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Kabbage: A Fresh Approach to Understanding Fundamental Auditing Concepts and the Effects of Disruptive Technology

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KABBAGE: A FRESH APPROACH TO UNDERSTANDING FUNDAMENTAL AUDITING CONCEPTS AND THE EFFECTS OF DISRUPTIVE TECHNOLOGY

ABSTRACT: Disruptive technology, new business ventures, and increased availability of data are quickly changing traditional financial reporting and assurance processes. As a result, prospective auditors not only need to understand fundamental auditing concepts but also need to anticipate the influence that disruptive technology will have on the profession. The following case study provides a lens through which prospective auditors can view the coming changes to the profession by asking them to consider how the online lending company, Kabbage, is currently disrupting the lending industry for non-traditional and small businesses. Students contemplate several fundamental auditing concepts such as audit evidence, financial statement assertions, and analytical procedures while also acquiring an insight into the effects that new and disruptive technology will have on the profession. The intention is to encourage students to embrace coming changes and become lifetime learners.

Keywords: disruptive technology; assurance; audit evidence; financial statement assertions; analytical procedures; data analytics; blockchain

THE CASE

“Every business is having to transform today, no matter the size. It’s up to us to transform to meet those expectations.”

Barry Melancon – CEO and President of the American Institute of CPAs at the 2019 AICPA Engage Conference

Disruptive technology, new business ventures, and increased availability of data are quickly changing how financial information is communicated to users and how assurance is provided on that information. Innovations are creating both challenges and opportunities, and future auditors need to understand how the profession is evolving to be able to adopt new technology and capitalize on emerging opportunities.

To understand the effects that disruptive technology will have on the auditing profession, one should consider how the banking industry has been disrupted by Kabbage, a fully automated online lending platform that provides financing to non-traditional and small businesses. Banks have always been reluctant to lend money to non-traditional and small businesses (especially those that do not prepare financial statements) because it can be difficult to assess their financial performance and creditworthiness. Recognizing the challenges that non-traditional and small businesses have with securing loans, three entrepreneurs recently started a company that offers an innovative, digital twist on lending. Rob Frohwein, Marc Gorlin, and Kathryn Petralia founded Kabbage, a novel lending platform named after a slang term that they, as friends, frequently used for money. By specializing in lending to often overlooked businesses, Kabbage quickly disrupted traditional lending processes (Credeur 2013; Max 2012).

One of the most innovative aspects of Kabbage’s business model is that applicants do not prepare and submit financial statements as part of their loan application. Instead, they simply provide Kabbage with direct digital access to their underlying transactional data. Kabbage then

aggregates the relevant information to construct a financial profile of the potential borrower to assess their creditworthiness (Wisniewski 2017). Quantitative data sources, which provide Kabbage with objective evidence, include bank account activity, eBay transaction history, PayPal and/or Venmo activity, and UPS/FedEx/USPS shipping records (Mitroff 2012; Dahl 2015). Kabbage can also incorporate quantitative data directly from an applicant's accounting information systems such as Intuit, Quickbooks, and Sage (Kabbage 2015).

Likewise, Kabbage can incorporate applicants' social media activity, a form of qualitative data, into its lending decisions. Examples include relevant Twitter feeds, Facebook likes and comments, and various forms of online reviews. Applicants who provide access to qualitative data sources typically have higher loan approval rates and lower borrowing costs (Dahl 2015; Farr 2013), and those who demonstrate consistently positive interactions with customers tend to have better financial performance and lower default rates (Credeur 2013; Fest 2013).

Kabbage's approach and its ability to quickly incorporate both quantitative and qualitative data enable it to develop a deeper understanding of an applicant's financial position and default risk. In many instances, the provided data enables Kabbage to calculate revenue, identify sales trends, understand the customer and product mix, determine trends in cash collection, etc. Kabbage's co-founder, Kathryn Petralia, highlighted the value of combining financial and non-financial data when she stated, "We probably know more about any given business than any other company has known about a small business, ever" (Mitroff 2012).

Kabbage's fully automated loan evaluation process provides a lower cost structure relative to traditional lenders, which empowers Kabbage to profitably underwrite small, short-term loans that would typically generate losses for traditional banks (Wendel 2015). Kabbage

evaluates loan applications in approximately six minutes, whereas traditional banks take three or more weeks (Dahl 2015). Kabbage approves approximately 80 percent of its loan applications, and its default rate is five percent, which is substantially less than the eight percent default rate for traditional lenders (Credeur 2013; Max 2012). Customers who return to Kabbage for additional financing can merely provide the additional transactional data that occurred since their previous loan, and applicants with a history of consistently paying on time are often granted lower fees and higher borrowing limits (Dahl 2015).

