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Chapter 9: Automating internal controls and documentation processes using ai and workflow tools

9.1. Introduction

The formation of the internal controls concept was intended to provide a set of regulations and procedures that were supposed to prevent fraud practices and errors that could cause the financial statements not to reflect the company's actual activity. The meaning of internal controls contained simple procedures designed to protect internal assets and limit the autonomy of every employee acting for the company, with the primary intent being to reduce the risk of fraud. As time has passed and theory has advanced, the age of electronic data processing and integrated operating systems has set an entirely new perspective on the internal controls view. Some highlights are: data input, data processing, database management, master file maintenance, error handling, output generation, and program development and maintenance functions. The exploration of functions is based on the comprehension and understanding of a system with an association of several modules, wherein the audit field exists at the inter-module relationships. The increased speed and accuracy, along with the reduced cost of processing amounts of data that accessed the information of various operational functions, have had an enormous effect on the internal controls. The costs associated with the implementation exist in a given benchmark determined by the rate of return expected from the use of the internal controls. It cannot be understated that a given software package could have a particular impact on the development of internal controls. The potential effect of a package is a function of the volume of transactions that will be processed by the system, the degree of reliance expected to be placed on the output, and the degree of dependence of the inter-module relationships (Lenz & Sarens, 2012; Lu, 2017; Ghobakhloo, 2018).

Documentation of these internal controls is essential, and this general theme is echoed in multiple areas: especially during the structuring of internal accounting controls, auditing of payments security, external auditing of financial statements, or certification related to quality management systems. The question is: why is documentation required?

It is common-sense to ask: if internal controls are real — whether it is automatic or manually executed internally, and whether or not these events are documented — why is this necessary? The typical response is: “If it is not written down, you didn’t do it. If it is not done, it doesn’t count!” (Vasarhelyi et al., 2015; Ren et al., 2017).

