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COURSE

60453A

Building AI-Powered Audit Function: Part 1

Getting an engagement off to a strong start depends on quality information and sharp risk awareness. This course examines how AI can streamline client acquisition, retention, and pre-engagement planning, then dives into automated inherent risk assessment—one of the most promising applications of intelligent tools in audit. You'll learn how these technologies can surface risk signals earlier and more consistently than traditional methods. Designed for auditors who want to modernize the front end of their engagements with practical, AI-driven approaches.

CREDIT HOURS 2 | FIELD OF STUDY BUSINESS | EXAM QUESTIONS 10

Start Course ↓

Final Exam Copy ↓

Assignment

- Study the full course materials included here.
- Complete the review questions after each chapter.
- Answer 10 final exam questions.
- Final exam is scored immediately, 70% or better passes.
- Certificate of completion is available in your account.
- Failed exams can be retaken free of charge.

Course Objectives

- Recall the characteristics of Deceptive Impression Management (DIM).
- Recognize the types of risk involved when discussing total audit risk. In a dynamic and constantly changing world, the risk assessment function in an audit is continuous.

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Chapter 1: OBTAIN, RETAIN, AND PREPLAN WITH AI

Chapter Objective

After completing this chapter, you should be able to:

- Recall the characteristics of Deceptive Impression Management (DIM).

Can artificial intelligence (AI) be used to assess and compare the cultures of companies? MIT researchers think so. MIT Sloan launched a study to measure and compare culture across various companies (Sull et al., 2019). Known as Culture 500, MIT researchers used natural language processing to evaluate values like agility, collaboration, customer, diversity, execution, innovation, integrity, performance, and report. Using data from Glassdoor, the research study focused on classifying words (sentences) written by employees or former employees in Glassdoor. These words became the hunting grounds for the researchers to identify patterns that can help evaluate the culture of a firm. The researchers wanted to understand how to classify words into cultural categories. To make it work they trained the algorithm by developing custom hand-coded features. The results turned out to be fascinating, as they were able to study and compare cultures of hundreds of companies. The lesson here is that audit firms can deploy tools that can provide rapid and continuous assessment of a prospective client in creative ways. Just as the Culture 500 artifact has been trained to identify and measure the cultural elements of firms, new AI-based artifacts can be developed to study, analyze, and warn about many areas that are part of audit preplanning. This chapter introduces you to those opportunities.

SOLVING THE BEHAVIORAL PROBLEMS IN AUDIT

One of the values measured by MIT study was integrity. It is important to recognize that in MIT's model integrity is a cultural value; however, culture is a product of how individuals, especially leaders, of a firm conduct themselves.

KPMG's audit problems are not new. The audit firm has been a target of investigations, fines, and allegations of misconduct for several years. While much of this chapter is about using technology to improve the ethics and governance frameworks of audit firms, the irony is that KPMG offers an example of where the AI technology was used to do just the opposite. KPMG, it was revealed, contracted Palantir, a Palo Alto – based

firm, to apply a model to predict which engagements would be inspected by the regulator (McKenna, 2018). Furthermore, it was alleged that KPMG hired a former Public Company Accounting Oversight Board (PCAOB) employee and tried to probe him to disclose which of KPMG's audits would be audited by PCAOB (the regulator). As the saga unfolded, it was further pointed out that the compliance issues were widespread and extensive. KPMG ended up firing several employees. PCAOB's report on KPMG LLP 2016 audits found deficiencies in 43% (22 of 51) of audits (PCAOB, 2019). Deficiencies related both to testing controls for purposes of the ICFR opinion and to the substantive testing performed for purposes of the opinion on the financial statements. In response to the audit quality and misconduct allegations and investigation, KPMG responded with a letter (Ostrom, 2015).

In the letter, KPMG agreed that the firm had not satisfactorily addressed the quality control issues within the one-year period of the report publication. KPMG claimed that the remediation efforts were led by people who violated the firm's code of conduct and also inappropriately used PCAOB confidential information. Once the firm discovered that, it was reported to PCAOB and those employees were fired. To take proper remedial steps, KPMG reported that it had now hired and deployed new people who were chosen for their "sound judgment, professionalism, ethics, integrity, and ability to inspire the trust." KPMG also claimed that an enterprise-wide cultural assessment was performed by cultural change and ethics experts. To improve the audit quality, KPMG said that it was deploying a new technology and a new methodology that would focus more on internal controls and that the technology platform would be fully operational by 2020. The technology will enable workflow-centric improvements. Furthermore, the firm said that it is focusing on professional skepticism, supervision and review, and engagement quality control by enhancing training, clarifying roles, modifying processes, increasing accountability, and improving workflow. To improve monitoring, the firm will also move the Inspections Group from Audit Practice to the Legal, Risk and Regulatory department. The company also declared that a process for root-cause analysis will be invoked if an issue is reported based upon internal monitoring or external inspections.