In the same manner that Uber, Airbnb, and PayPal are disrupting their respective industries, Kabbage is similarly using technology to reshape the lending industry. Rather than asking potential borrowers to incur the costs of preparing financial statements, Kabbage prepares its financial analysis using data obtained directly from applicants and independent third parties. In doing so, Kabbage has established a novel approach for reducing the information risk associated with evaluating loan applications.

While the innovative process of obtaining a loan from Kabbage seems straightforward and user-friendly, potential users of Kabbage also need to acknowledge possible drawbacks. For example, online customer reviews of Kabbage's services are somewhat inconsistent. While the Better Business Bureau and Trustpilot generally present positive assessments, outlets such as Sitejabber, Consumer Affairs, and Credit Karma typically have unfavorable reviews. Similar to the way that Kabbage uses data from social media in its loan evaluation process, potential borrowers should also consider the feedback that Kabbage's customers provide before deciding whether Kabbage can best meet their financing needs.

Applicants should also be aware of the potential costs of using Kabbage as a source of financing. Recent analyses suggest that the mean annual percentage rate (APR) for Kabbage is

40% and can range anywhere from 20% and 80%. While it is typical for online and alternative lenders to charge rates in the range of 13% to 71%, the rates that Kabbage charges are considerably higher than the rates charged by traditional banks, which typically range from 4% to 13% (ValuePenguin 2019; Prakash 2019). Nevertheless, small business owners who use Kabbage for their financing have likely exhausted their options for other, less expensive funding sources. However, as these businesses grow, they may eventually have access to other lenders that offer lower borrowing costs. These lenders may require the preparation of financial statements that are accompanied by some form of assurance, and these additional costs will partially offset the savings from lower interest rates. The applicants will need to compare 1) the relative costs and benefits of preparing financial reports while obtaining less expensive funding from traditional lenders and 2) the higher borrowing costs associated with online lenders.¹

Implications for the Financial Reporting Process and the Auditing Profession

The innovations enabling Kabbage to disrupt the lending industry can provide valuable insight into the changes occurring within the auditing profession. Kabbage's data aggregation process reduces the need for small businesses to prepare financial statements, obtain assurance, and communicate the results to lenders. Similarly, future accountants and auditors need to recognize how new technology, for example, blockchain, can be expected to disrupt the financial reporting and assurance process. Despite this disruption, the financial reporting process will

¹ While the primary purpose of an audit is to provide reasonable assurance that financial statements fairly present the operations and financial position of the audited companies (AICPA 2015c), small businesses may accrue additional benefits of having an audit performed. For example, the accounting staff of audited entities often receive feedback on their accounting and financial statement preparation processes. As such, audits can be a catalyst for employee training and development. Additionally, auditing procedures may identify internal control weaknesses and inefficiencies in financial reporting and other business processes. The communication of these observations to management and those charged with governance provides meaningful feedback that can be used to improve the overall effectiveness and efficiency of these businesses' operations (AICPA 2015b). With this in mind, management should consider these qualitative factors when evaluating the potential costs and benefits of having an audit.

continue to provide valuable information to aid external stakeholders with decisions about resource allocations (FASB 2018). Furthermore, audits will still be needed to reduce information risk and provide assurance that financial statements fairly present the operations and financial position of the audited companies (AICPA 2015c). However, the ways that financial statements are prepared and audited will undoubtedly change. By anticipating the future and developing the skills that are required to fully embrace the forthcoming changes, the next generation of auditors will be poised to turn the challenges created by disruptive technology into opportunities that will redefine the profession.

The following question set is designed to encourage you to review many fundamental concepts of auditing while also considering how disruptive technology can be expected to change the auditing profession. The questions will encourage you to recognize the importance of becoming a lifetime learner and to anticipate the skills that will be required for future auditors.

QUESTIONS

1. Comparisons can be drawn between Kabbage's loan approval process and the overall financial reporting environment. To examine the similarities, please respond to the following:
 - a. Summarize Kabbage's process for obtaining an understanding of the financial position and performance of its applicants and discuss how its process creates a competitive advantage over other lenders.
 - b. Explain how the technology utilized by Kabbage could influence the need for businesses to prepare and disseminate financial statements. Describe the potential implications for the auditing profession.
 - c. Describe the possible costs or concerns (including those related to privacy and transparency) that businesses might have when providing Kabbage with direct access to their information. Explain how audit clients might have similar concerns when providing auditors with direct access to their data.

