Chapter 7

Database Scavenger Hunt and Analysis for Accounting Students

Robbi De Peri

Introduction

This financial database scavenger hunt was designed with input from the Vanderbilt MAcc Program Director, Dr. Karl Hackenbrack; Walker Management Library Director, Hilary Craiglow; and annual input from the MAcc Advisory Board. The assignment was first used in 2012 and has changed over the years depending on the resources available to the students as well as direction from the program on what areas, skills, and topics students need experience with prior to their internships. While aimed specifically at MAcc Valuation students, it can easily be adapted for both undergraduate and graduate students in the fields of finance and accounting. The databases used will differ depending on what your institution offers as well as the class level and program of your students. Additionally, the amount of time available for your students to spend on this assignment will impact how many of the assignment modules as well as how many resources per module you will have them explore.

The assignment is designed to be repetitive in nature, focus on resources and types of information that students will use during internships, and support the development of co-curricular knowledge recommended by the MAcc program and Advisory Board. In addition, we slip in fundamental information literacy and ACRL *Framework* concepts focusing on Authority is Constructed and Contextual, Information Has Value, and Searching as Strategic Exploration.¹

Planning

The Owen Graduate School of Management is on the Mod system, with four Mods per year, each eight weeks long. The Master of Accountancy program is a one-year program that consists of four mods, with Mod 3 consisting of an off-site required internship. Immersion Week throughout the school is held during the break between Mod 1 and 2. Traditionally, this assignment is one within a greater weeklong, required Immersion Week: Business Research for Valuation Professionals co-curricular course. However, depending on your institution's calendar, you could structure the delivery of this in many ways: as a standalone assignment, as part of an online tutorial, or a business research co-curricular workshop. We designed a LibGuide to support the assignment as well as the greater course. There are so many layers of information to share with students—database links and directions, screenshots of deliverable examples, etc.—that having everything live in one digital platform is ideal in order to have all materials together and limit student confusion. Your institution's CMS (course management system) could be another solution.

Number of students

10–20, depending on MAcc Valuation enrollment. This assignment can be modified for larger student groups, first by removing the most time-consuming piece for the instructor: giving individual feedback on each student's deliverable. Another modification would be to have group drop-in sessions for database/assignment help versus scheduling one-on-one consultations.

Audience

MAcc Valuation track students. As presented, the assignment is most suited to graduate students focused on accounting and finance; however, it can be easily modified for undergraduate students focused on the same areas. For undergraduate business students, it is helpful to think through what skills they will need for their coursework and/or to be competitive in the internship and job market, then retrofit the assignment to meet those needs. Talking to people in your career centers, program directors for business programs, upper-level students, and alumni can help you determine exactly where there is a skills gap for your students between coursework and the workplace.

Preparation and Resources

We plan and update the course and assignment each year based on input from three sets of stakeholders:

• Each year, the librarian administers a pre- and post-course survey of the students. The pre-course survey² focuses on experience with and exposure to various professional business research tools, and habits around information retrieval and literacy topics. The post-course survey³ is administered after Mod 3, when students traditionally complete their professional firm internship, to gather feedback on which tools they used, which course information was helpful, and where the course can be improved.

- Using survey data and student feedback, the librarian suggests updates to the MAcc program director. I ask: What information skills do their students need to develop outside of the classroom?
- Most years, the librarian and library director are invited to attend the MAcc Advisory Board meeting in August, with an occasional invitation to present to the board about our Immersion Week programming. By sitting in on sessions, we hear from firms about skills that interns and early-career accounting professionals need to be successful: What information skills do they see new hires needing now, and what skills do they anticipate will be necessary in the next one to three years? This allows us to adjust course content.
- Vanderbilt subscribes to a wide variety of databases and professional business research tools. For the assignment, we focus on exposure to databases, financial resources, and tools that have a high market share in today's information economy. This includes tools that students will use during their internships and careers, with a mix of free and for-fee resources so that students can see firsthand the ease of use, access, and quality among them as well as exposing them to free resources in case their employer doesn't subscribe to a particular tool. We revisit the resources each year to ensure they reflect our current collection.
- Current required subscription resources: Bloomberg, Capital IQ, Refinitiv Workspace, Calcbench, Factiva, Intelligize, Hoovers, First Research (Intellect), and IBISWorld.
- Current required free resources: Zach's Investment Research,⁴ Yahoo Finance,⁵ Seeking Alpha,⁶ EDGAR,⁷ an industry or government association relevant to the company (usually chosen from within IBISWorld "Additional Resources" and/ or "First Research Websites and Acronyms" sections). In addition, a free account within Tableau for Education⁸ is needed to complete the data visualization portion of the assignment.

