

## **ENTERPRISE CRM: THE EVOLVE CPA AUDIT AND INTERNAL CONTROLS**

**William Money**  
**The Citadel**

---

*Ellen Brooke is an internal auditor facing an important decision regarding the internal auditing controls of her firm. Her company uses the Enterprise CRM software systems to manage and store the data of her company in the cloud. Ellen believes this system poses a risk for her firm. The case reviews the information systems security concern introduced by the continued use of the Enterprise CRM system. The product is widely used in industry, and apparently accepted as a secure system. However, she has attended a presentation regarding the threats associated with the product. The audit control risks she has recognized are based on the data presented by a consultant who is a technical expert on the Enterprise CRM system. The threat he has discovered and documented violate the new standards of the Evolve accounting control standards in her opinion. The case provides a brief overview of the Evolve accounting and attestation standards, and Enterprise CRM products and security features. The case summarizes and explores the employee's decision concerns and situation. The decision faced by the employee presents the employee with a decision about her reporting alternatives, and audit responsibility to the firm and to her professional accounting standards.*

---

### **WHAT DOES ELLEN BROOKE REPORT TO HER MANAGER?**

Ellen Brooke recently attended a conference dealing with information security. It is a crucial topic in the accounting industry and for internal accountants in public organizations. She wonders what approach to take in reporting her audit concern, and how to describe what she has learned? How can she best aid her organization in recognizing what on face value is a very important threat to the audit and internal controls that help protect the information for her organization? The technical consultant (Mr. Kyle Woods) presented a very interesting and seemingly well-documented report of his ongoing attempts to draw attention to a cybersecurity vulnerability discovered in a widely and frequently customer relationship management system (CRM). Mr. Woods is an Enterprise Cloud Architect and software consultant with over 25 years of experience in technology who provides enterprise level system consulting and implementation services to the Federal Government, Department of Defense, commercial entities as well as non-profit

organizations. (Ellen specifically noted that he is not and has never been an employee of Enterprise CRM. He does not represent or sell CRM systems, and constantly works with their software. He has no reason to malign or denigrate the firm with his findings.)

### **ELLEN IS CONCERNED**

Ellen is a professional in the field of internal accounting. She has earned the credentials of a Certified Internal Auditor (CIA) from the Institute of Internal Auditors, and she meets the requirements of the IIA's Professional Certification Board (PCB). She performs her internal accounting and control duties by utilizing the International Professional Practices Framework (IPPF), a structural guide for the creation and management of the internal audit function in her auditing work. This guide contributes to the internal audit profession by assisting internal auditors in fulfilling their mission of enhancing and protecting organizational value. This is accomplished through risk-based objective assurance, advice, and insight.

Ellen is acutely aware of the ever-increasing frequency of losses of critical data, illegal actions and fraud in the business world. She understands that this directly affects the quality the information presented in financial statements. Her concern is not with the direct entries for the audit of financial statements (not typically the concern of the internal auditor), but with the correct application of accounting policies and procedures to guarantee that the financial statements are dependable and that they are presented fairly.

The risk assessment and fraud detection work she conducts requires that a risk assessment be incorporated into an internal audit planning process. This requires that a work plan be completed and used to detect possible risks. She does not have direct experience with new risk assessment techniques that might be applied to the risk assessment. She wonders what her role as an internal auditor would require under this situation, and what techniques, tools and prescribed responsibilities are required for risk assessment?

### **DROPPING THE SECOND SHOE**

Ellen also hopes to earn her CPA designation. She has been taking classes at night and online to obtain the CPA license since she did not major in accounting when she completed her undergraduate degree. She knows she must add a minimum number of accounting and business credit hours to meet the CPA higher education

requirements. In addition, her accounting professor has explained that she must pass all four parts of the Uniform CPA Examination and complete 1-2 years of relevant and verified accounting experience. Her concern with the findings of Mr. Woods tracks to the new accounting standards that are being implemented by the CPA examiners.

One of her accounting professors has explained that the CPA exam is changing. The changes are described as the CPA Evolution initiative. The CPA's license is transforming to a licensure-testing model that reflect changes in the skills and competencies required by the accounting field. The changes are supported by the National Association of State Boards of Accountancy (NASBA), and the American Institute of Certified Public Accountants (AICPA). The changes implement a new core + discipline CPA licensure model requiring that a new Uniform CPA Exam be completed in 2024. This is just about the time Ellen will complete her classes.