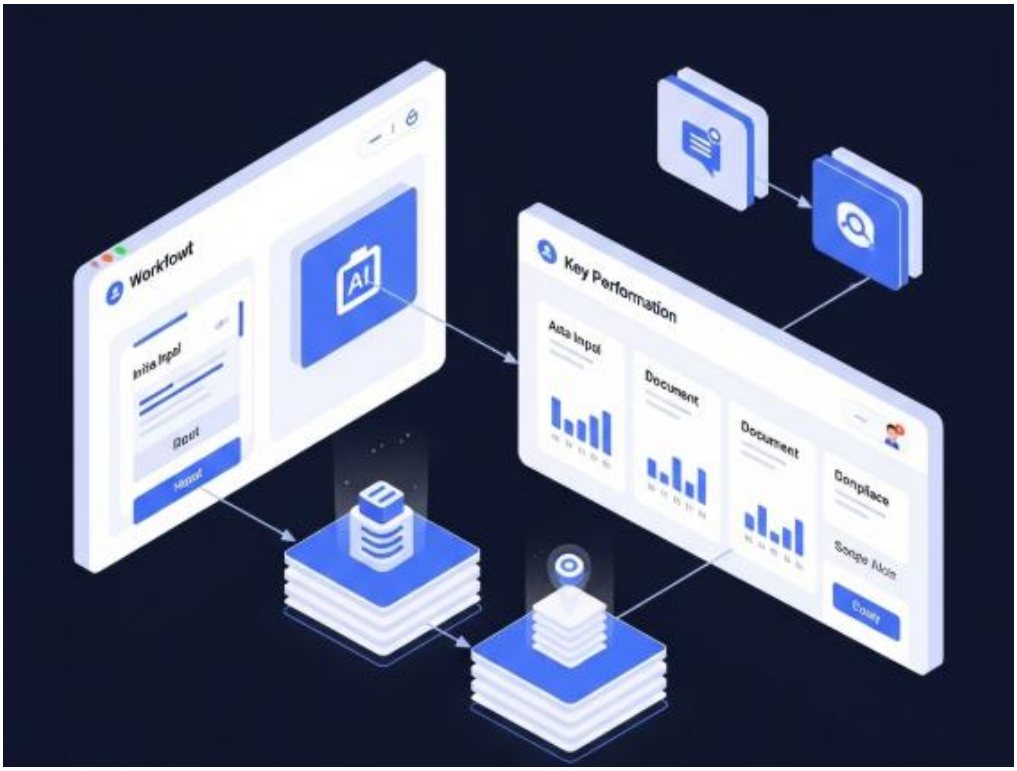

Fig 9.1: Automating Internal Controls and Documentation Processes

9.2. The Role of Documentation in Internal Controls

Internal controls are an integral part of all business processes. There are multiple players in every major business process: production, inventory, compliance, finance, marketing, and others. These players are generally structured hierarchically, where each player at the different level is accountable to the player just above. All the players at a higher level rely on the work done by players at a lower level. Each of these business processes has a set of policies and procedures that dictate what work should be done at this specific stage.

Senior management, owners, and stakeholders rely on internal controls to ensure that their business processes operate as intended. Internal controls are a documented set of checks and balances, executed to account for human inability to do everything perfectly

all the time. Internal controls cover several aspects of business operations: preventing operating losses, detecting and correcting accounting errors, ensuring that the financial reporting is accurate. Controls related to financial reporting help to ensure that the financial statements are materially correct, that fraud and errors are detected, and that the related disclosures are aligned with accounting principles.

9.3. Overview of AI in Business Processes

Artificial intelligence is used in many business processes. AI is seen as a way to enhance, augment and provide insights over traditional business process efficiency and productivity improvements, heuristic and deterministic algorithm implementations, process execution data review for optimization suggestions, user experience improvements, and robotic process automation bots. The market leading enterprise workflow tools, audit and compliance monitoring software tools, document collaboration and process automation tools, and industry-specific business process, decision management and accounting automation tools are quickly adding AI features to their cloud. AI is also integrated into horizontal foundation layer tools that are core microservices stack that all business processes build on as well. The brand new generative AI cloud tool enablement and general availability has unleashed incredible waves of new developer focus and innovation for internal enterprise, industry and business provider specific use case development and acceleration internal to business.

The end utilization of AI in business processes can be unlocked at two different levels, and very differently using large language model generative AI capabilities. The first part is easy-to-use generative AI tools that enable large segments of business use, generation, editing, commenting, approval and review. Most of these workflow processes utilize existing templates for production consumption, or are pre-trained internally. The second level is more complex to build and setup trained, data sharing and feedback-enabled Generative AI tools that take in data and output product, premium content, recommendations, suggestions, and process enhancements. These are custom for specific provider solutions for utilization and consumption on behalf of the customer. One model to configure is asynchronous batch where end-users interact with workflow processes then request executed enhancements, or faster inline model when the Generative AI tool is pre-trained and present all the time.

9.4. Workflow Tools: An Introduction

If you need to implement a set of controls or assurance procedures that require input from different people, then you need a workflow tool. A workflow tool is a software application to design, implement, and manage a sequence of task executions. This

process can be implemented via a workflow engine that automates, validates, and manages business rules and transaction execution. It ensures accountability and compliance with defined protocols and timelines.

Fig 9.2: Workflow Tools An Introduction of Automating Internal

The role of a workflow tool is to direct the business unit or function to examine an event and request inputs from various participants. Using a combination of different modules you can implement any of the four business requirement categories: manage, workflow, event monitor, compliance warehouse. In addition to being primarily a user interface without management tools, business units are underutilized for transaction management and compliance storage at a higher level by corporations. At a portfolio level, business planners can write and monitor the performance of functions and business units. Transaction directors can examine incoming transactions pending at events and observe the flow of transactions and states being completed via any business unit. Transaction management would allow directing business transactions to events and interfacing with employees to add appropriate transaction definitions and approved reference data as well as validate the data being input. Compliance monitoring would automate the scan of input data for the components being monitored and flag non conformance to the plan. As such, the workflow and compliance warehouse work as a shared engine for these

features. At a workflow tool service level, an external service provider could implement and host the feature set.

