Management Accounting and Control Systems

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1 Introduction

Objectives of this paper

This paper provides an overview on the main principles of financial controls as well as the new requirements of the Sarbanes Oxley Act, especially Section 404 of the Act, which stresses on internal controls and management assessment of internal controls. I organized this paper as follows:

Section 1 provides the introduction into the paper.

In section 2, I provide a brief overview on the definition of management accounting, particularly its demarcation to financial accounting. Further on, I define the role and instruments of management accounting and shortly present the traditional versus the innovative techniques of management accounting in order to set the roots for the following chapters referring to further significant issues, such as financial controls, in management accounting.

In section 3, I present the importance of establishing a strong financial system as well as the main principles of financial controls. In this section I elaborate, after a short general overview on management control systems, the companies' control activities on two levels: entity level and transaction level. On entity level I describe the most important general rules for establishing and evaluating internal controls on an aggregate company's level with regard to policies and procedures and their implementation and compliance. On a transaction level I elaborate two examples. As complexity of control activities grows with a growing complexity of the company's businesses, I start the elaboration of control activities on

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transaction level with a single process (exemplary the purchasing process). Further on, I broaden the single process example into a multi-process one in order to show the complexity of process interactions and correspondingly the growing complexity of control activities on transaction level. In this section I also present exemplary some key characteristics of selected major processes emphasizing on the possible key controls and possible error exposures contingent to the purpose and objectives of the major process. In a further step in this section, I pay special attention to the basic principles of financial controls such as segregation of duties, establishing proper procedures for conducting transactions, performance reporting and monitoring and documentation. I illustrate the principle of segregation of duties by a detailed example.

Section 4 describes the introduction of the Sarbanes Oxley Act with its requirements and merits. I paid special attention to the important issues and the main provisions of the Act and the new requirements set by the new legislative body PCAOB (Public Company Accounting Oversight Board). Furthermore, I describe in more detail the historical background for introducing Section 404, its requirements and the critics referring to it. In this section of my essay I also describe the benefits and the costs connected to the implementation of SOX 404, mainly based on a survey issued by the IIA (Institute of Internal Auditors) Research Foundation.

Based on the previous sections, Sections 5 ends up the essay by summarizing the benefits of a robust financial control system for the decision making process, which is one of the major aims of managerial accounting.

2 Definition of management accounting

Management accounting deals with the provisions and use of accounting information to managers within organizations. Its main objective is to provide managers with information for making their business decisions and allow them to improve their management and control functions. In contrast to financial accountancy information, which is mostly public information, management accounting information is determined for use within an organization and is often confidential.

Tab. 1: Management versus Financial Accounting

Management accounting	Financial accounting
information to managers and employees within the organization	economic information to individuals and organizations that are external to the direct operations of the company
information for helping employees and managers make decisions	fixed form for the information
forward looking	based on historical information

Source: own presentation

According to The Chartered Institute of Management Accountants, CIMA, Management Accounting is "the process of identification, measurement, accumulation, analysis, preparation, interpretation and communication of information used by management to plan, evaluate and control within an entity and to assure appropriate use of and accountability for its resources. Management accounting also comprises the preparation of financial reports for non management groups such as shareholders, creditors, regulatory agencies and tax authorities" (CIMA Terminology).

This definition identifies management accounting as providing both financial information and non-financial information and the role of management information as supporting strategic (planning), operational (operating) and control (performance evaluation) management decision making.

2.1 Role and instruments of management accounting

In order to add value and to continuously improve process of planning, measuring and operating both financial and non-financial information systems management accounting has following information supporting instruments:

1. Define strategies (long term plans of action for achieving particular goals);
2. Planning and setting business activities;
3. Decisions making;

4. Resources usage and resources optimization;
5. Preparation of financial reports; and
6. Guaranteeing assets.

Management accounting information is a key source of information for decision making, improvement, and control in organizations. It is intended to meet specific decision-making needs at all levels in the organization. Examples of management accounting information include:

- The reported expense of an operating department;
- The costs of producing a product;
- The cost of delivering a service;
- The cost of performing an activity or business process – such as creating a customer invoice.

Management accounting also produces measures of the economic performance of decentralized operating units, such as business units, divisions and departments. These measures help senior managers assess the performance of the company's decentralized units.

In short, management accounting not only guides management action to achieve an organization's strategic, tactical and operating objectives, but also comprises control in organizations. By providing timely and accurate information about organizations' activities effective management accounting systems create value to organizations.

2.2 Traditional versus innovative management accounting

2.2.1 Traditional management accounting

The traditional form of management accounting information has been financial information denominated in a particular currency.

