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How Technology Can Eliminate Busy Season

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HONORS CAPSTONE ABSTRACT

Busy season is an overwhelming period for accountants who become inundated with an enormous amount of work that needs to be completed before looming deadlines. The purpose of this research project is to analyze how further use of technology can lessen or altogether eliminate busy season for audit and tax professionals in public accounting.

Four methods and technologies are explored in this paper: continuous auditing, continuous monitoring, robotic process automation, and 5G technology. Continuous auditing and continuous monitoring aim to transform current periodic audits into a continual process. Robotic process automation focuses on streamlining repetitive, straightforward tasks for tax and audit professionals to reduce that respective workload and shift their focus towards higher-skilled work. 5G technology is explored as a means to enhance current procedures and assist in the execution of the first three methods. Overall, by incorporating any one to all four of these methods and technologies, public accounting firms have the capability to vastly reduce and eliminate the need for a busy season.

This paper was compiled of journals, articles, and brochures published by public accounting firms, CPAs, as well as technology specialists. In addition, I drew upon my personal knowledge and experiences of some topics and technologies.
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**Introduction**

My capstone project focuses on whether implementation of innovative processes and technologies can eliminate the need for public accounting’s busy season or not. I have often wondered why there is still a need for so much manual work to be completed during this time period, especially with the abundance of artificial intelligence and technology available. The accounting world is in no way stagnant, as it is constantly changing to adapt to new regulations and remain competitive; so why does busy season seem to be stagnant?

This paper begins by discussing why busy season is a problem. Next, the current audit process is described in relative detail to aid in understanding what areas continuous auditing specifically applies to. A brief description of the current tax process is given; it is much shorter in length due to the complexity of tax returns based on client-type. The focus of the paper switches to the new methods and technologies audit and tax practices can implement to make their work more efficient, especially during busy season. My capstone concludes with a summation of the research findings, along with my opinion about the future status of busy season in public accounting.
The Problem with Busy Season

This paper focuses on utilizing technology to eliminate busy season, so it is important to acknowledge why busy season is a problem. Although it has been around for quite a long time, there is currently no need for busy season to continue in light of the technological resources available to accountants and their clients. This section of the paper discusses why busy season is a problem that should be eradicated.

Accounting students are taught during their college studies that, if they choose to work for a public accounting firm, the hours they work will increase significantly during the first three to four months of the year. Although working 60 or more hours per week sounds doable on paper, constantly working this schedule can take a toll on people. Many accountants become accustomed to working 12-hour days instead of the usual 8-hour days, and six days a week instead of five. Workload increases during this period due to financial reporting deadlines for clients who have calendar year ends. This increase in work along with impending deadlines causes an impeccable amount of stress and burnout for accounting professionals in a high-pressure atmosphere.

Although accountants deal with all the increased stress and work during busy season, many firms provide different services to try to help make busy season more bearable. For most firms, meals are usually provided, and parties are held to celebrate the end of busy season. Vacations are likely to occur immediately after deadline, and the recuperation period begins. However, free meals and vacations after the fact are not enough to justify the excruciating amount of work accountants deliver during busy season. With the vast amount of technology at their fingertips, the accounting world can implement changes for the better and see a long-term return on investment.
Current Audit Process

Overview

Before delving into new ways to incorporate technology to the audit process, this paper will provide an understanding as to how a financial statement audit is currently conducted. It is difficult to pinpoint the exact process since each firm has their own unique methods and processes may vary based on client size; however, they all follow a similar framework to carrying out audits. This portion of the paper focuses on the differences and relationship between internal and external auditors and the major steps in completing an audit, along with what technology is utilized at each step.

Difference Between Internal and External Auditors

Internal auditors are employees of individual companies that work throughout the year to perform key functions of a company’s operations. The Institute of Internal Auditors (IIA) is the primary organization overseeing and supporting internal auditors. Its mission is “to enhance and protect organizational value by providing risk-based and objective assurance, advice, and insight” (Mission of Internal Audit, n.d.). Internal auditors focus on improving an organization’s processes, as well as “bringing a systematic, disciplined approach to evaluate and improve the effectiveness of risk management, control, and governance processes” (Messier, Glover, & Prawitt, 2017, p. 38). In order to achieve their mission and carry out their organization’s goals, internal auditors follow a collection of core principles laid out by the IIA.

