provides a means with which to distinguish potentially useful databases by matching databases to elements in a business-planning process. Though working with the BMC is entering its third year in Gast Business Library instruction sessions, further examination of the relative strengths and weaknesses of the approach is needed, with particular attention paid to how well the BMC allows students to reflect and improve on their BMC’s and business concepts, as well as how well these sessions direct attention to and improve understanding of particular databases.
References