Organizations use financial measures internally as a broad indicator of performance because financial measures are the primary means of communication between profit seekers (organizations) and their stakeholders. Financial information summarizes underlying activities but to explain financial results, managers need to analyze it deeper, as financial information itself provides a signal that something is wrong, but not what is wrong and what are the reasons for this. Detailed information provides additional insight into what is happening to profits.

2.2.2 Innovative management accounting

The more modern approaches to management accounting have expanded to contain operational and/or non-financial information like *Quality and Process Items* or even some more *subjective measurements* of the past decade as customer satisfaction, employee capabilities and new product performance (see Atkinson, 2003, chapter 1).

In line with the latter statement, Atkinson and Kaplan state that as the key element of any organization's strategy is to identify its target customers and to deliver what those target customers want, the organization has to deliver to customers the so called "**value proposition**". Value proposition comprises of:

1. Cost – the price paid by the customer, given the product features and competitors' prices;
2. Quality – the degree of conformance between what the customer is promised and what the customer receives, for example a defect-free product that performs as promised by the salesperson;
3. Functionality and features – the performance of the product, for example a product that provides the level of satisfaction expected for the price paid;
4. Service – all the other elements of the product relevant to the customer, for example, how the customer is treated as the product is purchased and the degree and form of after sales service.

The recent need for development of more *subjective measures* can be illustrated by the example of a criterion such as customer satisfaction.

As service companies differ from manufacturing companies in several ways (service companies do not produce a tangible product and the less obvious difference between the service and manufacturing companies is that many employees in service companies have direct contact with customers), service companies must be especially sensitive to the timeliness and quality of the service that their employees provide to customers; otherwise their customers immediately notice defects and delays in service delivery. The consequences from such defects can be severe when dissatisfied customers usually choose alternative suppliers after a bad experience or even when dissatisfied customers also tell others about their bad experience (negative effects of "word of mouth").

Furthermore, subjective measure referring to *employee capabilities* had to be developed in terms of behavioral and ethical implications.

It resulted from the fact that when management accounting information is used for control, management accountants may find themselves in complex conflict situations, especially when using management accounting information for performance evaluation. For example, department managers may distort information so that unfavorable factors, such as the cost of inefficient processes or the existence of substantial amounts of excess capacity, are not revealed in a management accounting report. Or in the case of senior executives whose incentive compensation is based on the reported financial numbers, they may put pressure on accountants to recognize revenue from a customer early or to defer the recognition of an expense until subsequent periods. All these behavioral distortions were evident in the frauds dominating the financial news in recent years.

As a result of a strong criticism in the late 1980s concerned with the management accounting practices which hadn't changed despite changes in the business environment, accounting practitioners and professional accounting institutes started to develop more innovative skills set for management accountants.

The distinction between 'traditional' and 'more modern or innovative' management accounting practices can be best illustrated by reference to cost control techniques. The following section provides a short overview over the development of management accounting approaches starting from the traditional variance analysis trough more modern approaches *like life cycle cost analysis* and *activity-based costing*, which are designed with specific aspects of the modern business environment in mind.

2.2.2.1 Variance analysis

Variance analysis was traditionally the main management accounting technique. It is an approach of a systematic comparison of the actual and budgeted costs of the raw materials and labor used during a production period.

2.2.2.2 Life cycle cost analysis and activity based costing

Variance analysis is nowadays usually used in combination with the more innovative techniques life cycle cost analysis and activity-based costing.

The concept of lifecycle costing states that ability the cost of manufacturing a product can be mostly influenced by management when the product is still at the design stage of its product lifecycle. It means that small changes to the product design, at the time before it has been finalized and production commenced, may lead to significant “savings” in the manufacturing cost of the product as direct consequence of the connection between start-up costs, or generally costs, and benefits of introducing the new product into the market. In the following passage I explain the motivation for this approach in more detail.

Life-cycle costing argues that organizations should consider product’s costs over its entire lifetime when deciding whether to introduce a new product. This is so because product-related costs occur unevenly over the product’s lifetime. The motivation for considering total life cycle costs before the product is introduced is to ensure that the difference between the product’s revenues and its manufacturing and distribution costs cover the other costs associated with developing, supporting, and abandoning the product[1]. Life-cycle costing is a good example of a costing system

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[1] There are five distinct stages in a typical product’s life cycle:

a) Product development and planning with significant research and development costs and product testing costs (because of the increasing costs of launching products, organizations are devoting more effort to the product development and planning phase);
b) Introduction phase with significant promotional costs as the new product is introduced to the marketplace; at this stage the product’s revenue often does not cover the flexible and capacity-related costs that it has inflicted on the organization;
c) Growth phase with product’s revenues finally beginning to cover the flexible and capacity-related costs incurred to produce, market, and distribute the product,
d) Product maturity phase with price competition becoming intense and product margins beginning to decline and while the product is still profitable, profitability is declining relative to the growth phase and the organization undertakes intense efforts to reduce costs to remain competitive;
e) Product decline and abandonment phase, where the product begins to become unprofitable the organization incurs abandonment costs, which can include selling off equipment no longer required or restoring an asset (e.g., land) prior to abandoning it.

designed for decision making that has little or no practical relevance in external reporting.