External auditors, on the other hand, are independent of the company; they are also referred to as independent auditors. Typically, external auditors are certified public accountants (CPAs) working as sole proprietors or for a public accounting firm. Their main responsibility is to audit and report on the accuracy of the published financial statements of various entities, such
as publicly traded and private companies, partnerships, and municipalities. In addition to financial statement audits, external auditors can also perform other audits for entities, including compliance, operational, and forensic audits (Messier, Glover, & Prawitt, 2017, p. 38).

Although internal and external auditors have distinctly different responsibilities, it is crucial for the two to work together. Close communication ensures that the external auditor is knowledgeable about the high-risk areas of the entity and how emerging issues impact the business. Audit planning between them guarantees that they will minimize any duplicate testing and enhance potential areas of collaboration.

**Client Acceptance / Continuance**

There are several aspects of a prospective client that public accounting firms take into consideration before agreeing to accept them as a client. The process usually begins with the successor auditor inquiring with the predecessor auditor about the client. Conversations between the two can include topics such as integrity of management, any disagreements the predecessor auditor had with management about accounting or auditing related topics, and the predecessor’s knowledge about why there is a change of auditors. The successor auditor should also get permission from the client to review the predecessor’s audit workpapers; doing this allows the successor to gain access to crucial ongoing audit-relevant information. The communication between auditors can be either written or oral, based on what the successor auditor prefers.

Public accounting firms intermittently evaluate whether to continue their relationship with current clients or not. Majority of the time, this evaluation takes place “at or near the completion of an audit or when some significant event occurs” (Messier, Glover, & Prawitt, 2017, p. 71). A large factor of whether a relationship will continue or not is the client’s level of risk. In addition, quarrels with clients over fees or disagreements over auditing and accounting
issues will factor into the decision. These evaluations take place internally, and communication with the client is only necessary when terminating the relationship.

**Engagement Letter**

Although the engagement letter is a shorter step, it is one of the most important. To lay out the objectives of the audit, an engagement letter is drafted and signed by both the client and the auditor. This letter is required to be prepared by auditing standards and helps both parties avoid any confusion during the audit. It can also contain information about fees, the auditor’s responsibilities, management’s responsibilities, and additional services to be provided. The engagement letter can be composed through in-person meetings, phone calls, or email.

**Audit Planning**

The audit planning step focuses on the issues the auditor should consider when developing the audit’s overall strategy. By establishing the strategy, the auditor “should determine the scope of the engagement, ascertain the reporting objectives to plan the timing of the audit, and consider the factors that will determine the focus of the audit team’s efforts” (Messier, Glover, & Prawitt, 2017, p. 78). Following this, the auditor creates an audit plan which is a more in-depth documentation of the nature, timing, and extent of the planned audit procedures.

Many factors should be encompassed in the audit plan including an assessment of business risks, determination of materiality, identification of any related parties involved, and an assessment of the need for any specialists (Messier, Glover, & Prawitt, 2017, p. 78). The audit plan is put together annually and can utilize prior year information.

Determining the overall materiality is an important step of the audit planning stage. To conduct a cost-efficient audit, the auditor “designs the audit to provide reasonable assurance of
detecting misstatements that are of sufficient magnitude to affect the judgment of reasonable financial statement users” (Messier, Glover, & Prawitt, 2017, pg. 85). It is up to the auditor to use professional judgment to decide the materiality applicable to the audit. The Public Company Accounting Oversight Board (PCAOB) and Auditing Standards Board (ASB) have established guidance to assist auditors in this step. After determining the overall materiality, the auditor will determine tolerable misstatement followed by evaluating the audit findings near the end of the audit (Messier, Glover, & Prawitt, 2017, pg. 86).

**Audit Risk**

Every audit comes with audit risk, which is the risk that the auditor will issue an unqualified audit opinion when the financial statements are materially misstated (Messier, Glover, & Prawitt, 2017, pg. 100). Inherent risk, control risk, and detection risk combined make up the overall audit risk that auditors determine.

Inherent risk is the probability that a material misstatement that occurred was due to the absence of internal controls. Control risk is the probability that a material misstatement that occurred would not be detected by internal controls in place. Inherent and control risk are referred to as risk of material misstatement or client risk since they stem from decisions made by the entity (Messier, Glover, & Prawitt, 2017, pg. 101). Detection risk is the probability that a material misstatement, which was not prevented or detected by internal controls, will go undetected by the auditor’s procedures. Detection risk is never zero “because the auditor seldom examines 100 percent of the transactions in an account” (Messier, Glover, & Prawitt, 2017, pg. 101). In an effort to prevent any improper opinion, the auditor conducts the audit specifically to reduce audit risk to an acceptably low level before issuing an opinion.