While all of the above remediations are important steps toward improving the process, it is important to recognize that systems that are inherently dependent upon human intervention and decision-making are not necessarily foolproof. For example, the same scandal that rocked KPMG also led to the disclosure that the violations at KPMG went beyond the few who had been fired and were widespread and endemic (McKenna, 2019). The U.S. Securities and Exchange Commission (SEC) discovered that auditors (even senior-level employees) cheated on internal ethics, integrity, and compliance

tests and intentionally manipulated the system to change the limits needed to pass the exam. So much for training, processes, and root-cause analysis!

Here are some interesting questions:

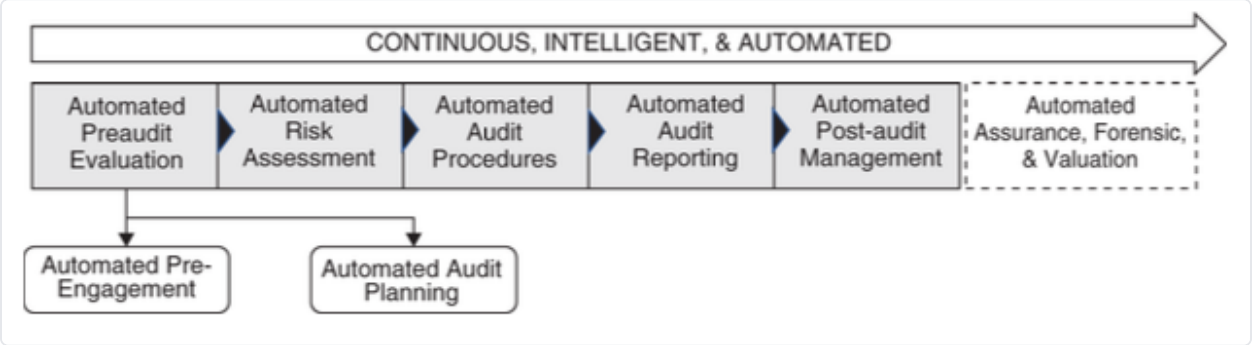
- Could KPMG have determined the personality traits or judgment of various auditors before the misconduct or quality compromises affected the client engagements?
- If KPMG could have used Palantir to predict which audits would be investigated by PCAOB, this implies that audit data has significant predictive power. Why couldn't KPMG have used the audit data to predict if the audit was effective or not while conducting the audit?
- Can KPMG deploy machines that monitor audits and auditors for professional skepticism?

Whether picking a new team member or a replacement member of the audit team, it is preferable to use a rational and data-oriented perspective to make those decisions. As pointed out previously in the course, the problems in audit – from both client and auditor side – are predominantly behavior related. Thus, when we think about automation, we must pay attention to both numbers and human behavior. Since significant problems that happen at the later stages of the audit can be avoided with better planning, the goal of preplanning automation is to improve both the quality and efficiency of audit.

AUTOMATED PREPLANNING SUBPROCESSES

The intelligent automation preplanning (aka Preaudit Evaluation) has two major subprocesses. The first subprocess is Automated Pre-Engagement Planning and the second is Automated Audit Planning (see Figure 7.1).

FIGURE 7.1 AUTOMATED PREAUDIT EVALUATION



AUTOMATED PRE-ENGAGEMENT

The goal of pre-engagement activities is twofold: (1) to understand client desirability, and (2) to develop the engagement letter and agreement.

Understanding client desirability means to assess whether the audit firm wants the prospect as a client or not. There are many reasons why an audit firm wouldn't want a firm to become a client. For example, if the previous auditor abruptly resigned from the engagement, or the client has entered a new highly risky business, or the client has promoted or hired a management team that has a record of bad management and ethical compromises, or the client's management team has criminal record, or if the audit firm has a significant independence issue, then an audit firm may pass on the opportunity. In addition to those factors, the client may have legal or regulatory issues, an overly complex business model, or other such issues that may make it unattractive for the audit firm to conduct business with.

Once the audit firm has overcome the desirability issue and has determined that it will be acceptable for the firm to be the auditor of the prospective client, the audit firm can proceed to develop the engagement letter. In addition to the traditional items like objectives, responsibilities, etc., the engagement letter identifies constraints or limitations in the engagement and the expected financial arrangements (i.e., the auditor's fee).