Activity-based costing (ABC) is a system for assigning costs to products based on the activities they require. In this case, activities are the regular actions performed inside a company. Each product or service is produced and delivered via the activities performed in the company. The accountant can then assign the different activities to the different products using an appropriate allocation method. Therefore, optimizing the activities' efficiency would lead to identifying opportunities for cost reduction in indirect and support activities, improving profitability, process improvement and among others effective cost control[2].

Both modern concepts – lifecycle costing and activity-based costing – act on the assumption that the avoidance of disruptive events (e.g. machine breakdowns) is more important than reducing the costs of raw materials. Activity-based costing even deemphasizes direct labor as a cost driver and focuses instead on activities that drive costs, such as the production of a product component.

3 Management accounting and financial controls

3.1 Management control systems

Control is the process of ensuring that a firm's activities conform to its plan and that its objectives are achieved. Control is basically based on planned objectives and there can be no control without objectives and plans, since these predetermine and specify the desirable behavior and set out the procedures that should be followed by members of the organization to ensure that a firm is operated in a desired manner. Consequently, control is the function that makes sure that the actual work is done to fulfill the original intention.

[2] Activity-based accounting is also known as Cause and Effect accounting. The ABC information provides managers with insights about how to increase profitability: increase either their sales volume or prices to compensate for the large batch and product-sustaining expenses, impose minimum order sizes to eliminate unprofitable production runs, try to increase demand for the highly profitable products, which could generate new revenues that exceed their incremental costs, improve processes, particularly the processes performing batch and product-sustaining activities. The goal of Activity Based Management actions is to enable the company to produce the same volume and mix of products with fewer resources.

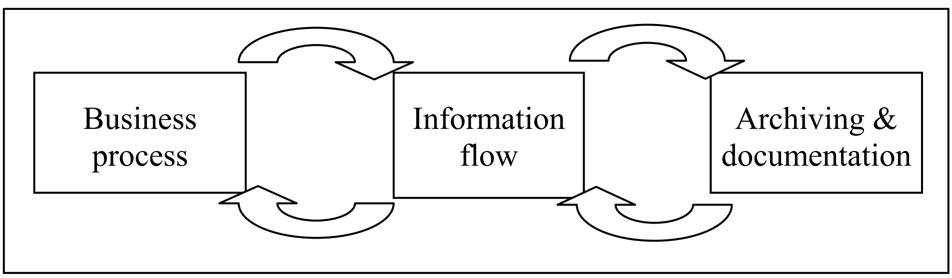
Management accounting control systems represent the predominant controls in most organizations. There are several reasons why accounting controls are the predominant controls.

- First, all organizations need to express and aggregate the results of a wide range dissimilar activities using a common measure. The monetary measure meets this requirement.
- Second, profitability and liquidity are very essential to the success of all organizations and financial measures relating to these and other areas are closely monitored by stakeholders. It is therefore natural that manager monitor performance in monetary terms.
- Third, financial measures also enable a common decision rule to be applied by all managers when considering alternative course of action. That is, a course of action will normally benefit a firm only if it results in an improvement in its financial performance.
- Fourth, measuring results in financial terms enables managers to be given more autonomy. Focusing on the outcomes of managerial actions, summarized in financial terms, gives managers the freedom to whatever actions they consider to be appropriate to achieve the desired results.

In order to assure the **verifiability and reliability** of the financial system within an organization every single business process must be accompanied

- on the one hand, by corresponding controls and information flows and
- on the other hand, by archiving and documentation of the individual activities which take place within business processes.