2. During fieldwork, auditors "design and perform audit procedures to obtain sufficient appropriate audit evidence to be able to draw reasonable conclusions" that form the basis of the opinion (AICPA, 2015a). Similarly, Kabbage gathers evidence to assess the financial position and creditworthiness of its applicants. Please respond to the following:
 - a. Create a list of the possible data sources that Kabbage could use in its credit analysis and then assess the reliability of each source using the criteria established by AU-C 500 *Audit Evidence* (AICPA 2015a).
 - b. Identify and explain which financial statement accounts and related financial statement assertions as identified by AU-C 315 *Understanding the Entity and Its*

Environment and Assessing the Risks of Material Misstatement (AICPA 2015d)

would be most applicable to Kabbage's lending decisions.

- c. Please specifically describe how Kabbage might evaluate the *existence* and *completeness* of an applicant's revenue transactions.
 - d. Explain which financial statement accounts and related assertions would be most difficult for Kabbage to evaluate since it only assesses transactional data.
3. Kabbage analyses quantitative and qualitative data to assess the creditworthiness of its applicants. Compare Kabbage's data aggregation process to the analytical procedures that auditors often use to assess risk. Be sure to explain similarities and differences.
 4. Businesses that seek financing from Kabbage have fairly low complexity and likely use a cash basis of accounting. As a result, it may be easier to automate the evaluation process for these entities than it would be for larger enterprises that use an accrual basis of accounting. Provide examples of accounts that would likely be easy to evaluate through automated auditing. Then, provide examples of accounts that would be more difficult to assess through automated procedures. Please justify your answers.
 5. Disruptive technology will provide numerous opportunities for auditors to become more efficient and effective at providing services to clients. In many cases, clients already provide their auditors with direct access to transactional data. With new technology, audit firms can increasingly perform new and more advanced procedures to identify potential risks, control deficiencies, and material misstatements. Please respond to the following:
 - a. Describe how advanced data analytics can increase the efficiency and effectiveness of financial statement audits.

- b. Identify several practical and logistical challenges that auditors might experience when employing advanced data analytics.
 - c. Describe how the size, type, and location of audit clients could affect the use of advanced data analytics in audits.
- 6. Kabbage frequently incorporates customer feedback and social media activity (e.g., Facebook and Twitter activity) into its credit evaluation process. Please consider the following questions related to the use of online customer feedback and social media activity.
 - a. Detail factors that might positively and negatively influence the reliability of online customer reviews and social media data.
 - b. Since customer reviews and other types of social media activity are often captured in an unstructured form, explain the differences between unstructured and structured data.
 - c. Provide examples of how the analysis techniques for structured and unstructured data might differ.
 - d. Discuss how an auditor could potentially use social media data to assess risk and gather evidence.
- 7. Blockchain technology has important implications for the auditing profession. The disruption caused by Kabbage in the lending industry is similar to the disruption that blockchain technology can bring to the financial reporting and auditing processes. For example, the public recording and distribution of transactional data that is verified by all parties (i.e., the buyer and seller) could potentially eliminate the need for auditors to complete substantive tests of details on that data. To further explore the expected effects of blockchain technology, please respond to the following:

- a. Identify and explain which audit cycles and financial statement accounts will most likely be affected by blockchain technology. In your response, provide examples of how companies are already implementing blockchain technology.
 - b. Even though blockchain will likely reduce the need for auditors to perform substantive procedures on transactional data recorded on a distributed ledger, auditors will still need to gather evidence to support the financial statement assertions such as completeness and accuracy. Describe the procedures that auditors would most likely perform. In doing so, please consider the audit guidance for testing automated elements of clients' internal controls that is provided in AU-C 315 *Understanding the Entity and Its Environment and Assessing the Risks of Material Misstatement* (AICPA 2015d).
 - c. As a distributed ledger, blockchain can provide transparency of transactional data to everyone with access to the blockchain. Although there are positive aspects to this level of transparency, please provide examples of how increased transparency might be counterproductive for a business or industry.
8. Disruptive technology provides both challenges and opportunities for the auditing profession. As you prepare for your future career, please consider the following:
- a. Describe additional skills (beyond those already embedded in your accounting program) that new auditors will need to acquire to best respond to the challenges and opportunities presented by disruptive technology.
 - b. Identify several resources that auditors and audit teams could seek to obtain the skills you identified.

REFERENCES

American Institute of Certified Public Accountants (AICPA). 2015a. *Audit Evidence*. AU-C Section 500. New York, NY: AICPA.