9.5. Benefits of Automation in Internal Controls

The board of directors and management of companies face growing pressure to ensure compliance with applicable laws and maintain a robust structure of internal controls. Internal controls not only protect shareholders from corporate fraud but also preserve a company's reputation. Automation of internal controls leads to a reduced cost and increased effectiveness of internal controls. Management must engage in an ongoing process of examining their internal controls reviewing policies and procedures to ensure the reliability of financial reporting, the effectiveness and efficiency of operations, and compliance with applicable laws and regulations. Internal controls exist to help reduce the possibility of fraud happening without detection. When management determines that an internal control is required, they create a policy and procedure. A properly-done policy will guide the staff as they execute a critical accounting-related process, as well as document how the internal control over the process is performed to reduce the likelihood of fraud. Accounting departments are often asked to perform many routine activities every day. Repetitive activities create the need for internal policies and procedures that can be followed efficiently. So, the existence of internal controls does not alone improve the likelihood of fraud detection. The existence of automated internal controls help reduce the costs of the internal controls, but make it necessary to fund resources to help ensure system effectiveness.

9.6. Challenges in Implementing AI Solutions

First and foremost, technology can be successfully deployed only if the employees responsible for maintaining internal controls are comfortable and knowledgeable about AI and are informed enough to utilize its benefits. This can only be achieved by providing continuous training and development programs that help them develop the necessary skills. Second, AI, like any other technology, takes time to adopt. Users need to be aware of how the system operates, what it can do, the kind of information that it requires, the various scenarios that could arise while operating it, how to interpret its outputs and what course of action to take. Without such understanding, there could be mistakes in operationalizing its guidance. It needs to be made clear to users that AI does not possess the intelligence to think on their behalf but can only supplement their cognitive capacities. Third, efficient expense risk control is possible only if AI settles into a stabilizing process. Initial outputs may vary significantly from the actual control needs. For instance, an expense control AI could flag all travel by one department as the

biggest risk, when it may consist of distinct travel needs, e.g. travel abroad for an oil rig project as well as inspections. If this feature of the AI is not appreciated, it may be disbanded after its initial run due to its poor predictive quality. Fourth, the time lapse between training the AI and the live output must also be acceptable to management. Some risk areas may change dynamically every quarter; others may remain stable for long periods. An expense risk control AI working on business jets and international travel may work well without frequent model retraining. One working on sales and marketing entertainment expenses in a regulated industry may need constant retraining. For AI applications to be efficient, the economies of scale must be large enough to make it worthwhile for the organization. These could be achieved if big data is used. AI may also work better in areas where there is a larger pool of fraudsters, creating the probability of similar behaviors.

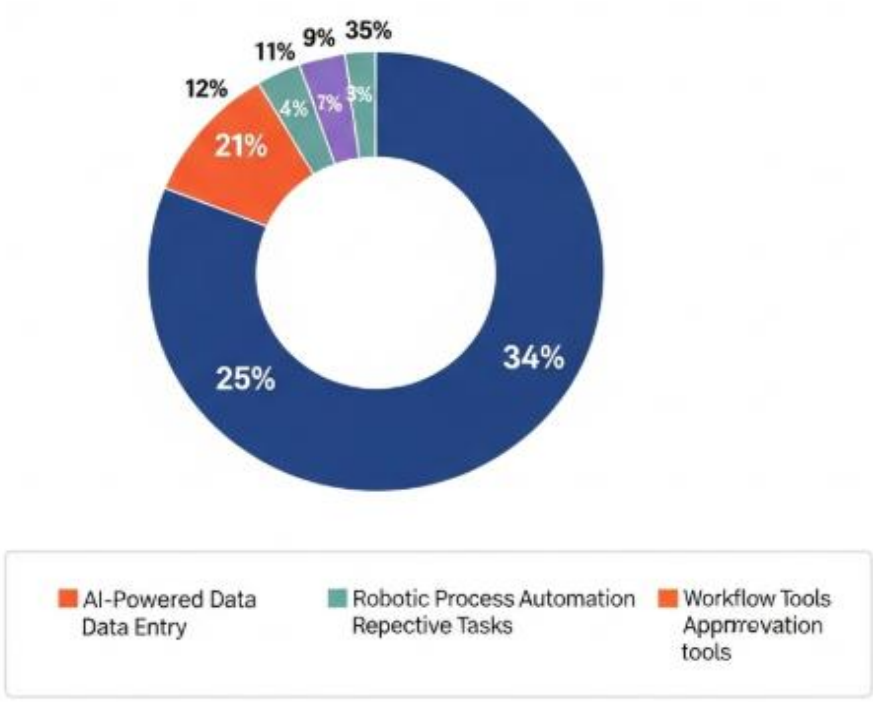

Fig 9.3: Automating Internal Controls and Documentation Processes Using AI and Workflow