Fig. 1: Interaction between business processes and back office activities



Source: Own presentation

The depicted structure can be also exemplary described by a triple segregation of activities by the following persons (for the part "archiving and documentation" a person can be supported by automation, for example by a computer with corresponding software):

Tab. 2: Interaction continued

Initiation business process	Information flow	Archiving & Documentation
A business process must be initiated by a person responsible to act as a manager, for example head of purchasing department, who is responsible for making an impulse for a transaction	The information flow accompanying the business process, see 3.3.1, must be accompanied by a person or department controlling the compliance with the general rules of the company. So for example a general company rule could be to address three potential suppliers and analyze their best offer when buying a new product.	The third and from accounting and auditing point of view very important part within a business process is archiving and documentation of the single activities. So for example, the company has to assure that there is a person (or in some cases a computer), who, shortly before entering a transaction into a book, assures the formal correctness of the transaction.[3]

Source: Own presentation

The presented general control rules can be better illustrated by a concrete example of a purchasing process, which I do in part 3.3.1 of my essay.

[3] Such a check of the formal correctness of the transaction can be proved by signature or by entry in a computer and verifying the compliance with the company's rules, so for example the person in charge has to check if there are all information about accountability, tax or even formal details such as number of orders, departments and initiating persons.

3.2 Control Activities on Entity Level

3.2.1 Overall Considerations

Internal control is a process—effected by an entity's board of directors, management, and other personnel—designed to provide reasonable assurance regarding the achievement of objectives in the following categories:

a) Reliability of financial reporting,
b) Effectiveness and efficiency of operations, and
c) Compliance with applicable laws and regulations.

3.2.2 Entity versus Transaction Level Controls

Control activities are **policies and procedures** that help ensure that management's directives are carried out. They help ensure that the necessary actions are taken to address risks to achievement of the company's objectives. Control activities, whether automated or manual, have various objectives and are applied at various organizational and functional levels. Generally, control activities on entity level may be categorized as policies and procedures pertaining to the following:

- **Performance reviews** — these control activities include reviews of actual performance versus budgets, forecasts, and prior period performance, and relating different sets of data (operating or financial) to one another, together with analyses of the relationships and investigative and corrective actions; further aspect is the review of functional or activity performance, such as a bank's consumer loan manager's review of reports by branch, region, and loan type for loan approvals and collections. By investigating unexpected results or unusual trends, management identifies circumstances where the underlying activity objectives are in danger of not being achieved. Whether managers use this information only to make operating decisions, or also to follow up on unexpected results reported by financial reporting systems, determines whether analysis of performance indicators serves operational purposes alone, or financial reporting purposes as well.

- **Information processing** — a variety of controls are performed to check accuracy, completeness, and authorization of transactions for all types of information processing environments. Information processing controls can be manual, automated (application[4]), or manual controls that depend on an automated process (i.e., IT-dependent[5]).

- **Physical controls** — these activities encompass the physical security of assets, including adequate safeguards over access to assets and records, such as secured facilities and authorization for access to computer programs and data files, and periodic counting and comparison with amounts shown on control records. The extent to which physical controls intended to prevent theft of assets are relevant to the success of the business and the reliability of financial statement preparation depends on the circumstances such as when assets are highly susceptible to misappropriation.

- **Segregation of duties** — assigning different people the responsibilities of authorizing transactions, recording transactions, and maintaining custody of assets is intended to reduce the opportunities to allow any person to be in a position to both perpetrate and conceal errors or fraud in the normal course of his or her duties. When IT is used in an information system, segregation of duties often is achieved by implementing security controls.

Factors to consider when evaluating company's control activities at entity level

- Existence of necessary policies and procedures referring to each of the company's activities,
- The extent to which controls called for by policy are being applied,
- Whether management has clear objectives in terms of budget, profit, and other financial and operating goals, and whether these

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4 Application controls are automated controls that apply to the processing of individual transactions. These are the primary controls that ensure that transactions occurred, are authorized, and are completely and accurately recorded and processed.

5 IT general controls are typically secondary controls, which help ensure the continued functioning of application controls. IT general controls commonly include controls over data center and network operations, software acquisition and maintenance, access security and application system acquisition, development and maintenance. Examples of such IT general controls are program change controls that restrict access to programs or data as well as controls over the implementation of new releases of software applications.

objectives are clearly written, communicated throughout the entity, and are actively monitored,

- Whether planning and reporting systems are in place to identify variances from planned performance and communicate such variances to the appropriate level of management,
- Whether the appropriate level of management investigates variances and takes appropriate and timely corrective actions,
- To what extent duties are divided or segregated among different people to reduce the risk of fraud or inappropriate actions,
- To what extent duties are divided logically through appropriate set up of computer applications,
- Whether periodic comparisons are made of amounts recorded in the accounting system with physical assets,
- Whether adequate safeguards are in place to prevent unauthorized access to or destruction of documents, records, and assets,
- Whether policies for controlling access to programs and data files have been established,
- Whether access security software or operating system software is used to control access to data and programs.