American Institute of Certified Public Accountants (AICPA). 2015b. *Do I want or need a financial statement audit?* New York, NY: AICPA. Available at:

<https://www.aicpa.org/InterestAreas/NotForProfit/Resources/GovernanceManagement/DownloadableDocuments/not-for-profit-do-i-need-an-audit.pdf>

American Institute of Certified Public Accountants (AICPA). 2015c. *Guide to Financial Statement Services: Compilation, Review and Audit*. New York, NY: AICPA. Available at:

<https://www.aicpa.org/InterestAreas/PrivateCompaniesPracticeSection/QualityServicesDelivery/KeepingUp/DownloadableDocuments/financial-statement-services-guide.pdf>

American Institute of Certified Public Accountants (AICPA). 2015d. *Understanding the Entity and Its Environment and Assessing the Risks of Material Misstatement*. AU-C Section 315. New York, NY: AICPA.

Credeur, M. J. 2013. Kabbage gets \$75 million debt deal from Victory Park, Thomvest.

Bloomberg (April 3). Available at: <http://www.bloomberg.com/news/articles/2013-04-03/kabbage-gets-75-million-debt-deal-from-victory-park-thomvest>

Dahl, D. 2015. The six-minute loan: How Kabbage is upending small business lending—and building a very big business. *Forbes* (May 6). Available at:

<https://www.forbes.com/sites/darrendahl/2015/05/06/the-six-minute-loan-how-kabbage-is-upending-small-business-lending-and-building-a-very-big-business/#9470aca90428>

- Farr, C. 2013. Kabbage wants to provide loans to 100K small businesses this year. *Venture Beat* (April 3). Available at: <http://venturebeat.com/2013/04/03/kabbage-wants-to-provide-loans-to-100k-small-businesses-this-year/>
- Fest, G. 2013. Kabbage's fresh ideas for small business finance. *American Banker Magazine*. Available at: http://www.americanbanker.com/magazine/123_6/kabbage-fresh-idea-for-small-business-finance-1059175-1.html
- Financial Accounting Standards Boards (FASB). 2018. *Conceptual Framework for Financial Reporting*. Statement of Financial Accounting Concepts No. 8. Norwalk, CT: FASB.
- Kabbage. 2015. *Meet the businesses behind the billion*. Available at: <https://www.kabbage.com/blog/businesses-behind-the-billion>
- Max, S. 2012. More likes, more cash? Kabbage provides working capital for online merchants. *Time* (July 13). Available at: <http://business.time.com/2012/07/13/more-likes-more-capital-kabbage-looks-at-everything-from-sales-history-to-social-media-to-determine-whether-online-merchants-are-credit-worthy/>
- Mitroff, S. (2012). Kabbage raises some serious cabbage for small-business loans. *Wired* (September 19). Available at: <http://www.wired.com/2012/09/kabbage-gets-30-million-for-its-small-business-loans/>
- Prakash, P. (2019). Kabbage review. *Fundera* (December 19). Available at: <https://www.fundera.com/business-loans/lender-reviews/kabbage-reviews>
- Wendel, C. 2015. Making small business loans profitably. *Bank Administration Institute* (July 7). Available at: <https://www.bai.org/banking-strategies/article-detail/making-small-business-loans-profitably>

ValuePenguin. 2019. *Average Small Business Loan Interest Rates in 2019: Comparing Top Lenders*. Available at: <https://www.valuepenguin.com/average-small-business-loan-interest-rates>

Wisniewski, M. 2017. Data aggregation's new frontier: Lending decisions. *American Banker* (March 6). Available at: <https://www.americanbanker.com/news/data-aggregations-new-frontier-lending-decisions?tag=00000158-f34a-d841-ab78-f3fa055f0001>

CASE LEARNING OBJECTIVES AND IMPLEMENTATION GUIDANCE

Background

“Challenges can lead to new opportunities” was the central theme of the acceptance speech that Kimberly Ellison-Taylor delivered while serving as chairperson of the American Institute of CPAs (AICPA) from 2016 to 2018 (Sheridan 2016). Although her sage advice could apply to almost any industry, she encouraged CPAs to embrace the evolution of the business environment and the advances in disruptive technology that continue to transform all aspects of the accounting profession.

Despite the changes that are occurring, financial reporting will continue to provide financial information about businesses that help external stakeholders make decisions about resource allocations (FASB 2018). Audits will still be needed to reduce information risk and provide assurance that financial statements fairly present, in all material respects, the operations and financial position of the audited companies (AICPA 2015). However, the process by which financial statements are produced and audited will undoubtedly be changed by disruptive technology.

Innovation caused by disruptive technology significantly alters the way that businesses or entire industries operate, and entirely new businesses and business models often emerge (Christensen 1997). In the context of audits, disruptive technology is changing the way that financial information is compiled, objectively verified, and communicated to users. Third-party aggregators such as PayPal, Venmo, and Apple Pay facilitate the transfer of funds and provide reporting of transactional data. Blockchain technology and digital currencies are increasing the transparency of transactions through public ledgers. Robotic process automation is rapidly replacing manual and repetitive tasks which then permits human capital to focus on more critical analysis and further process improvements.