**Risk Assessment**
The purpose of risk assessment tests is to “obtain an understanding of the entity and its environment, including its internal control” (Messier, Glover, & Prawitt, 2017, p. 83). This step is crucial for an auditor to determine if the entity’s management’s operations may result in material misstatements. To begin this process, the auditor performs “inquiries of management, other entity personnel, and others outside the entity; analytical procedures; and observation and inspection (Messier, Glover, & Prawitt, 2017, p. 105). Questioning personnel outside of an entity’s management can provide a different perspective than that of those responsible for financial reporting. Analytical procedures take nonfinancial data into consideration alongside financial data. This step can identify more specific risks that are relevant to the audit. The observation and inspection pieces are used to further explore the inquiries of management and other personnel. Auditors utilize a firm-specific audit software to assist in carrying out these procedures (Murphy & Tysiac, 2015).

Another part of the risk assessment step is to assess business risks and if the entity is controlling them or not. To complete this portion, auditors gain information about the nature of the entity; industry, regulatory, and other external factors; objectives, strategies, and related business risks; entity performance measures; and internal control (Messier, Glover, & Prawitt, 2017, p. 106). Altogether, these procedures enable the auditor to assess the risk of material misstatement and tailor the audit to fit the findings. A firm-specific audit software is also utilized at this step.

An auditor is also responsible for performing a fraud risk assessment process. This involves identifying any fraud risk factors, considering unusual relationships that were discovered during analytical procedures, and inquiries of management and the audit committee about their views on fraud risk (Messier, Glover, & Prawitt, 2017, p. 111). Fraud risk
assessments are crucial because there are incentives and opportunities for employees to commit fraud. This process focuses on a lot of communication between the audit engagement team and the client.

**Audit Evidence**

The auditor wishes to gain a sufficient amount of evidence throughout the audit to support the auditor’s opinion about whether the financial statements are fairly presented. Conducting various risk assessment procedures, tests of controls, and substantive procedures provide this evidence. Overall, if the evidence gathered supports management’s assertions, the auditor is able to issue an unqualified opinion.

**Auditing Internal Controls**

An entity’s internal controls are in place to “provide reasonable assurance that assets and records are properly safeguarded, and that the entity’s information system generates information that is reliable for decision making” (Messier, Glover, & Prawitt, 2017, p. 180). An efficient system assists management in evaluating the business and making decisions about relevant issues. Auditing the five components of internal control (control environment, risk assessment, control activities, information and communication, and monitoring activities) also ensures that the entity is compliant with laws and regulations. An auditor must evaluate the design and implementation of controls during each audit. To audit internal controls, auditors use procedures and their audit software to determine that the controls are operating appropriately (Ward, 2017).

**Audit Sampling**

Auditors often need to examine a sample of an entity’s records and transactions to draw conclusions about the fairness of the financial statements (Messier, Glover, & Prawitt, 2017, p. 264). Audit sampling is the process of selecting and evaluating less than 100 percent of an
entity’s records or transactions that the auditor feels are an adequate representation of the population, leading to reasonable, but not absolute, assurance. Sampling risk is the risk that the sample utilized was not representative of the population and lead to an inaccurate conclusion about the account balance or class of transactions (Messier, Glover, & Prawitt, 2017, p. 265-266).

Audit sampling varies based on the size of an auditor’s client. For smaller entities, it may be possible to test all transactions from their fiscal year, but this usually is not possible for a majority of a public accounting firm’s clients. Sampling certifies that an audit will occur in a timely fashion and remain cost-effective for the client. Audit sampling and testing is completed through the firm’s audit software.

**Auditing Business Processes**

A business’ five main processes also need to be audited: revenue, purchasing, human resource management, inventory management, and financing/investing process. Auditing each process involves making sure there is segregation of duties between various functions; if there is not, there could be fraudulent activity taking place.

Auditing the revenue process provides assurance related to order entry, credit authorization, shipping, billing, cash receipts, accounts receivable, and the general ledger (Messier, Glover, & Prawitt, 2017, p. 349). In the purchasing process, the three types of transactions that get audited are the purchase of goods and service, payment of liabilities, and return of goods to suppliers (Messier, Glover, & Prawitt, 2017, p. 389). This part of the audit focuses on requisitioning, purchasing, receiving, invoice processing, disbursements, accounts payable, and the general ledger (Messier, Glover, & Prawitt, 2017, p. 393).