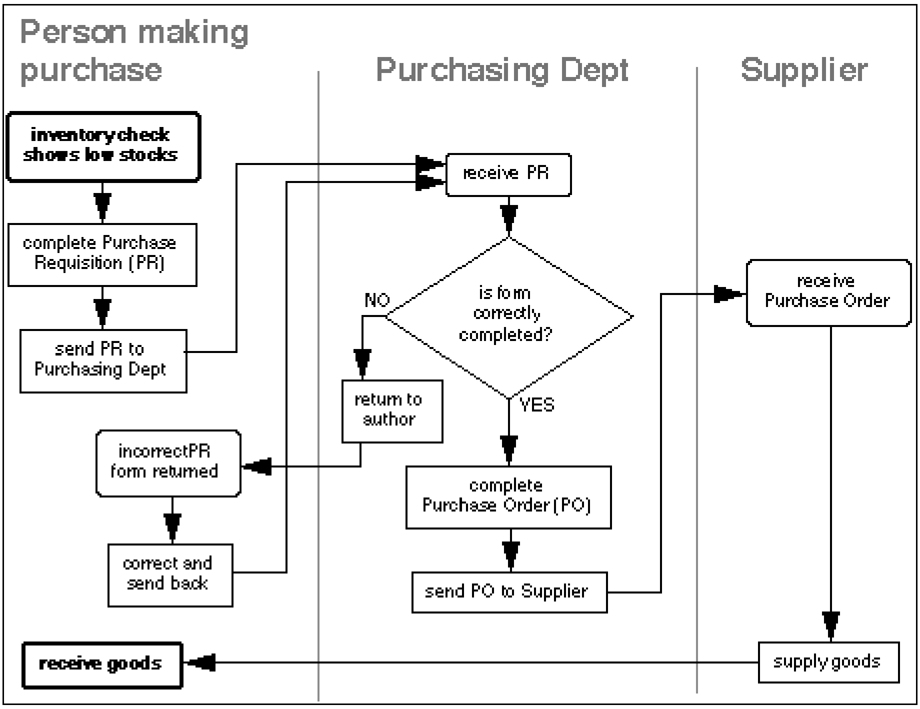
3.3 Control Activities on Transaction Level

Understanding the flow of significant classes of transactions and related controls within significant processes, such as the following example of a purchasing process, is the basis for establishing a proper control system for ensuring verifiability and reliability of management accounting information.

3.3.1 The purchasing process – the single process example

Purchasing is much more than the single act of making a purchase. It involves planning, scheduling, policy interpretation, research, negotiation, selection and processing. It necessitates follow-up to ensure proper delivery and inspection, as to quantity and quality before acceptance and payment.

Fig. 2: The purchasing process



Source: Own presentation

The above presented purchasing process is a cut of an organizational structure presenting only a part of all the intertwined and mutually dependent processes in an organization. As the organizational activity involves many separate tasks and they are often complex and in addition change over time in response to different external change such as new customer demands, new product and service requirements, or new laws and regulations, it is always useful to document and group the single activities and tasks within the process and in this way to understand how the process works and to get a concise picture of the interaction between different processes within the organization.

So for example, purchasing requires the understanding of procedures to be followed during the process and the cooperation of all individuals and departments within the company. The purpose of the purchasing process is to identify the goods and services required for the company's operation, as well as to select and procure them as economically as possible within acceptable standards of quality.

It is neither the role nor responsibility of the Purchasing Department to determine the purpose or intent of requisitions for procurement of goods and services. That function is delegated to the Division Chairs, Directors, Administrators, Managers, Deans, Vice Presidents, President or other authorized budget manager. The Purchasing Department is responsible for expediting the procurement process through qualified sources that provide the best pricing consistent with quality, delivery and service.

In order to make the above presented example more realistic I introduce some additional functional units and processes in the next section.

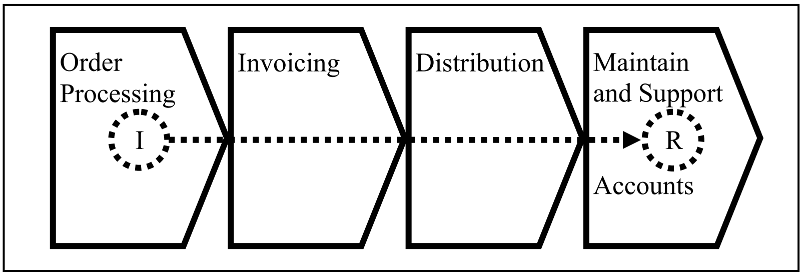
3.3.2 Complexity of process interactions

Every transaction normally flows through more than one organizational unit, involves more than one process, and involves manual as well as automated activities and controls as it goes from initiation to reporting in the general ledger.