AUTOMATED AUDIT PLANNING

This subprocess includes staffing, early stage analysis of risks, internal assessment, schedule development, specialist assessments, and most importantly understanding the financials, risks, and strategy of the firm.

While risk assessment is part of audit preplanning, from an automation perspective it is a broad area that I cover in the next two chapters.

AUTOMATED PRE-ENGAGEMENT ACTIVITIES AND WORK TASKS

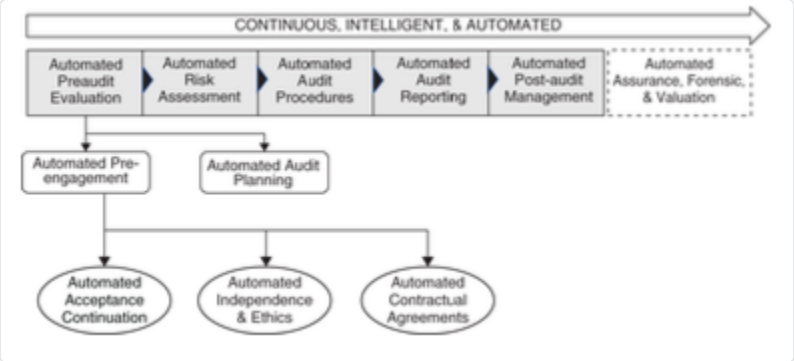
As shown in Figure 7.2, automated pre-engagement subprocess is composed of three primary subprocesses and activities:

Activity 1: Automated Acceptance and Continuance of Audit

Activity 2: Automated Ethics and Independence Evaluation

Activity 3: Automated Contractual Agreement

FIGURE 7.2 PRE-ENGAGEMENT ACTIVITIES



Each of the three activities can be further segmented into lower level tasks:

- **Acceptance and Continuation of Audit:** This activity is based upon determining if the client is desirable and the audit firm will accept or continue with the client. This includes specifically looking at the following work-tasks:
  - **Management team background checks:** This agent performs background checks on the prospective client management team and uses public information to do that.
  - **Client financial background check:** This agent specifically looks at the financial performance of the firm. Most of the analysis is numerical (i.e., it uses financial information such as ratios and data from the financial statements); however, some of the more insightful parts are also based upon analyzing textual information such as analyst reports, news, articles, online comments, and general sentiments of various stakeholders. The agent also looks at the industry benchmarks.
  - **Client culture assessment:** Like the MIT Culture 500 product mentioned above, this agent performs various cultural assessments.
  - **Client conflict patterns (e.g., lawsuits):** This agent looks at the various lawsuits the client is involved in as well as the general level of conflict that exists with various stakeholders (e.g., climate change or human rights activists).
  - **Relationship assessment:** This agent compares the cultures of the audit firm and the culture of the client to observe if a reasonably sound relationship potential exists or not. If based upon the relationship assessment agent and other agents, the audit firm discovers that the client will not allow the auditor to perform audit with confidence and tenacity

that is needed for a quality audit, it will be better to pass on the opportunity.

- **Extraordinary business risks:** This agent looks at the extraordinary or abnormal risks faced by the client.
- **Fraud index:** This agent uses the information from various sources (including the financial data) to assess the likelihood of fraud in a firm.

- **Ethics and Independence Evaluation**
  - **Independence in form evaluation:** This is an inward-looking agent that evaluates the audit firm to assess whether the firm is independent in all respects. It also focuses on the auditors.
  - **Independence in appearance evaluation:** This is also an introspective evaluation agent that looks at whether the audit firm or any of its auditors have violated the independence in appearance requirement.
  - **Ethics:** This agent ensures that ethical standards are maintained, that ethics trainings are completed, and that ethical conducted is pursued in all matters.
- **Contractual Agreement**
  - **Special requirements assessment:** This agent understands the special needs of a client and determines the type of extra help or specialist needed.
  - **Cost assessment:** This agent helps evaluate the cost of the audit.

As you can observe above, our concepts from Chapter 3 of course 60452B about planning have come in handy. We now have the entire process segmented into subtasks, activities, and work-tasks. The work-tasks are where automation materializes.

PRE-ENGAGEMENT SADAL

In the fourth stage of planning, we take each of the work-tasks and develop the structure of the intelligent agent by analyzing Sense, Analyze, Decide, Act, and Learn. While in the actual implementations of intelligent audit automation each of the above work-tasks will require a comprehensive evaluation, in this course I will present only few examples for illustration purposes. The ones I explain below will cover large areas and other SADAL analysis can be patterned after them.

Pre-Engagement SADAL for Background Analysis

Here, I will present a higher-level SADAL model for background checks. From this higher-level model, you can extract many applications of background checks.