It can be difficult to fully appreciate the impact that disruptive technology will have on the production and verification of financial information. However, an understanding of Kabbage, a disruptive innovator in the lending industry, can help students evaluate the many possible changes that are likely to occur within the auditing profession. This FinTech¹ company developed a fully automated lending platform to serve non-traditional and small businesses that often do not even prepare financial statements. By understanding the impact that Kabbage is having on the lending industry, and its innovative process for assessing the creditworthiness of its applicants, students will be better poised to understand the effects that disruptive technology can have on the auditing profession. In contrast to the publicized concerns that the present rapid pace of innovation may cause accountants and auditors to become obsolete (e.g., Arrowsmith 2019), CPAs should embrace Ellison-Taylor's advice and view disruptive technology as an opportunity to better serve clients and users of financial information.

Through the lens of Kabbage, students evaluate ongoing changes in the auditing profession, understand the fundamental characteristics of audits (e.g., financial statement assertions, evidence, and analytical procedures) which will likely remain unchanged, and describe skills that future auditors will need to possess to thrive in this new environment.

How Challenges Can Create Opportunities

To evaluate the impact of disruptive technology on the auditing profession, it is helpful to consider how challenges of non-traditional and small businesses catalyzed innovations in the lending industry. Small and non-traditional businesses typically find it challenging to obtain loans. They often have high levels of operational risk, and approximately 75% of them do not

¹ FinTech refers to the use of various forms of technology such as automation and data analysis within financial services companies. The expected benefits of FinTech include lower costs, higher quality of services, and innovative ways to assess risks (Economist 2015; Marr 2017).

prepare financial statements (Fest 2013). When financial statements are prepared, they often lack any form of assurance (Dahl 2015; Klein 2014). These businesses typically experience lower loan approval rates, higher interest rates, and more restrictive collateral requirements (Miller and Smith 2002). While these conditions became particularly problematic during the last recession (Mills 2014), the associated challenges created opportunities for new lending methods.

The economic pressures created during the Great Recession (2007-2009) coincided with emerging and disruptive e-commerce platforms, which allowed entrepreneurs to reach new customers through the internet. In 2007, online sales accounted for only three percent of total retail sales, but that amount increased to over ten percent in 2018, which is approximately \$137.7 billion in online sales (U.S. Department of Commerce 2019). As a result, consumers are now more likely to make purchases from websites and online distributors such as Amazon than they were in the pre-recession era (PwC 2017). The continued growth in e-commerce has simultaneously changed both our daily lives and the global economy.

Before the recession, companies like Uber, Airbnb, and Etsy did not exist or were in their infancy. The eCommerce giants eBay, Amazon, Apple, and Google were much smaller. However, these are the companies responsible for facilitating the development of online exchange platforms, creating opportunities for non-traditional jobs, and enabling more people to become active participants in the economy by launching their small businesses. Uber and Lyft allow people with a driver's license and a clean driving record to compete with the traditional taxicab industry. Airbnb lets anyone with an extra room in their home or vacation property to effectively run a hotel, and companies such as Etsy, Amazon, and eBay reduce geographic constraints and empower entrepreneurs to sell products anywhere in the world. These examples are only a few illustrations of how technology has contributed to the significant growth in the number of small and non-traditional businesses. However, the same entrepreneurs need access to

capital to grow and sustain their business operations, hire employees and purchase assets such as inventory, supplies, or equipment (NSBA 2017). Traditional banks have not been able to keep pace with the increased demand for financing, thereby providing the opportunity for Kabbage to develop its automated lending platform. Similar innovations are now disrupting the financial reporting process.

Case Learning Objectives

Disruptive technology, new business ventures, and increased availability of data are changing the way that financial statements are prepared and how assurance is provided. To maximize learning outcomes and to encourage students to think about the effect that innovation is having on the auditing profession, important parallels are drawn between Kabbage's credit approval process and financial statement auditing concepts (e.g., audit evidence, financial statement assertions, blockchain, automation, and data analytics). This case study also asks students to assess the potential applications of social media and other qualitative data sources in audits. Finally, it encourages students to evaluate the future of the auditing profession and to describe the skills that auditors of the future will need to possess. The specific learning objectives of the case study are as follows:

1. Assess how disruptive technology might affect the demand for traditional financial statements and assurance.
2. Evaluate which areas of audits are more and less likely to be changed by advances in technology.
3. Identify how advances in technology such as blockchain, social media, robotic process automation, and advanced data analytics can improve the assurance process.
4. Describe the skills that are necessary for future success in the auditing profession.