Understand the significant processes **in their interaction,** is the pre-requisition for implementing an efficient and effective control system which can ensure the verifiability and reliability of the financial data. In order to do this one has to identify the flow of transactions from initiation (**I**) to reporting (**R**), which I introduce through the following graphic in a simplified manner.

The following graphic illustrates a flow of transactions from the initiation (order processing) to its recording (maintain and support accounts). The flow of transactions and related controls has to ensure that significant class of transactions are properly initiated, recorded, processed, and reported.

Fig. 3: Transaction Flow



Source: own presentation analogous Ernst & Young, Instruction for auditors (2007)

*Note: The dashed line represents the flow of transactions.

Be acquainted with the flow of transactions (or the policies and procedures to capture, record, process and report events and conditions) is the basis for identifying the types of errors that could occur in relation to the financial statement assertions (these are, among others, completeness, correctness, timeliness). Being aware of the processing procedures helps management to identify the presence or absence of controls and the points at which errors could occur and controls are needed. Even program routines and data files may require deep understanding in order to identify and evaluate, or in the case of absence – to implement, the relevant controls.

3.4 Key Process Controls dependent on Process Objectives

In the following table I exemplary describe some major processes, which are depicted in the above graphic and are generally established in every industrial enterprise. I focus on the key controls (see column three) which are necessarily required to prevent or detect the potential errors that may occur (see column four).

Tab. 3: Key Process Controls

Major Processes	Key Performance Indicators	Key Controls	Potential Errors
Order Processing **Purpose** Obtain orders, accept and process orders **Objectives** Process an approved order	◆ Number of orders rejected ◆ Number of order changes ◆ Number of orders processed with errors ◆ Order entry cycle time	◆ Gross margin review ◆ Computer access controls to pricing	◆ Unauthorized pricing is accepted resulting in lower profits ◆ Inaccurate or fictitious orders
Purchasing **Purpose** Purchase raw materials **Objectives** Purchase an optimal quantity of materials at an optimal price at the optimal time	◆ Average number of days each deficit (stockout) exists ◆ Days raw material on hand ◆ Percentage of excess inventory to total inventory ◆ Number of purchase orders issued per purchasing department employee ◆ Percentage of purchase orders > $1,000 ◆ Total amount ($'s) of purchases per purchasing department employee ◆ Sales forecast accuracy percentage	◆ Purchasing performance is monitored by management	◆ Order placement timing not optimal resulting in excess inventory on hand (lower profits) or not meeting customer time requirements (lost sales)

Major Processes	Key Performance Indicators	Key Controls	Potential Errors
Distribution **Purpose** Deliver goods to customers **Objectives** Deliver ordered products and services in accordance with sales order	◆ Product returns due to wrong product shipped ◆ Time lag from order to delivery ◆ Freight cost vs. budget ◆ On time shipping percentage ◆ Shipping costs as a percentage of total revenue	◆ Management review of delivery and finished goods statistics ◆ Compare customer order to pick list ◆ Comparison of shipments made to invoices sent	◆ High delivery costs lower profits or affect competitiveness ◆ Customer time requirements not met resulting in lost sales ◆ Cash flow problems due to inefficient invoicing practices ◆ Incorrect or damaged orders cause high returns and customer dissatisfaction
Invoicing **Purpose** Bill customer and record sales **Objectives** Invoice customers for products sold on a timely basis	◆ Ship date vs. invoice date or amount of unbilled Accounts Receivable ◆ Percentage of invoice errors ◆ Number or amount of credit memos	◆ Inventory/sales cut off controls ◆ Physical inventory or cycle counting. ◆ Management review of invoicing statistics (timeliness, accuracy, etc.)	◆ Cash flow problems due to inefficient invoicing practices

Source: own presentation analogous Ernst & Young, Instruction for auditors (2007)

3.5 Basic principles of financial controls

Organization's management sets **financial controls** as standards within the financial process in order to ensure the accuracy, timeliness, and completeness of financial data and its compliance with internal or external policies and regulations.

Financial controls can prevent and/or detect incorrect or inappropriate transactions and/or bookings. The processes of financial controls involve on the one hand personnel as work force performing certain procedures monitoring, and on the other hand computer integrated controls and reports.