9.7. Case Studies of Successful Automation

The approximately 650 plus financial, organizational and human resources related internal documents that the ES Cell Factory has generated since 2006 could all be converted into various compliance status reports by utilizing automated cloud AI

systems together with a CRM and workflow system. The ES Cell Factory would also be able to verify that administrative compliances are up to date and would be able to efficiently process inspections and audits from relevant authorities within the proposed internal control automation environment. Furthermore, in order to facilitate globalization and improve the productivity of the regenerative medicine field, the proposed internal control automation environment should also be available for other global ES cell-related organizations/manufacturers.

This completely defined AI and workflow system is planned to be designed and developed as such once the ES Cell Factory data operations and related internal controls are all visualized and understood. In closing, it can be said that through the combination of a user friendly, automated workflow including its related AI assisted internal controls and document management system that totally eliminates the creation of reports in relation to inspections, audits, and the mandatory reporting of adverse events and developmental risks, the over 100 year expectation continued working life of our industry's increasing aging society, and the currently mandatory massive influx of external talent, will hopefully still make this industry a continuous commercial process as described. Otherwise, the inevitable resource drain on the ES cell companies will most likely lead to a negative long term result on the commercialization of any associated medical products.

9.7.1. Case Study 1: Financial Sector

Internal controls seem often burdensome as they are viewed as additional work which does not add value for the company. Financial institutions are quite heavily regulated; conducting an internal audit on a building block for the financial balance is good practice but leads to companies also employing a technology to ease these recurring tasks. A large financial institution requires audits to provide assurance for the integrity and accuracy of its general ledger. With a vast number of accounts to monitor and review, risks abound. Even when controls are performed diligently, the problem of sampling always exists. Internal auditors, while confident that the business units are performing the needed controls as designed, are faced with the inherent limitations of sampling — not all transactions are tested.

Historically, internal audit teams have reached out to business units for the last five years to identify all transactions over a certain dollar amount. Since the required transactions were stored in a template, the process was not only tedious but is also prone to error. The internal audit department would then slice and dice the data to validate required control testing. Error rates, since they had no access to the underlying data, would also take a lot of time to address. Completion of the audit would also take longer as it is dependent on how quickly the business units respond and the internal audit can close discussions on

findings. With such risk factors, the institution required some automation or system control for the future. Further, company investments into IT infrastructure naturally lead to the need to assess the effectiveness of those controls through the results generated, which are then reviewed by management and external auditors.

9.7.2. Case Study 2: Manufacturing Sector

As the pressures of a highly competitive global marketplace increase, companies operating in the manufacturing sector are becoming increasingly anxious over inefficient operations, poor product quality, and daunting regulatory demands. The growth in the various compliance regimes ensures that these companies must devote considerable resources to compliance-related tasks. Many companies use or rely on large numbers of internal controls and a rigorous control structure to mitigate the risk of exposure to losses arising from outsourced manufacturing. The review and approval of internal control documents, required for compliance, is an overhead function that has a negative impact on the productivity of the enterprise. This function is costly for organizations and impacts their controllership function.

A leading vehicle manufacturer, located in Mexico, supplies automotive components required for the assembly of trucks, buses, or light vehicles in global operations. The components are produced mainly from stamping, machining, forging, welding, and assembly processes. The internal control structure required by settings demands continual updates along with the correct documentation, testing, and monitoring of activities. Furthermore, issues such as late filings, including a lack of disclosures on significant weaknesses, led to penalties for many public companies not following appropriate guidelines. Due to the aforementioned, additional costs are incurred which subtract from the innovation budgets. By using a series of rules, the software programs allow users to create the basic document or test any internal control activity process linking fraud prevention and detective controls. These activities and the general testing leading to the conclusion, aside from the notifications and memories of the other staff involved, generates a significant decrease in the documentation effort.