A task force of CPAs (chosen by the AICPA and NASBA) created a model curriculum to determine the required CPA Exam changes. The model curriculum is presented in a Uniform CPA Examination Blueprints effective July 1, 2021. The second area assessed in the new exam is "Assessing Risk and Developing a Planned Response." The part C content group in this section is. "Understanding an entity's control environment and business processes, including information technology (IT) system." Ellen thinks this directly applies to the risks that might be present within the tool used by her company.

### **EVOLVE CONTENTS CREATE CONCERN**

The new Evolve accounting exam will require that CPA analyze and assess the control environment, IT general controls and entity-level controls, and the business processes and the design of internal controls, including the IT systems. Ellen carefully looked up the types of tasks included and found that the model listed:

- Obtain an understanding of IT systems that are, directly or indirectly, the source of financial transactions or the data used to record financial transactions (e.g., how the entity uses IT systems to capture, store, and process information);
- Document the procedures performed to obtain that understanding; and
- Perform tests of the design and implementation of relevant internal controls (application and manual).

- Identify and document an entity's relevant IT application controls within the flow of an entity's transactions for a significant business process and consider the effect of these controls on the completeness, accuracy and reliability of an entity's data.

### **THE DISCOVERED THREAT**

The presentation she attended described a significant vulnerability with a common Enterprise CRM software tool. This tool is a component of Enterprise CRM Administrators and Developers in Ellen's company that is frequently used in adding tailored reporting and user specific features to the Enterprise CRM product. The presentation covered an Enterprise CRM security issue that IS addressed by Enterprise CRM, Inc. on its website and in supporting documentation. It is also discussed in an Enterprise CRM Security Inspection Instructions and Documentation white paper. However, the white paper only addresses data replication processes, and how users guard against data potentially lost when utilizing the Enterprise CRM cloud environment (which her company uses). It includes a replication concept designed to protect users against disaster, and to recover data. This proposal did not address privacy, reliability, and security.

Mr. Woods' presentation emphasized that this vulnerability can be exploited to gain access to live administrator/developer Access tokens (Session Id's) and Refresh tokens. He noted that this tool is being used by several Federal Agencies and possibly one or more Department of Defense application teams. His description of the problem stated that the session Id shared by this tool will bypass multifactor authentication (MFA) and can be used by a threat actor to access the Enterprise CRM GUI (graphical user interface) and the more powerful Enterprise CRM API's (application program interfaces allowing processes to communicate)/

The Enterprise CRM API's with a stolen session Id are capable of exporting Enterprise CRM Data, Code, and Users of affected Federal, Commercial and DoD systems. The risks appeared valid to Ellen, and to other information systems professionals consulted by the consultant. The consultant reported that he had consulted personally with several very knowledgeable security sources including vendor certified architects and industry recognized cybersecurity professionals and his findings were technically correct. The cybersecurity vulnerability could be used to access the credentials of system users as Kyle has indicated.

### **HISTORICAL INTERNAL ACCOUNTING**

This threat is not really her problem, yet. Today's internal audits seek to assess the objective success of the internal controls, risk management and governance processes. The internal control audit examines differences between the operational process and the organization's intended purpose of a process. The straightforward goals are to assess internal controls for efficiency and operational effectiveness and improve the control environment and ensure compliance with relevant regulations and standards. Internal audits can objectively review procedures and policies, and provide an unbiased view into how effectively an internal control functions. Finally, they can help uncover gaps within and among the business that can be filled later or better designed to protect a company's assets.

Internal audits sample existing documents and regulations, create reports of findings, and review the initial analysis. Historically, internal audits are manual and require significant effort and resources. Document and information gather may be randomly sampled or by observing workflows across the entire organization/ they collect information on processes that are being audited. Reports are created to provide complete finding descriptions, and to recommend improvements in internal controls and procedures. The reviews of the audit work are performed by corporate internal audit committees that communicate the findings to the affected offices, departments, managers and senior leadership.

### **ENTERPRISE CRM VALUE**

Ellen has taken a close look at the system described by the consultant. She is certain it is the product discussed by the consultant and that the team that supports it in her company is using the possibly risky Enterprise CRM tool. Enterprise CRM is a Boston Massachusetts headquartered software firm. It is one of the leading competitors of cloud based enterprise CRM (customer relationship management) software. Its proprietary software solutions provide software applications that track customer data, services, marketing, automaton services, and analytics. The company also provides application development solutions through its platform. The company is highly regarded; Enterprise CRM ranks 31<sup>st</sup> in a recent business journal article as one of the "Most Attractive Companies to Work For" based on a worker survey of satisfaction.