Description of Lesson/Activity

As an embedded librarian, I work with the MAcc program starting in the summer to meet with the students at early points in their programming. As immersion week gets closer, I set up dates for three one-hour, in-person meetings with the group (see appendix 7A). Once Mod I exams are over, I send the students an email with our meeting times, our pre-course survey link, and a link to the course LibGuide. On day one, students choose a publicly traded company on a first-come, first-serve basis (each student must choose a different company). I walk them through the assignment, which calls for them to locate specific information about the company and corresponding industry utilizing a variety of online resources and professional business databases. Students provide an analysis of the resources as well as a brief analysis of the company. To support their learning outcomes, we require concurrent training on certain databases which varies from year to year.

Learning goals

1. Develop evaluative and tactical skills in searching and locating business and financial information.

- 2. Discover and gain advanced knowledge, understanding, and utilization techniques of professional industry-standard resources.
- 3. Recognize the value of proprietary information and data.
- 4. Apply standards to discover the appropriateness of free versus fee data sources.
- Learn to identify industry experts and associations to build a network of authorities.

Time required

- **Instructor time required.** As with any assignment, the time needed to build a similar assignment will vary based on many variables. There is the "soft" time needed to develop relationships with programs and professors and to understand the co-curricular and curricular needs of the programs and students. Once you can leverage your knowledge to provide a similar type of programming, the next chunk of time will be to make sure that you are experienced enough in your array of databases to find the data pieces you are asking your students to find. Will you need to spend some time using the database learning tools to bring yourself up to speed? Depending on the people and entities involved, you will need to factor in time for approval of the details of the assignment. Once that is done, you will have to account for time in the classroom (for me that equals 3 hours over a week) along with time to assist students with assignment and database questions and troubleshooting. (I typically have office hours during the course week, offering 2 hours/day Monday-Thursday, so another 8 hours.) Since I work with a small group of students, I offer individual feedback on each assignment, which usually takes 15 minutes per student, adding another 3 hours or so. On paper, this means ~14 hours. In reality, the week of the course ends up taking the vast majority of my work time. The lead up to the course is a minimum of 20 hours, most of that spent updating the supporting documents, making sure the assignment modules still work the way I expect them to, meeting with the program staff, and other administrative duties. For an initial launch of the assignment, I would budget at least 40 hours, once approved, to develop the syllabus and the supporting documentation.
- **Student time required.** Averages 6–10 hours, depending on student's experience and facility with the Bloomberg Terminal and the Tableau data visualization tool.

Teaching Outline

• There are ten modules to the assignment, as detailed below. One of the helpful things with the setup is that it is easy to add or delete pieces depending on your needs and your resources. Modules 1–5 require the student to locate a particular type of company information from within four select resources. The deliverable must include screenshots from each resource, with student analysis of the content quality and interface experience for each resource. We added the screenshot requirement so we can check that the students actually used the desired resources for their company research as well as to assist us in finding pain points within the student experience. We ask for student analysis on the resource content to force them to start articulating variances within the information quality and user experience across business and financial platforms.