9.7.3. Case Study 3: Healthcare Sector

As a third specific case, we consider a large clinic for medical assistance that evaluates and uses the tools we consider to automate its Internal Control and Documentation processes. This clinic has 30 Health Centers, 231 doctors, 300 nurses, 12,468 consulted patients, and 68,094 attended consultations. In the analyzed period, this clinic has 39,032 healthcare services: 21,953 medical and 17,079 nursing consultations. The internal control and documentation processes are performed manually by a team with 43 staff

members who issue the documentation of the control samples requested by Norm 021 SSI, which has 63 laws divided into 15 Tables that evaluate the Health Centers.

A form that is organized into 5 Sections and 13 Criteria is used. Three Tables apply to Section 1, which is the Evaluation of the Operation; four Tables apply to Section 2, which is Evaluating the Execution; three Tables apply to Section 3, which is the Evaluation of the Samples; one Table applies to Section 4, which is the Evaluation of the Notifications; and four Tables apply to Section 5, which is the Evaluation of Reports. The Sections impose the following actions: in Section 1, collect Health Center personnel operation formats; in Section 2, the Health Center performs actions assigned in Section 1; in Section 3, during the month of evaluation, the samples are performed daily; in Section 4, analyze the notifications; and in Section 5, send the reports through email and upload to the web page. The samples that are visually evaluated are biweekly. The multidisciplinary team of specialists gathers the information and performs the analysis during a period of between 6 to 8 Working Days for the completion of the report.

9.8. Conclusion

To properly document the internal control environment as well as the design of internal controls and the execution of control procedures, it is very helpful to utilize a variety of automated tools. Workflow tools help organize and map out the processes and the roles and responsibilities that each of the involved people have. Control automation tools allow for the creation of automated controls that take the place of manual controls for reducing the risk of a significant error and utilizing a variety of documentation tools streamlines the documentation processes. Additionally, AI-assisted tools can assist with specific substantive and monitoring tasks that are part of the risk assessment, operational and financial monitoring and specialty process work at accounts, business units and geographies involved with the work. This automation helps get this important work done in a more efficient, less stressful manner and allows for a better internal control environment that can help detect or prevent significant errors or fraud.

External business conditions can disrupt the best-laid internal control plans and taxes focus on the creation and delivery of the products and services that are driving the company. As such, automation tools are vital for assisting individuals with the completion of work that is a required part of evaluating the design and operation of internal controls over the financial reporting and the related delivery of accurate financial statements. Current technology enhances the ability to make visual and data-driven assessments of risk areas regionally and within locations, business units and functional areas. These enhanced assessments document why the work is completed, any required follow-ups and conclusions reached along the way.

9.8.1. Future Trends

As time goes by, we will see a convergence of AI capabilities and tools with workflow tools. Just as spreadsheet applications allowed users to create new capability without software development itself, the future is likely to see AI merge with low-code platforms, and a growing host of others. Instead of needing to become proficient in various models, users will simply state the impacts they want to make, and the systems will build the appropriate internal controls and workflows for them. Indeed, over time it is plausible to believe that a significant portion of corporate internal controls will be coded as ready-made modules and available for assembly by users, much as one might build a computer today by assembling various components available off the shelf.

Internal controls implementation, maintenance and testing is one segment of the economy where companies pay large amounts of money to hire expensive employees with relatively low productivity to do tedious work that requires both competence and diligence. As with knowledge work in many occupations, over time it is likely that machines will invade this space. With the problems created by recent waves of layoffs and shifts in employment, this invasion will likely be welcomed by both companies and employees alike. Knowledge workers, after all, have been hoping for this over time – that they could obtain the benefits of two-man teams and relatively naïve junior associates at a fraction of the cost. Automating Internal Control and Documentation Processes and the structures and choices we have described are a good first step in realizing that ambition.

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