The final process, the financing/investing process, involves an abundance of functions that are tested. Among these are prepaid expenses; intangible assets; property, plant, and equipment; long-term liabilities; stockholders’ equity; and income statement accounts. Altogether, auditing these five business processes provides the auditor with an idea of business operations, proper segregation of duties, and how the respective functions are being reported on.

**Completing the Audit Engagement**

Auditors need to perform a few tasks to wrap up an audit. First, the likelihood of any contingent liabilities, such as pending or potential lawsuits or income tax disputes, needs to be assessed. Various procedures can be conducted to identify contingent liabilities, with most involving reading and reviewing materials that could indicate any threat.

Additionally, auditors need to consider subsequent events before completing the audit. These are events that have occurred after the balance sheet date but before the issuance of the financial statements (Messier, Glover, & Prawitt, 2017, p. 568). If any exist, the subsequent event(s) are required to be included in the financial statements. The procedures for discovering such events include inquiries of management, examining interim financial statements and referring to prior year data, and consulting with legal counsel.
Changes that occurred in internal controls after the balance sheet date but before the issuance of the financial statements need to be disclosed if the change could adversely affect the financial reporting (Messier, Glover, & Prawitt, 2017, p. 571). It is the external auditor’s responsibility to inquire with management about any internal control changes.

To complete the audit, there are additional steps that an auditor must perform. These include performance of final analytical procedures, obtaining a management representation letter, review of working papers, final evaluations, and obtaining an independent review of the engagement (Messier, Glover, & Prawitt, 2017, p. 572). Audit software is used to complete the final analytical procedures, while the remainder of activities focus more with oral and written communication.

**Issuing Audit Opinion on Financial Statements**

Finally, the auditor will issue an opinion on whether the financial statements are fairly presented. If the auditor believes that the financial statements are accurately report and conform to regulations, they will issue an unqualified, or unmodified, opinion. Additional opinions can be issued if, for example, there is an insufficient amount of evidence to form an opinion.

**Current Tax Process**

**Overview**

Similar to audit, tax practices follow a guideline of how to prepare a tax return. The process for preparing tax returns is more complicated than the audit process because of how unique each client is. Preparation is very different for individuals compared to businesses. In addition, a business’ make-up, such as partnership or corporation, changes the process because of the different forms to be completed. This section will focus on discussing the broad framework followed to prepare a tax return for individuals and businesses.
Individual Tax Returns

Individual tax returns are the most complex to prepare because no two clients are the same. Some individuals may only need a handful of forms filled out while others have significant activities, such as investments or partnership involvement. After the client compiles their documents, the information is sent to the firm where a PDF file with all working papers is created.

Once all relevant client documents have been compiled, the firm’s specific tax software is able to read the working papers and populate the corresponding forms. The initial preparer is then responsible for utilizing the prior year tax return and work papers to certify that all the relevant information has been included. The client’s return is sent for review, where it will be assessed and reworked at multiple levels until completed.

Business Tax Returns

There are three major forms of businesses: corporations, partnerships, and S corporations. Preparation of tax returns for these types of businesses have many similarities. To begin, parallel to individual returns, the client sends applicable information to the firm that is uploaded into software holding all the client’s data.

The preparer checks the trial balance to make sure that debits and credits are balanced, and the client’s book income agrees. A client’s book income differs from what taxable income should be, so a Schedule M-1 reconciliation needs to be prepared to achieve that difference. The M-1 adjustments vary based on industry type and the specific client. This schedule is usually completed in Excel. To update the software with the M-1 adjustments, adjusting journal entries are posted, and the preparer verifies that taxable income from the M-1 matches the software’s
taxable income. Based on each client, there are also various significant tax items that must be completed.

After all adjustments and significant tax items have been finished, the preparer can export the data to the tax preparation software, where they will compare the work papers to the tax return and manually make any necessary changes in the return. If the client is a partnership or s corporation, an additional step to complete a partnership allocation workpaper will be completed. Before submitting for review, it is the preparer’s job to make sure the balance sheet ties out. Similar to an individual return, this return is reviewed and reworked by multiple levels before being submitted.