Ellen's company is obtaining significant value from its Enterprise CRM installation. The advantages of this computing service alternative are rapid access

to more computing power and storage when required, limited management demands, and minimal need from the company providing the SaaS services. Customers use these systems without investing and supporting a development effort. The time to receive benefits from the system is shorter with software as a service (SaaS) due to the five essential characteristics that benefit both the service (SaaS) provider and the clients. The needed computing services are available (and can be expanded) on-demand, are requested and granted on a self-service basis, provide broad network access, allow resource pooling (vendors can combine resources and efficiently serve multiple clients), and rapid expansion of the resources to meet the client’s demands.

The Enterprise CRM yearly history is complex. It is one of the oldest and most successful firms in the industry and has a history of acquisitions in its evolution. Exhibit 1 presents the corporate history of the firm for a 16-year period.

**EXHIBIT 1**

**ENTERPRISE CRM, INC. FINANCIAL STATEMENTS 2006-2021 REPORTED REVENUES, NET INCOME, ASSETS AND PRICE PER SHARE, AND EMPLOYEES**

<b>Year</b>	<b>Revenue US\$ millions</b>	<b>Net income US\$ millions</b>	<b>Total Assets US\$ millions</b>	<b>Price per Share US\$</b>	<b>Employees</b>
2006	155	3	206	4.01	367
2007	301	14	411	6.52	1,094
2008	382	4	555	8.90	1,698
2009	539	29	780	10.80	2,590
2010	866	31	1,003	11.03	3,005
2011	932	44	1,631	18.56	3345
2012	1,003	54	1,819	22.08	4,108
2013	1,457	-42	2,216	31.97	5,075
2014	2,143	-140	4,319	39.84	6,980
2015	2,665	-122	6,013	48.06	9,112
2016	3,462	-63	7,764	59.60	11,812
2017	4,993	8	10,313	71.70	14,213
2018	6,452	221	12,658	77.32	18,012
2019	8,261	411	17,809	101.70	21,730
2020	9,783	810	22,624	121.90	24,122
2021	11,881	936	28,445		28,000

### **WHAT ELLEN LERNED FROM KYLE’S PRESENTATION**

Ellen listened to Kyle Wood’s has investigated security vulnerability reporting. She also took a copy of the slides and examples he presented back to her office to make sure she fully understood the concern. Kyle stated that that there is no unique or single security or vulnerability listing addressing the threats and vulnerabilities of tools used in the software services industry (including Enterprise CRM). Ellen found this to be true and examining his materials. Thus, vulnerabilities may or may not be reported in different threat listings and to several different public and private organizations. In general, the cybersecurity teams within these report-collecting organizations seek to improve the security of computer systems and communication networks by collecting and analyzing problems that may have software and cybersecurity consequences. They then “list” or make reports of the vulnerabilities and threats (but do not provide mitigating solutions to the threats).

### **THE CURRENT STATE OF AFFAIRS**

Kyle Woods indicated that Enterprise CRM has recently acknowledged Kyle’s concern in Information Report 0001763541: “Setting up the Enterprise CRM Developer Experience Command Line Interface” and posted their article response on <https://help.EnterpriseCRM.com/>. There posted documentation state:

*“The default configuration in Enterprise CRM Base allows an authenticated user with an Enterprise CRM CLI (available with the Spring ‘19 release) to create a URL that would enable any user to *access Enterprise CRM services with the same rights, without a log trace of access. A malicious user with access to the URL could perform administrative actions on behalf of the account owner who generated the token.*”*

Kyle Woods said he was both surprised and disheartened by this threat acknowledgement. The threat is has identified is real according to the vendor, but no solution or guidance about the threat avoidance is offered. His personal opinion is that that the announcement simply places the entire burden of avoiding this threat and (if one chooses) attempting to fix the vulnerability on the user. This is obviously a significant effort, and will have costs for the users.

### **THE VALUE IN CRM**

Ellen has acquired a deep understanding and appreciation of the value and importance of CRM in general and the uses of Enterprise CRM in her firm. She also appreciates the cybersecurity risk posed if the data and proprietary customer information in the databases of a CRM system are compromised. Enterprise CRM is a CRM company providing essential services to many organizations that obtain great value from understanding their customer's needs and interests, purchases and opinions. The growth in this industry and interests in the software is attributed to the important services provided to the users, and its ease of use. A wide variety of industries is obtaining CRM's value from using CRM in disciplined, focused ways to realize the benefits. CRM services and applications are addressing and solving highly specific customer-relationship tasks. The systems are used to diagnose call center customers' problems and obtain timely information where it is valuable in the organization's decision-making.