The system of financial controls aims fundamentally at providing reliable financial data but also at safeguarding assets and records as well as assuring compliance to prescribed policies and regulations. The basic principles of common financial controls are:

- Separation of duties within business processes
- Proper procedures for conducting transactions
- Performance reporting and performance monitoring
- Documentation

3.5.1 Segregation of duties within business processes

Separation, or also called segregation of duties, intends to prevent accidental or intentional errors from going undetected.

Segregation of duties is a basic, key internal control and one of the most difficult to achieve. It is used to ensure that errors or irregularities are prevented or detected on a timely basis by employees in the normal course of business. Segregation of duties provides two benefits: 1) a deliberate fraud is more difficult because it requires collusion of two or more persons, and 2) it is much more likely that innocent errors will be found. At the most basic level, it means that no single individual should have control over two or more phases of a transaction or operation. Management should assign responsibilities to ensure a crosscheck of duties.

If a single person can carry out and conceal errors and/or irregularities in the course of performing their day-to-day activities they have generally been assigned or allowed access to incompatible duties or responsibilities. For example incompatible duties are:

- Authorizing a transaction, receiving and maintaining custody of the asset that resulted from the transaction,
- Depositing cash and reconciling bank statements.

There are four general categories of duties or responsibilities which are examined when segregation of duties are discussed: **authorization, custody, record keeping and reconciliation**. In an ideal system, different employees would perform each of these four major functions. In other words, no one person should have control of two or more of these responsibilities. The more negotiable the asset, the greater the need for proper segregation of duties – especially when dealing with cash, negotiable checks and inventories.

In those instances where duties cannot be fully segregated, mitigating or compensating controls must be established. Mitigating or compensating controls are additional procedures designed to reduce the risk of errors or irregularities. For instance, if the record keeper also performs a reconciliation process a detailed review of the reconciliation could be performed and documented by a supervisor to provide additional control over the assignment of incompatible functions. Segregation of duties is more complex in a centralized, computerized environment. Compensating controls in that arena include passwords, inquiry only access, logs, and documented reviews of input/output.

Tab. 4: Responsibilities/duties to be compulsory segregated

Authorization	**Custody**	**Record keeping**	**Reconciliation (control)**
The process of reviewing and approving transactions or operations	Access to or control over any physical asset such as cash, checks, equipment, supplies, or materials	Process of creating and maintaining records of revenues, expenditures, inventories, and personnel transactions[6].	Verifying the processing or recording of transactions to ensure that all transactions are valid, properly authorized and properly recorded on a timely basis[7].
• Verifying cash collections and daily balancing reports.	• Access to any funds through the collection of funds, or	• Preparing cash receipt back-ups or billings,	• Comparing billing documents to billing summaries • Comparing funds

[6] These may be manual records or records maintained in automated computer systems.
[7] This includes following up on any differences or discrepancies identified.

Authorization	**Custody**	**Record keeping**	**Reconciliation (control)**
• Approving purchase requisitions and orders • Approving time sheets, payroll certifications or leave requests • Approving change orders, computer system design or programming changes.	processing of payments • Access to safes, lock boxes, or other places where money, checks or other assets are stored. • Receiving any goods or services • Maintaining inventories • Handling or distributing paychecks, purchase checks or other checks	purchase requisitions, payroll certifications, and leave records • Entering charges or posting payments to an accounts receivable system. • Maintaining inventory records	collected to accounts receivable postings • Comparing collections to deposits. • Comparing payroll certifications to payroll summaries. • Performing physical inventory counts • Comparing inventory changes to amounts • Reconciling departmental records of revenue, expenditure, and payroll transactions.

Source: Own presentation

In the following section I present an example of the practical application of segregation of duties within the cash receipts department.

In that section I exemplary listed some activities (left column). In the next step I categorize these activities as authorization, custody, recording or control / reconciliation procedure and assign a responsibility (responsible person) to each of them. This exemplary presentation can vary from organization to organization depending on the organizational and responsibility structure.

Tab. 5: Segregation of duties – application to cash receipts

Activity / Segregation / Responsibility	Authorization	Custody of assets	Recording	Control procedure
Maintains cash receipts journal			office manager	
Maintains accounts receivable records			office manager	
Reconciles bank accounts				accounting clerk/controller approves
Authorizes write-offs of uncollectible accounts	controller			
Controls the accuracy, completeness of, and access to cash receipts programs and data files				controller / office manager

Source: Own presentation

3.5.2 Proper procedures for conducting transactions

In order to distribute resources properly, proper authorizations for every transaction have to be defined. For example, the general policy allows purchases bellow a predefined significance level (financial limit) to be processed with one approval. A further requirement of the organization may be to address three different suppliers and analyzing their best offer before buying a new product. Based on the purchasing process example I extend the previously depicted purchasing process into a step-organized procedure flow to present an example of a proper procedure for conducting this process.