**Continuous Auditing**

**Overview**

Continuous auditing is often lumped together or confused with continuous monitoring. This section of the paper will focus on what continuous auditing is, how effective use of it can improve the current audit process, a process to follow for implementation, and realistic ways it can be implemented regardless of financial resources.

**What is Continuous Auditing?**

Continuous auditing, defined by KPMG, “... consists of the automated collection of audit evidence and indicators by an internal or external auditor from an entity’s IT systems, processes, transactions, and controls on a frequent or continuous basis” (KPMG, 2008, pg. 2). Adopting this type of audit process allows for a more dynamic audit plan compared to the current traditional way of auditing. By analyzing internal controls and testing financial data throughout the year, entities can work with real-time information and improve business operations.
Although the idea of continuous auditing has been around since approximately the 1990s, it has not been widely adopted. Following the Enron and Arthur Andersen scandal, new accounting standards started rolling out from the Securities and Exchange Commission (SEC), and accounting firms had to focus on updating their operations and becoming compliant with the new standards. With this shake-up in the accounting industry, implementing a continuous auditing approach was not a priority. Now, with the abundance of technology available, firms and entities can both benefit from implementing a continuous auditing practice.

There are mainly three ways to apply a continuous auditing approach. First, an entity itself conducts more frequent testing of internal controls. The internal audit department takes on additional responsibility and can communicate more often with management about the status of controls and compliance. Second, a public accounting firm can offer continuous auditing as a service to clients. This allows the external auditors to work with the client throughout the year instead of during its respective audit cycle in busy season. Lastly, the client and accounting firm can both incorporate and continuously work alongside one another to test 100 percent of transactions and analyze internal controls.

**How Continuous Auditing Enhances the Current Audit Process**

Transitioning to a continuous auditing approach is highly beneficial for both public accounting firms and their clients for a multitude of reasons. If internal audit departments update to a continuous auditing system, external auditors would have enough information throughout the year to construct a more effective audit plan than they would with only the annual audit. An auditor can gain a better understanding of business risks because there will be more than enough information to review. Continuous auditing, by testing transactions throughout the year, helps the external auditor gauge an improved idea on how to determine materiality.
Continuous auditing is most impactful for expanding upon current risk assessments. As mentioned earlier under the current audit process section, risk assessments are performed to obtain an understanding of a client’s environment; however, the results of these assessments are often impractical because the testing occurs so long after the activities take place. Continuous auditing provides a mechanism to improve these assessments by completing them more frequently and on a real-time basis. Continuous risk assessments are completed by “examining trends and comparisons – within a single process or system, as compared to its own past performance, and against other processes or systems operating within the enterprise” (Coderre, 2005, pg. 7). These comparisons allow for earlier warnings of possible risks compared to previous years.

One of the main responsibilities of internal auditors is to test the company’s internal controls to ensure they are working properly. These tests tend to occur months after business activities take place and are completed in batches of samples. Completing testing in this fashion has shown to be of little to no help to entities due to the delay between the activities and the testing. Technology and big data analysis have already reduced the need for audit sampling in recent years; however, it is still a major chunk of a financial statement audit (Messier, Glover, & Prawitt, 2017, p. 265). A continuous auditing approach “changes the audit paradigm from periodic reviews of a sample of transactions to ongoing audit testing of 100 percent of transactions” (Coderre, 2005, pg. 1). Changing the way internal control testing is carried out provides internal auditors and management the opportunity to quickly analyze and monitor internal controls and their risk profile.

With continually changing accounting standards and industry requirements, companies are looking for ways to update their methods to adapt to these changes. KPMG notes that
continuous auditing, especially when united with continuous monitoring, has the ability to “deliver regular insight into the status of controls and transactions … enhancing risk and control oversight capability through monitoring and detection” (KPMG, 2008, pg. 2). Employing a continuous auditing practice means testing throughout the year, allowing auditors to ensure new regulations are being adhered to in a timelier fashion.

Implementing continuous auditing will shorten the current audit cycle. With frequent testing and better audit planning throughout the fiscal year, completing the audit before the deadline will take a significantly less amount of time. Shortening the audit cycle will result in the reduction of cost that clients spend on their financial statement audits. This significant decrease in spending on audits leaves companies with more fiscal resources to utilize elsewhere. In addition, external auditors also benefit from this because with a shorter audit cycle, the amount of time needed to work declines considerably, leading to a reduction or elimination of the need for a busy season.