Ellen has thought through the many examples of CRM value. They include real-time data of orders, sales, bookings, returns, complaints, and production or process issues for supervisors and managers. CRM gained a positive reputation and became valuable when it also was applied to successful smaller CRM projects. The application to small projects contribute to the solutions to larger problems that have improved the results on major business metrics improve revenue gains in companies like Kimberly-Clark, Ingersoll-Rand, Brother, and Aviall Inc., an Aircraft-parts distributor. The positive impacts on supply chains, sales, orders, and production have proven significant.

The CRM impact on a firm's value chain is at the heart of the CRM benefit. CRM is closely related to how both marketing and communication enabled by information technology. It is a service, a highly sophisticated sales function that is fundamentally an enabler of a 1 to 1 communication environment. The 1 to 1 relationship exists between the service provider (organization with products and services) and the customer. It has been conceptualized it as a strategic process using data and software to answer questions such as who, what and how a company can serve customers. In this sense, it also affects many other functional areas of the organization such as HR, R&D and finance.



This view of CRM is that it is a value chain enabling process. It ensures that long-term mutually beneficial relationships develop with customers. A key of CRM's is its value in helping the organization focus on customers that are strategically significant to the organization. Those less important customers that buy little, or have infrequent interactions that are not deemed significant or strategic. These may be customers that have characteristics or behaviors that do not favor the organization such as paying late, defaulting on agreements, or requests that impose extraordinary demands on customer service and sales departments. They may also seek special treatments, customized outputs; and move to competitors. A CRM solution can aid in identifying strategically significant customers that are essential to the organization, and demand attention for customer retention. CRM analytics may aid the organization in assessing the lifetime value potential of the customer. This is the present day value of all future margins that might be earned in a relationship.

#### **CRM AND SECURITY THREATS**

CRM data present a large target for cyber security attackers. All organizations are very vulnerable to cybercriminals and numerous types of security attacks. However, successful attacks of the large databases can lead to the potential loss of private client and business information. Data can be stolen and strategically used against the organization or released and thereby threaten clients and partnering business with further attacks, expensive recovery operations, embarrassment and loss of the customer.

#### **HOW INTERNAL AUDITING REPORTS ARE MADE**

Ellen now believes that the importance of ensuring security in CRM systems is not fully understood by other internal auditors, and that the managers of her company may not understand the risks. Her awareness of the issues, risks from the Enterprise CRM software, and appreciation of the growing importance of this specific threat is supported by the changes coming in the Evolve CPAS exam and need to ensure continually that internal controls over the information systems are sufficient maintained.

#### **ELLEN AND HER THE DECISIONS**

Ellen knows that everyone in the firm has a very significant stake in the success of Enterprise CRM at her company. She must defend her company's data and systems. She wonder if it is time to proverbially "blow the whistle" and initiate a company-

wide investigation of this entire system. She is concerned that Enterprise CRM might take some action against the company or her, and that finding even more problems or a need to stop using the system to correct problems could negatively affect the company in many unknown areas.

She is trying to outline and frame her options. Should she collect more evidence and documentation on the threat, and develop more detailed examples that can be submitted to her company? Should she ask for data from some others inside the company to determine if there has been previously some security breach, and that she has not been informed of this event?

If she decides to communicate the concern, should she forward this information to her supervisor, and offer to prove the risk exists to other auditors? Should she go to her department manager, or to some higher level in the firm (like the auditing board) with this information?

Ellen knows her analysis data, and description of the problem could be forwarded to a wide number of employees distributed by email. Her understanding of the nature of the threat, and risks involved in the situation is extensive and the details could show possible “internal” hackers and others a new attack vector for Enterprise CRM.

What is next for Ellen?

## **REFERENCES**

American Institute of Certified Public Accountants (AICPA). (Oct. 23, 2020). Uniform CPA examination blueprints. [CPA Exam Blueprint - Effective July 2021 \(aicpa.org\)](https://www.aicpa.org/ce/CPAExamBlueprints/CPAExamBlueprint-EffectiveJuly2021)

Demirović, L., Isaković-Kaplan, Š., Proho, M. (2021), Internal Audit Risk Assessment in the Function of Fraud Detection, *Journal of Forensic Accounting Profession*, Vol. 1, No. 1, pp. 35-49. DOI: <https://doi.org/10.2478/jfap-2021-0003>

IIA International Professional Practices Framework (IPPF). (2021, December 31). Retrieved from <https://study.com/academy/lesson/iaa-international-professional-practices-framework-ippf.html>