- Assignment module details. The resources listed were used for the fall 2020 assignment.
- Fundamentals resources. Find the current earnings/EPS estimates for the company utilizing Bloomberg, Capital IQ, Refinitiv Workspace, and Zach's Investment Research.
- 2. Financials resources. Find the current and historical quarterly balance sheets (going back as far as the resource allows for the company and noting the start date for historical balance sheets for each) utilizing Bloomberg, Calcbench, CapitalIQ, and Yahoo Finance.
- **3. Corporate events resources**. Find a corporate calendar and/or conference call transcript (both if possible) for the company utilizing Bloomberg, Capital IQ, Factiva, and Seeking Alpha.
- **4. SEC filings resources**. Find the company's CEO compensation, utilizing Bloomberg, Capital IQ, Intelligize, and EDGAR.
- 5. Comparables. Some databases provide pre-made comparables or industry norms to analyze how a company is performing compared to its peers. How those peers are identified may not be the same way a student would identify them nor may they be the same companies that they feel are peers. This module has students look at various peer comparisons, including some that let you create your own list of peers. Resources utilized are Hoovers, First Research, Bloomberg, and Capital IQ.
- 6. Data visualization using company financial data. Once students have a corpus of financial data about their company, they are asked to manipulate that data within Tableau to create a data visualization that adds to their insight and commentary about that company. There are other data visualization tools that could be used in place of Tableau, but that happens to be the one that is simplest for us to require due to staffing knowledge at this time. You could substitute the charting tools in Excel, Power BI, Alteryx, or even Python with Jupyter Notebooks. This depends on the librarian's and student's ability to use and/or access a given data viz tool. Students need to explain why they chose the particular data set and how the data viz added to their understanding of that company and its performance in a way that traditional analysis did not. This module was added in 2019 as the need for exposure to data visualization creation and analysis prior to internships became prevalent.
- 7. **Industry analysis resources.** Knowing that you cannot understand a company if you don't understand the industry that it functions within, we ask students to locate narrative analysis of the industry space within which the company resides utilizing Hoovers, First Research, and IBISWorld.
- **8. Industry associations.** Utilizing the resources students have already used (primarily First Research or IBISWorld) or an alternative search method, they need to identify one or more reputable industry associations and provide information about the types of information that the association and its members may be able to provide that wasn't already discovered in the assignment.
- **9. Industry analysis.** Students provide a brief analysis of their company within the industry context. The analysis should be no more than one page and focus on the information the student discovered during this assignment. This should be written from the viewpoint of acting as an industry/company analyst.

- **10. Buy, sell, or hold recommendation.** Based on the information the student gathered during the assignment and the analysis of their company within the context of its industry, they must provide a buy, sell, or hold recommendation for the company's stock.
- We have identified certain pain points over the years in which we've worked with students on this assignment. Since this is built on real-world objectives they'll be exposed to during internships and after graduation, we've built in concurrent scaffolding activities and prompts so that students can access and analyze the content we are asking for, rather than spend a lot of time frustrated and wasting time fighting with the resources. This includes the following:
- 1. Bloomberg Market Concepts (BMC) Getting Started Module. If a student hasn't completed the BMC already, we ask them to create a Bloomberg account and complete the Getting Started Module.
- 2. Targeted Capital IQ training. Capital IQ is the ubiquitous resource that MAcc Valuation students use during their internships. We work with the vendor to provide a targeted, one-hour live session for the students, based on the syllabus.
- 3. Getting Started with Tableau session. Walker Management Library staff host a one-hour session covering the basics behind data visualization best practices, an introduction to setting up a Tableau for Education account, and what it looks like to manipulate data within the platform.
- 4. Assignment LibGuide page. Within the database descriptions, we highlight relevant sections, Bloomberg terminal codes, and help boxes with screenshots so that students can more easily find the targeted information they need (see appendix 7B).
- 5. Using feedback from recent MAcc alumni (gathered from prior post-class surveys) is helpful to get students to buy into the assignment and realize the real-world benefits.
- 6. Providing students with an example of what the deliverable should look like avoids any confusion.
- 7. The librarian provides feedback to each student on their assignment with a focus on providing details to enhance their understanding and use of the resources. No grade is given, but the entirety of Immersion Week is mandatory for all MAcc students.

Additional content

- 1. Business Research for MAcc Valuation Professionals syllabus (see appendix 7A) (https://researchguides.library.vanderbilt.edu/ld.php?content_id=57849648)
- 2. Business Research for MAcc Valuation Professionals LibGuide (https://researchguides.library.vanderbilt.edu/immersion)
- 3. Assignment II LibGuide page (see appendix 7C) (https://researchguides.library. vanderbilt.edu/immersion/scavenger)
- 4. Assignment II handout (https://researchguides.library.vanderbilt.edu/ld.php?content_id=50494923)
- 5. Assignment II example (http://researchguides.library.vanderbilt.edu/ld.php?content_id=25882654)

Fundamentals – Earnings/EPS Estimates

Brief Analysis

After getting over the Bloomberg learning curve, the Earnings & EPS Estimate was easy to find under company XXXX. I thought the XXXXX in CapIQ was XXXXX compared with the other resources, but I also noticed XXXX. It was XXXX to locate this data on Zacks, but it is clear that that resources is XXXX, and it XXXX. If I were focused on EPS XXX (e.g. growth, estimates, etc), I would choose XXX database. If I had to choose just one resource for finding this data again, my choice would be XXXX because XXXX.