The audit cycle can be shortened by continuous auditing because of how it eliminates various time-absorbing items outside of testing transactions. First and foremost, continuous auditing drastically reduces the amount of time external auditors spend waiting for the client to send crucial information; there is less urgency since the audit is completed year-round. In addition, the multiple levels of the audit review process will be shortened due to the automated procedures (Searcy & Woodroof, 2003). Continuous auditing also drastically reduces the amount of errors and mistakes made during the audit; additionally, the time necessary to fix any human errors will be eliminated.

Implementation Process
There are six main steps an accounting firm or business entity can follow to implement a continuous auditing system. First, areas of priority should be established; this provides an opportunity to choose where continuous auditing should initially be implemented. Typically, an entity should “identify the critical business processes that need to be audited by breaking down and rating risk areas. Understand the availability of continuous audit data for those risk areas” (de Aquino et al, n.d., pg. 5). A main advantage of continuous auditing is early detection of possible risks, so choosing to implement at higher risk areas is most beneficial. In addition, projected benefits of including a business cycle or area in continuous auditing should be analyzed (Shilts, 2017).

Second, the entity needs to establish rules that will guide the use of continuous auditing. Creating plans for programming and reconfiguring the system will provide the entity with necessary tools to effectively implement and run this process (de Aquino et al, n.d., pg. 5). The organization should use this step to strive for efficient audit coverage through process and system review and activity integration (Shilts, 2017).

Next, the actual frequency of the process needs to be designed. This step allows entities to take cost into consideration based on how often testing and reviewing will occur. If there are not an abundance of financial resources available, an entity might decide to test transactions on a less frequent basis. Following determination of frequency, configuration of the continuous audit parameters will be set. This step focuses on employing different types of analytical tests and the results may lead to a change in frequency that was established prior.

Follow-up procedures should be set in place to provide a checkpoint on how the continuous auditing system has been operating. Management can determine if the procedures set in place to alarm internal auditors or managers is operating at a desired level (de Aquino et al,
n.d., pg. 6). The last step focuses on communicating results and revising any of the first five steps in the implementation process. Communication at this step and reviewing the continuous audit process helps to discover any holes the process might have (de Aquino et al, n.d., pg. 7).

**How Smaller Firms and Entities Can Implement**

Implementing a continuous auditing process in a mid- or large-size company can be simpler than in a smaller company. Small companies do not have the additional fiscal or research and development resources available to invest in continuous auditing. Smaller companies also do not require the same amount of time dedicated to audits as larger, more prominent clients do. With differing resources and needs, small companies can implement continuous auditing in ways that enhance their specific needs without spending a fortune.

Any accounting firm or entity can follow the six-step process outlined in the previous section and tailor a continuous audit process towards their need and availability. Excel is already a widely used, powerful tool that can further be used by internal auditors to create spreadsheets “to assist in analyzing and manipulating data” (Shilts, 2017).

**Continuous Monitoring**

**Overview**

In addition to continuous auditing, continuous monitoring is also an effective practice that entities can adopt internally to improve management’s business processes as well as the audit process. This section explores what continuous monitoring is and how it works in conjunction with continuous auditing.

**What is Continuous Monitoring?**

Similar to continuous auditing, continuous monitoring is an automated feedback mechanism; the difference is that continuous monitoring provides this feedback to “management
to ensure that the systems and controls have been operating as designed and transactions are processed appropriately” (KPMG, 2008, pg. 2). This process allows management to gain a more in-depth oversight of their organization, allowing for a better understanding of current performance. Continuous monitoring provides an opportunity to “improve operations integrity and information and transaction quality” (Cangemi, 2010, pg. 1).

Unlike continuous auditing, “the key to continuous monitoring is that the process should be owned and performed by management, as part of its responsibility to implement and maintain effective control systems” (Coderre, 2005, pg. 9). The findings of continuous monitoring can be shared with external auditors, but it is not usually a service that public accounting firms will offer to their clients.

**How Continuous Monitoring Works Alongside Continuous Auditing**

Mainly, incorporating continuous monitoring and continuous auditing improves risk management and controls; both are extremely important aspects of an entity, especially with the external challenges, such as cybercrimes, facing businesses. Together, they “can deliver regular insight into the status of controls and transactions across the global enterprise, enhancing risk and control oversight capability through monitoring and detection” (KPMG, 2008).