The case accomplishes the four objectives by providing students with an opportunity to compare Kabbage's loan approval process to the overall financial reporting environment and assess the potential strengths and weaknesses of the online lender's automated approach. Kabbage can quickly process loan applications with a lower cost structure and reduce information risk. However, Kabbage's automated process mostly applies to small and non-complex businesses. The exclusive use of transactional data also has limitations and can potentially increase privacy and security risks. Through this lens, students evaluate the benefits and challenges associated with disruptive technology (e.g., blockchain, social media, robotic process automation, and advanced data analytics) and how innovation can affect the financial reporting and auditing processes.

This case study is complementary to other cases that ask students to reflect on (1) the risks associated with manual accounting systems (Gifford and Howe 2012), (2) the application of data analytics and data visualization (Igou and Coe 2016; Kokina, Pachamanova, and Corbett 2017; Cunningham and Stein 2018; Hoelscher and Mortimer 2018; Fay and Negangard 2017; Enget, Saucedo, and Wright 2017), (3) the consideration of financial statement assertions and attributes of evidence within specific audit areas (Green 2013; Bagley and Harp 2012), and (4) analytical procedures (Bagley and Harp 2012; Popova and Stein 2016; Gujarathi 2017).

Implementation Guidance

The case study is designed to allow for flexibility in its implementation, and it is well suited for undergraduate or graduate auditing courses. The authors implemented earlier versions of the case as an in-class group assignment. In each instance, instructors provided a brief introduction of the case, and groups were allotted time to read the materials, research their assigned questions, and to plan a presentation of their answers to the class. During the class

presentations, relevant notes from the discussion were written on the board. At the end of each group presentation, additional follow-up questions were asked of the group and the audience to ensure that the appropriate parallels were drawn between Kabbage and related auditing concepts. Approximately twenty to thirty minutes at the end of class were reserved to debrief the assignment. Instructors were able to cover all the questions in one class session. However, the instructors worked diligently to keep the student groups on task and to guide the debrief so that key topics were addressed efficiently and effectively. Depending on the institution, instructors had an hour and fifteen minutes or an hour and forty-five minutes of class time allotted to this in-class assignment.

After receiving feedback on the original case study, a revised version was implemented as a take-home assignment. The case was distributed and briefly introduced to the students one week before it was due. Students independently completed the case requirements and submitted their answers as an individual assignment. Upon the assignment's due date, an entire class period was allocated for a debriefing session. This format facilitated an exchange of ideas and allowed for brainstorming about the effects that disruptive technology can have on the financial reporting and auditing processes.

Both delivery methods (i.e., the in-class group exercise and the individual take-home assignment) allowed the students to achieve the intended learning objectives. Instructors who plan to use the case as an in-class exercise should assign the case as pre-class reading to maximize the amount of class time available for students to address the questions. Alternatively, instructors might spread the case over two class periods to allow for a more comprehensive discussion.

Table 1 provides a mapping of the individual case questions to the respective learning objectives. This provides instructors with greater flexibility and enables them to focus on the

learning objective(s) that are most relevant to their courses. For example, instructors who are primarily interested in facilitating student learning about advances in technology such as blockchain, robotic process automation, and data analytics, can easily identify the case requirements that correspond directly with that learning objective.

| Insert Table 1 here |

Classroom Validation

Implementation occurred in undergraduate auditing courses at two different institutions – a small liberal arts college and a large public university. A total of fifty-six students completed earlier versions of the case and each of these students completed a pre-case and post-case questionnaire to provide evidence of learning. Students responded to the pre-case questionnaire before receiving any of the case materials. The post-case questionnaire was administered at the end of the class period in which the case was discussed. After several revisions, the case was implemented again at one of the universities that initially used it. Twenty-four students completed the revised case and provided post-case assessments of the learning objectives.

Table 2 summarizes the initial student evaluations of the case, and Table 3 summarizes the final round of evaluations for the revised case. In all instances, students provided favorable evaluations of the case. Students rated their agreement with statements about the case’s learning objectives on a five-point Likert scale with endpoints anchored at 1 = strongly disagree and 5 = strongly agree. For instances in which both pre-case and post-case assessments were available, the post-case ratings are significantly greater than the pre-case assessments for each of the learning objectives ($p < 0.01$). For instances in which only post-case assessments are available, the mean responses are all greater than the midpoint of the scale (all p -values < 0.001). Collectively, data suggests that the case achieved its objectives for all uses. Additionally, 97

percent² (100 percent) of students who completed the earlier (revised) versions of the case recommended its use at other universities.