Screenshots

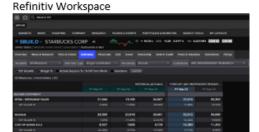








Figure 7.1

Screenshot of Assignment II example. As mentioned earlier, we ask students to capture a screenshot of the requested information, from each resource/database. Whole reports or spreadsheets are not necessary, just proof that they searched and then found the information for their company and its corresponding industry. For each information category, they must also provide a brief analysis of the resources utilized, no more than a paragraph, comparing and contrasting the resources used for the particular module and critique user points of analysis (export capabilities, intuitiveness of use, currency of information, etc.).

Transferability

Due to the modular design of this assignment, it is very easy to customize both to reflect an academic institution's current resources as well as to support different student levels and academic programs. Decisions should be made by considering the need of all stakeholders: students, faculty, internship/job employers, as well as library staff. As with many library instruction initiatives, building relationships with academic program staff,

faculty, and vendors is key to developing programming, especially outside of one-shot sessions.

Database substitutions

Determining the appropriate subscription databases starts with the focus of the class/program, as well as your institution's current resources. Certain resources that we use for this assignment would not be good choices for our undergraduate business minor or for our Master of Finance program, while there are a few other databases that work well for those programs but we choose not to use for the MAcc program. Having learning goals and objectives in mind will guide your choices for appropriate resources to require students to utilize.

Online versus in-person

This class is traditionally taught in person as part of Immersion Week, which encompasses other activities such as interviews and test prep. In 2020, we flipped to an online model and saw no change in quality and participation. Students were able to access most resources remotely, and the library was open to access those needed in person. If we had needed to be completely remote, we could have deleted some resources from the assignment.

Different class sizes and audiences

The typical class size for this assignment is small, between 10–20, which allows us to provide customized feedback and instruction. For larger classes, the time available to grade needs to be balanced with the amount of feedback per student that can be reasonably provided. In addition, the requirement for each student to choose a different public company rarely creates an issue with smaller classes; with larger classes, the librarian may encounter more work in managing student requests and subsequent redirection to other companies. Vendor licensing agreements and user limits may need to be managed for certain resources.

Harkening back to the modular design of the assignment, it is easy to add, delete, or edit the various modules within the assignment to support the needs and abilities of the students.

Appendix 7A

The Owen Graduate School of Management, Vanderbilt University
MAcc—Masters of Accountancy, Valuation
Immersion Week: Business Research for Valuation Professionals 2020

Syllabus

Robbi De Peri

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Class Hours

Wednesday, October 7, 11am-1pm via Zoom Friday, October 16, 11am-12 via Zoom Schedule an Appointment Online for individual assistance.

Program Objectives

Develop evaluative and tactical skills in searching and locating business and financial information. Gain advanced knowledge, understanding and utilization techniques of industry standard information gathering resources. Upon completion of the program, students will:

- Recognize the value of proprietary information and data.
- Effectively employ information resources and databases most utilized in the valuation professions.
- Develop expert information seeking behaviors.
- Identify industry experts and associations to build a network of authorities.
- Apply standards to discover the appropriateness of free vs. fee data sources.
- Discover and gain advanced searching techniques across a variety of platforms, using various types of data and information.
- Complete Module 5 of the *Bloomberg Market Concepts* learning program.
- Receive targeted training by and for S&P's Capital IQ.
- Complete the newly launched Capital IQ Certification program.
- Complete a basic data visualization task focused on public company data.
- Have an introduction to the concept of XBRL—eXtensible Business Reporting Language.

Program Outline

Class will meet twice:

Wednesday, October 7, 11am-1pm via Zoom

Hour 1: Course overview, goals and objectives, basic research skills instruction and disseminating assignments. Overview of public company data.

Hour 2: Capital IQ database training

Friday, October 16, 11am-1pm via Zoom

Acknowledgement of completion of assignment I. Turn in assignment II. Discussion of assignment III. Advanced Google technique overview.