Generating and reviewing continual reports on internal controls provides management the ability to “improve the allocation of risk management resources as well as risk management itself” (Deloitte, 2010, pg. 5). Management’s responsibility of monitoring risks and internal control performance can be integrated with both internal and external audits work of providing risk-based levels of assurance over these controls. With management and the auditors working together, they can “continuously assess evolving risks, design controls, and implement corrective actions and other changes as necessary” (KPMG, 2008).
Robotic Process Automation (RPA)

Overview

Robotic process automation, also known as RPA, has the potential to transform audit and tax practices for accounting firms. This section will discuss what RPA is, how it enhances the current tax and audit practices, and the accounting-wide benefits of investing in robots.

What is RPA?

RPA is an IT computer coded solution that configures software to “integrate the actions of a human interacting within digital systems to execute a business process” (UiPath Inc, n.d.). RPA is basically a robotic system that mimics the actions of a human performing a business procedure. It also has the ability to “communicate with other systems in order to perform on a vast variety of repetitive tasks” (UiPath Inc, n.d.). The goal of RPA is to reduce the burden of performing simple tasks on a consistent basis. It enables accountants to focus on higher-value activities.

RPA is unique because users can choose which tasks the software studies and learns to mimic. In addition to performing repetitive tasks, robots can perform a variety of services such as automated data entry, data validation, and process simple business rules (PwC, 2017, pg. 3). It is also relatively inexpensive and quick to roll out because it “leverages existing data and processes” (Grant Thornton, n.d.).

How RPA Enhances the Current Tax Process

There are a handful of tax functions that RPA can streamline. This section will discuss many of those functions including freeing up time, collecting relevant data, examining trial balances, converting data from book to tax-basis, preparing tax returns, preparing tax filing extensions, and reducing wage costs.
Implementing RPA within a tax practice opens the door for more services and higher-scaled work. The need for accountants to perform redundant tasks will be vastly reduced or eliminated altogether. In turn, those tax accountants will have more time to focus on complex issues, tax planning, and business growth.

Numerous public accounting firms have incorporated RPA robots to automate the process of calculating book-tax differences. For those that have not, the process, along with the adjusting journal entries, are normally the same year-to-year if the client does not make major changes to business operations. The tax accountant must manually calculate the differences and create the applicable journal entries. Application of robots can eliminate this entire process if it is taught how to calculate the difference.

Many tax preparation software currently has the ability to read PDF files containing client information and populate the applicable data into the correct forms, but smaller firms or sole proprietors might perform most of this work manually. RPA robots can be taught to extract data from PDF files and fill out forms. This can streamline an otherwise time-consuming action with no risk of human error (Mezzio, Stein, & Stein, 2019).

One of the principal advantages of a robot performing tax preparation is the capability to schedule this work to take place at any time of day. In order to accomplish this, a manual entry of start times is usually required (Scheduling when a Robotic, 2019). For example, tens of hundreds of tax returns can be scheduled for preparation after normal business hours and be ready for review the following morning. The automation empowers accounting firms to work more efficiently and prepare returns in a shorter amount of time.

A simple yet tedious task tax accountants are required to manually complete is preparing and submitting return filing extensions; tax personnel must prepare the extension, convert it to a
PDF, and then submit (Mezzio, Stein, & Stein, 2019). By means of RPA, the robot can review the client information and generate the extension forms. Through some conducted studies, addition of RPA in extension preparation and filing showed time savings of 70 percent (Mezzio, Stein, & Stein, 2019). This specific robot can be used from year-to-year and provides a continuous advantage to the firm.

Implementing RPA to streamline tedious and labor-intensive tasks reduces wage costs for the accounting firm. This is most applicable to the cost of fixing human errors; with automation, the time spent reviewing and correcting work will be reduced significantly. In addition, robots can handle a larger workload than humans, meaning more work can be completed than current operations without the risk of human error.

**How RPA Enhances the Current Audit Process**

RPA has traditionally been utilized more in tax practice than audit. Internal audit departments have avoided robots mostly due to the lack of knowledge regarding where and how to implement; many internal audit departments are also hesitant to alter operations (Poulikakos & Putnam, 2018). By following an approach similar to the implementation process for continuous auditing, RPA can be an innovative tool that provides a valuable ROI.