| Insert Tables 2 and 3 here |

In all instances, the case was introduced near the end of the semester, and students noted that it served as a beneficial review of fundamental auditing concepts. Students also expressed that studying Kabbage and its loan approval process allowed them to understand core auditing concepts at a deeper and more meaningful level, thereby helping them understand the potential wider application of the concepts. One student commented, “It displays [a] real-world situation, other than just audits, that we may be facing in the future.” The case also conveyed the value of assurance services to students, even to those who plan to pursue careers outside auditing. Finally, students seemed very interested in considering the influence of disruptive technology and its expected effects on the auditing profession. One student noted, “It gives you an idea of how companies are using analytics in real-life and how they apply them to their companies.” Another student stated, “Most students may not be aware of the changes that could impact the auditing world,” which is precisely why the case study is so effective.

² During the assessment process of the earlier version of the case, two students chose not to respond to the question asking if they would recommend using the case at another university. Their responses were treated as a recommendation against it. However, if these two responses are excluded from the calculation, the recommendation rate is 100 percent.

REFERENCES

- American Institute of Certified Public Accountants (AICPA). 2015. *Guide to Financial Statement Services: Compilation, Review and Audit*. New York, NY: AICPA. Available at:
<https://www.aicpa.org/InterestAreas/PrivateCompaniesPracticeSection/QualityServicesDelivery/KeepingUp/DownloadableDocuments/financial-statement-services-guide.pdf>
- Arrowsmith, R. 2019. French company promises to replace accountants with bots. *Accounting Today* (June 5). Available at: <https://www.accountingtoday.com/news/french-company-georges-promises-to-replace-accountants-with-bots>
- Bagley, P. L., and N. L. Harp. 2012. Shoe Zoo, Inc.: A practice in electronic work papers, tick mark preparation, and client communication through the audit of property, plant, and equipment. *Issues in Accounting Education* 27 (4): 1131–1151.
- Christensen, C., 1997. *The innovator's dilemma*. Harvard Business School Press, Cambridge, Mass.
- Cunningham, L. M., and S. E. Stein. 2018. Using visualization software in the audit of revenue transactions to identify anomalies. *Issues in Accounting Education* 33 (4): 33–46.
- Dahl, D. 2015. The six-minute loan: How Kabbage is upending small business lending—and building a very big business. *Forbes* (May 6). Available at:
<https://www.forbes.com/sites/darrendahl/2015/05/06/the-six-minute-loan-how-kabbage-is-upending-small-business-lending-and-building-a-very-big-business/#9470aca90428>
- Economist. 2015. The fintech revolution. *The Economist* (May 9). Available at:
<http://www.economist.com/news/leaders/21650546-wave-startups-changing-finance-for-better-fintech-revolution>

- Enget, K., G. D. Saucedo, and N. S. Wright. 2017. Mystery, Inc.: A Big Data case. *Journal of Accounting Education* 38: 9–22.
- Fay, R. and E. M. Negangard. 2017. Manual journal entry testing: Data analytics and the risk of fraud. *Journal of Accounting Education* 38: 37-49.
- Fest, G. 2013. Kabbage’s fresh ideas for small business finance. *American Banker Magazine*. Available at: http://www.americanbanker.com/magazine/123_6/kabbage-fresh-idea-for-small-business-finance-1059175-1.html
- Financial Accounting Standards Boards (FASB). 2018. *Conceptual Framework for Financial Reporting*. Statement of Financial Accounting Concepts No. 8. Norwalk, CT: FASB.
- Gifford, R., and H. Howe. 2012. Rosie’s East End Restaurant: An experiential introduction to auditing. *Journal of Accounting Education* 40 (2): 207–219.
- Green, W. 2013. Key considerations in the audit of inventory: A practice-oriented learning case utilizing “diamonds.” *Issues in Accounting Education* 28 (4): 945–964.
- Gujarathi, M. R. 2017. Diamond Foods, Inc.: A comprehensive case in financial auditing. *Issues in Accounting Education* 32 (1): 95–112.
- Hoelscher, J. and A. Mortimer. 2018. Using Tableau to visualize data and drive decision-making. *Journal of Accounting Education* 44: 49–59.
- Igou, A., and M. Coe. 2016. Vistabeans coffee shop data analytics teaching case. *Journal of Accounting Education* 36: 75–86.
- Klein, K. 2014. Funding a new small business? Don't bother with banks. *Bloomberg Business* (February 13). Available at <http://www.bloomberg.com/bw/articles/2014-02-13/funding-a-new-small-business-dont-bother-with-banks>