Most of this program is self-guided, with direction and assistance from the Management Librarian throughout the week. Students will meet the objectives for the course through the completion of hands-on and reading/discussion assignments. The assignments are:

- Pre-class survey
- Reading 1: Redman, T. C. (2016). Bad data costs the US \$3 trillion per year. Harvard Business Review, 22, 11-18.
- Reading 2: Davenport, T. H., & Kim, J. (2013). Keeping up with the quants: Your guide to understanding and using analytics. Harvard Business Review Press.
- Bloomberg Market Concepts (BMC) Online Training Program: Module 5 (assignment I)
- Database Exploration & Analysis-Scavenger Hunt (assignment II)
- Capital IQ training
- Capital IQ Certification
- Reading 3: XBRL (assignment III)

Program Evaluation

Successful students will:

- finish the Bloomberg Market Concepts Module 5;
- watch Capital IQ training modules;
- attend all class sessions;
- turn in their Database & Analysis assignment II; and
- read 3 articles on: bad data; data visualization, and XBRL, and participate in discussions (virtual and in-class).
- Assignment II will receive comment and feedback from the instructor. This feedback and information about student participation will also be shared with the MAcc Faculty Director and Program Coordinator.

Appendix 7B

The Owen Graduate School of Management, Vanderbilt University
MAcc—Masters of Accountancy, Valuation
Immersion Week: Business Research for Valuation Professionals

Assignment II: Database Exploration & Analysis for Valuation Professionals Sample

Jane Doe

MAcc Immersion Week

Assignment II: Exploration & Analysis of Databases for Valuation Professionals

October 14, 2016

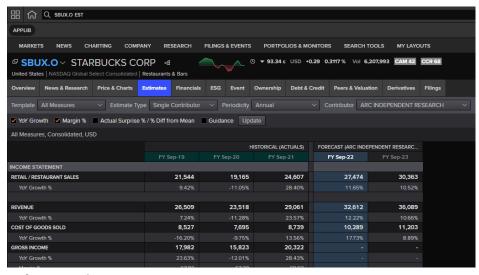
Company: Starbucks (Ticker: SBUX) NAICS industry code: 7225(15)

1. Fundamentals: Earnings/EPS estimates

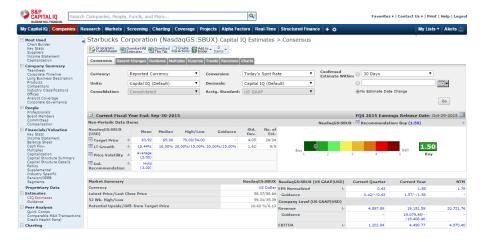
Brief Analysis

After getting over the Bloomberg learning curve, the Earnings & EPS Estimate was easy to find under company XXXX. I thought the XXXXX in CapIQ was XXXXX compared with the other resources, but I also noticed XXXX. It was XXXX to locate this data on Zacks, but it is clear that that resources is XXXX, and it XXXX. If I were focused on EPS XXX (e.g., growth, estimates, etc.), I would choose XXX database. If I had to choose just one resource for finding this data again, my choice would be XXXX because XXXX.

Screenshots



Refinitiv Workspace



CapitalIQ



Zacks



Bloomberg

2. Financials: Current & historical balance sheets (quarterly)

Same format as above: 1 paragraph analysis or resources utilized followed by screenshots of each data source.

3. Corporate events: Corporate calendar and/or conference call transcript

Same format as above: 1 paragraph analysis or resources utilized followed by screenshots of each data source.

4. SEC filings: CEO compensation

Same format as above: 1 paragraph analysis or resources utilized followed by screenshots of each data source.

5. Industry analysis

Same format as above: 1 paragraph analysis or resources utilized followed by screenshots of each data source.

6. Comparables

Same format as above: 1 paragraph analysis or resources utilized followed by screenshots of each data source.

7. Data visualization using company financial data

This section should include the data visualization along with an explanation of why you chose the particular data set, and how data viz added (or didn't!) to your understanding of that company and its performance in a way that traditional analysis did not.

8. Industry websites and associations

While using First Research, I came across the XXX association, which advocates for companies in the XXX industry by providing the following services and information: xxxx, xxxx, and xxxx. I found the xxx data they provided helpful because xxxx.

9. Analysis of the company within the industry context

This section can be up to one page, focused on the information you discovered during this assignment, and should be written by you in the role of a company and industry analyst.

10. Buy/sell/hold recommendation for your company stock

Based on the information gathered during this assignment, and your analysis of the company within its industry context, provide a Buy, Sell or Hold recommendation.