Similar to tax, RPA provides auditors the opportunity to concentrate less on repetitive, time-consuming tasks and focus more on other aspects of the audit, such as performing more complex testing to gain a higher level of assurance. For example, audit teams can use RPA to automate transaction testing. This testing can be completed outside of business hours, not only reducing the amount of manual work for auditors, but also contributing to shortening the audit cycle.
Figure 1 below lays out an example of the steps a robot would take to audit an entity’s revenue process (Rozario & Vasarhelyi, 2018). RPA has the potential to complete analytical procedures and audit internal controls, two of the most crucial parts of audit testing. It can be programmed to retrieve audit evidence from the client, compare its calculations to the client’s trial balance, and test to see if a difference is material. Automating high-risk portions of the audit, such as the revenue cycle, “has the potential to improve audit quality by reallocating the work of auditors to analyzing the differences generated by the RPA software” (Rozario & Vasarhelyi, 2018).

![Figure 1 - RPA Audit of Revenue Process]
5G Technology

Overview

5G is the newest telecommunication network available, providing the quickest and strongest internet connection that has ever been produced. It is the fifth generation of wireless technology that was released late in 2018 and continues to gain popularity (Introducing 5G technology, 2020). 5G is touted as such an innovative tool not only because of its speed, but because it has 100% coverage, near 100% availability, reduces the amount of network energy usage, as well as other groundbreaking abilities.

How 5G Impacts Accounting

As discussed earlier, continuous auditing is a crucial component to a more effective audit process. Incorporating a 5G network is “essential for the real-time data connections needed to power continuous auditing and KPI dashboards that provide live results and analysis” (Drew & Tysiac, 2019). With 5G technology being approximately 100 times faster than 4G, it cannot only work faster, but it can handle massive amounts of data with little to no lag time; this allows accountants to work with real-time data even more than with purely continuous auditing (Drew & Tysiac, 2019).

Figure 2 below compares the 4G layout compared to the projection of the 5G network. This graph indicates that, as projected, 5G will be the technology of the future for an extended period of time, meaning entities and public accounting firms have ample opportunities if they invest in this latest generation of communication (Shenk, 2019).
The accounting industry, along with the rest of the world, has had to adapt to new working conditions since the emergence of the COVID-19 pandemic. The pandemic has forced many accountants to work from home, leaving an expectation of reduced productivity, mostly due to a weaker internet connection than what their offices are equipped with. Accountants are not the only ones working from home, however. With remote learning for students of all ages and an increase in entertainment usage, such as streaming services, home networks are overloaded. This has led to an amplified interest in 5G networks. Rollout of 5G networks in the United States has become a focus for many carriers, with accounting firms emerging at the forefront of interest in order to continue providing exemplary client services (Sullivan, 2020). Providers like AT&T and Verizon are working to launch 5G cellphones towards the end of 2020,
which could be the beginning of enhanced client service for public accountants (Introducing 5G technology, n.d.).

However, it may currently be difficult for accounting firms and their clients to implement 5G networks firm-wide due to cost and unknown performance in the accounting industry. Although there are difficulties to consider, such as a steep initial investment, 5G will be crucial for improved communication, continuous auditing, and RPA purposes.

**Conclusion**

The accounting industry is heavily reliant on technology to create efficient processes and deliver high-quality work to their clients. Additionally, businesses are always looking to operate more effectively and increase revenue streams. Audit and tax processes in public accounting have evolved over the years by using technology and can continue to progress with additional technologies and methods to enhance operations and reduce workload, especially during busy season.

Continuous auditing will strengthen monitoring, testing, and review environments of entities. Audits would become more dynamic by expanding on overall testing and shortening the usual audit cycle. Continuous monitoring allows management to review internal controls and risks throughout the year and adhere to regulations in a timelier manner. RPA streamlines repetitive tax and audit activities, allowing for valuable time to be spent on higher-level work. 5G technology ensures these three methods are working productively and faster than ever.

Based on the research findings, I believe public accounting has the tools to vastly reduce the amount of time spent working during busy season. Accountants will most likely have to work more than normal to adjust to spending time on more advanced work, such as tax planning, but not nearly the equivalent of current state. Streamlining basic tasks through automation will clear
up a considerable amount of time, reducing workload and stress. Implementing even one of the methodologies discussed in this paper will provide a pronounced improvement in operations, and combining multiple will shift the accounting industry in a positive direction.
Works Cited


https://www.iiia.nl/SiteFiles/IIA_leden/Praktijkgidsen/GTAG3.pdf