- Kokina, J., D. Pachamanova, and A. Corbett. 2017. The role of data visualization and analytics in performance management: Guiding entrepreneurial growth decisions. *Journal of Accounting Education* 38: 50–62.
- Marr, B. 2017. The complete beginner's guide to FinTech everyone can understand. *Forbes* (February 10). Available at: <https://www.forbes.com/sites/bernardmarr/2017/02/10/a-complete-beginners-guide-to-fintech-in-2017/2/#241625e85b25>
- Miller, J.R., and L. M. Smith. 2002. The effects of the level of assurance, accounting firm, capital structure, and bank size on bank lending decisions. *Journal of Accounting, Auditing & Finance* 17 (1): 51–71.
- Mills, K. 2014. Why small-business lending has not recovered. *Forbes* (August 4). Available at: <https://www.forbes.com/sites/hbsworkingknowledge/2014/08/04/why-small-business-lending-has-not-recovered/#709133ca5587>
- National Small Business Association (NSBA). 2017. *2016 Year-End Economic Report*. Washington, D.C.: NSBA. Available at: <http://www.nsba.biz/wp-content/uploads/2017/02/Year-End-Economic-Report-2016.pdf>
- Popova, V. K., and S. E. Stein. 2016. Trading Styles, Inc.: An analysis of the going concern assessment. *Issues in Accounting Education* 31 (3): 355–366.
- PwC. 2017. *2017 Retail Industry Trends: Showrooms, Consumer Experience, and Compelling Economics*. Available at: <https://www.strategyand.pwc.com/media/file/2017-Retail-Industry-Trends.pdf>
- Sheridan, T. 2016. For CPAs, challenges can lead to new opportunities. *AccountingWEB* (December 15). Available at: <http://www.accountingweb.com/practice/practice-excellence/for-cpas-challenges-can-lead-to-new-opportunities>

U.S. Department of Commerce. 2019. *Quarterly Retail E-commerce Sales: 1st Quarter 2019*.

Washington, D.C.: U.S. Census Bureau News. Available at:

https://www.census.gov/retail/mrts/www/data/pdf/ec_current.pdf

TABLE 1

Mapping of Case Questions to the Learning Objectives

LO #	Learning Objective	Case Question(s)
1	Assess how disruptive technology might affect the demand for traditional financial statements and assurance.	1 and 2
2	Evaluate which areas of the audit are more and less likely to be changed by advances in technology.	2, 3, and 4
3	Identify how advances in technology such as blockchain, robotic process automation, and advanced data analytics can improve the assurance process.	4, 5, 6, and 7
4	Describe the skills that are necessary for future success in the auditing profession.	8

TABLE 2**Student Learning and Efficacy: Self-Assessment Results from Earlier Versions of the Case
(n = 56)**

Likert-Scale Question ^a	Self-Assessment Mean (Pre-Case)	Self-Assessment Mean (Post-Case)	t-value	p-value
I understand the influence of information risk in the context of lending decisions and financial statement audits.	3.88	4.23	3.299	0.001
I feel confident in my ability to explain the process that traditional and non-traditional lenders use to evaluate loan applicants.	2.70	4.20	9.902	<0.001
I understand the varying types and levels of assurance that CPAs can provide.	4.09	4.39	2.811	0.006
I feel confident in my ability to recognize and explain the various attributes of audit evidence.	3.68	4.07	2.969	0.004
I feel confident that I can explain financial statement assertions and evaluate the risk of misstatements in lending contexts.	3.60	4.00	2.812	0.006
I understand how CPAs can incorporate social media and other non-financial information into their procedures.	2.79	4.34	10.024	<0.001
I understand the benefits and intersection of analytical procedures and data analytics.	3.61	4.20	4.147	<0.001

^a The Likert scale was anchored with endpoints at 1 = strongly disagree and 5 = strongly agree. Larger values represent favorable perceptions of the case.

TABLE 3

**Student Learning and Efficacy: Self-Assessment Results from the Final Versions of the Case
(n = 24)**

Likert-Scale Question ^a	Self-Assessment Mean (Post-Case)	Comparison to the midpoint value of the scale (3)	
		t-value	p-value
I can better evaluate the likely impact that disruptive technology will have on the need for traditional financial statements and assurance.	4.00	9.59	<.001
I can better evaluate areas of the audit that will be changed by technology and those that may not.	4.17	4.70	<.001
I can better describe how advances in technology such as blockchain, robotic process automation, and data analytics can assist in the assurance process.	3.83	8.14	<.001
I can better describe the skills that are necessary for future auditors.	4.13	8.11	<.001

^a The Likert scale was anchored with endpoints at 1 = strongly disagree and 5 = strongly agree. Larger values represent favorable perceptions of the case.