Appendix 7C

The Owen Graduate School of Management, Vanderbilt University MAcc—Masters of Accountancy, Valuation Immersion Week: Business Research for Valuation Professionals

Assignment II: Database Scavenger Hunt & Analysis for Valuation Professionals

Robbi De Peri

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For this assignment, you will choose a publicly traded company and locate specific information about the company and corresponding industry utilizing a variety of online resources and databases. This exercise is meant to be repetitive. You will provide analysis of the resources and finally provide a brief analysis of the company.

1. Identify a publicly traded company.

This can be any company of your choosing but must be located in the US and
publicly traded on a major US exchange; you will have to also identify the
industry in which the company resides, using both NAICS and SIC codes.
Include the company name, ticker symbol and its industry NAICS code at
the top of your deliverable (see example.)

2. Locate and report specific data and information about the company and its corresponding industry.

- The specific data and information you are to locate is outlined below.*
- There are eight categories of information you will be seeking: six related to company financials, and two industry related questions.
- Each financial category has four pre-identified resources/databases for you to utilize. These resources/databases are a mix of industry standard proprietary databases and free web resources. You must use all the identified resources, although you may also use additional databases or resources if you wish.
- Capture a screenshot of the requested information from each resource/database. Whole reports or spreadsheets are not necessary, just proof that you searched and then found the information for your company and its corresponding industry.
- For each information category, provide a brief analysis of the resources utilized. Your analysis should be short, no more than a paragraph, comparing and contrasting the resources in relation to the particular information request. Use the attached guidelines for points of analysis (export capabilities, intuitiveness of use, currency of information, etc.).
- A sample of a completed information category is attached.

^{*} Data and Information to search and find:

Fundamentals

Find the current **Earnings/EPS Estimates** for your company utilizing the following resources:

Bloomberg Capital IQ Refinitiv Workspace Zacks (web)

Financials

Find the current and historical balance sheet (going back as far as the resource allows, quarterly-please note the start date for historical balance sheets for each resource), for your company, utilizing the following resources:

Bloomberg CapitalIQ CalcBench Yahoo!Finance (web)

Corporate Events

Find a **corporate calendar and conference call transcripts**, for your company, utilizing the following resources:

Bloomberg CapitalIQ Factiva Seeking Alpha (Web)

SEC Fillings

Find your company's **CEO compensation**, utilizing the following resources:

Bloomberg
CapitalIQ
Intelligize
EDGAR/SEC (web)

Comparables

Locate various forms of peer comparisons for your company:

Hoover's First Research (Intellect) Bloomberg Capital IQ

Data Visualization using Company Financial Data

Locate a dataset for your company in CapIQ or Bloomberg and use a data visualization tool to analyze.

Industry Analysis

Locate **narrative analysis of the industry** space in which your company resides, utilizing the following resources:

Hoover's FirstResearch (Intellect) IBIS World Refinitiv Workspace

Industry Association

Utilizing the "Websites and Acronyms" section of First Research, the "additional resources" areas of IBISWorld, or an alternate search method, **identify one or more reputable industry associations that apply to your public company's industry area** (examples of an industry association are the National Restaurant Association, or the American Medical Association). Provide information about the types of information the association and its members may be able to provide that you have not already discovered in this assignment.

- 3. Provide a brief analysis of the company within the industry context.
 - Your analysis should be no more than one page and focus on the information you discovered during this assignment. This should be written from the viewpoint of you acting as an industry/company analyst, not as an analysis of the assignment process.
 - You may, but are not required, to utilize any information beyond what you found during this exercise.
- **4. Provide a buy, sell or hold recommendation for the company stock** based upon your company and industry research and analysis.
- 5. As part of your research, please make note of the following Bloomberg codes to find analysis for your company within Bloomberg:
 - ANR: Analyst Recommendations
 - BICO: Bloomberg Intelligence Company Primer
 - BI: Bloomberg Intelligence Launchpad.

Endnotes

- Framework for Information Literacy for Higher Education, Association of College and Research Libraries, 2016, accessed December 19, 2020, http://www.ala.org/acrl/standards/ilframework.
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——. Pre-Course Survey. https://vanderbilt.libwizard.com/f/MAccVal2020.

Yahoo! Finance. http://finance.yahoo.com/.

Zacks. http://www.zacks.com/.