Tab. 6: General Purchasing Process – things to consider

Step	Things to consider
Step 1 – Identify needed product or service	◆ Obtain all departmental approvals. ◆ Is the item available in another area of the department? ◆ Is the required product or service available from an internal source? ◆ Does the item need to be compatible with other items? ◆ Are there maintenance issues to be considered?
Step 2 – What type of funds will be utilized to pay for the required goods or services?	◆ Grant funds on deposit?
Step 3 – Is the required product or service available from a Catalog Vendor? Is the identical item or service available from an existing contract? Is an item or service available from an existing framework contract that is comparable to the item or service originally identified and meets the needs? If there is an item or service that is available from an existing contract but it does not meet the specific functional, price and delivery requirements?	◆ Document and check Procedure Requirements ◆ If so, purchase the item or service unless an Off- Contract approval is obtained to buy the item or service from another source. ◆ If so, purchase the item or service unless Prior Authorization is obtained. ◆ Contact Purchasing Services for assistance
Step 4 – Determine the estimated cost of the required item or service? If under $50,000 If over $50,000 If competitive bids are required for the designated account code, is there an applicable exemption to the competitive bid statute?	 ◆ Departments are free to purchase from the vendor of their choice. ◆ Separate Approval. If so, complete a Prior Authorization and Questionnaire
Submission Purchase Requisition to Purchasing Services	

3.5.3 Performance reporting and performance monitoring

Reports are the most common tool for reviewing operations and monitoring performance.

- Reporting for financial control.

  In conjunction with different purposes different reports are needed. A detailed general ledger enables ensuring that payments and encumbrances are reasonable in amount and appropriate in regard to the defined objectives. A summarized financial report enables focusing on trends and year-to-date performance. For higher level of management use even more summarized reports may be appropriate. Reports focusing on common errors or problem areas are always recommendable.

- Monitoring performance.

  A regular review of reports stating the unit's financial status in respect to the defined objectives is absolutely necessary for achieving the defined objectives. A monthly review for example allows managers to timely react, for example by reducing expenditures or reallocating budgets to adjust the financial figures in order to meet the set objectives. Significant variations from expected results should be investigated to determine the cause.

- Conducting independent reviews on performance.

  The continuous review of existing financial controls by unit managers is an important part of internal control systems. Its importance is particularly notable when changing (adjusting or improving) procedures and systems in order to point out the need to update financial control policies or procedures. Additionally to reviews conducted by unit management, Internal Audit staff conducts independent reviews on the adequacy of financial controls.

- Process Risk Assessment

  The process risk assessment is a self-evaluation process that evaluates the effectiveness of financial controls. The risk assessment refers to existing or new processes. Trough risk assessment the strengths and weaknesses of the current process must be evaluated and benchmarked to best practices, and if necessary corrected in an appropriate way.

3.5.4 Documentation

One very important element of a financial system are all documents of original entry as invoices, purchase orders and records upon which transactions are entered. Tracing transactions in the accounting department (generally in the so called general ledger) back to the source document enables verifying validity and correctness. Documents and records can assure the proper control and bookings of assets and all transactions.

Accounting documents record changes in values arising from accounting transactions. They consist of one or more items (postings) each of which represents an individual transaction posted to an account.

The traditional accounting documents are all the invoices and adjustments or corrections to them which lead to entries into the general ledger (main book). However, many other supplementary documents like purchase orders or even meeting protocols about initiating an unordinary transaction which don't go into the books, have to be kept in order to trace the transaction to its origins if needed, and to be able to reconcile and retain detail for reporting, analysis and auditing purposes.

The accounting documentation has developed so far that meanwhile all business transactions in financial institutions and, in particular, agreements made with external partners as well as any relevant content of internal operations and arrangements have to be documented in an appropriate and sufficient manner. Initials and stamps must be affixed in such a way that they can be identified. The departments have to keep a list containing the current proof of signatures and initials. The retention periods could be up to 10 years.

4 SOX as system of controls

The Sarbanes–Oxley Act of 2002 (also known as the Public Company Accounting Reform and Investor Protection Act of 2002 and commonly called SOX) is a United States federal law passed in response to a number of major corporate and accounting scandals concerning for example Enron or WorldCom. The act came as a response to the decline of public trust in accounting and reporting practices based on the above mentioned accounting scandals. The act establishes a new framework for monitoring corporations as well as new hard independence rules for companies' auditors and aims at strengthening corporations among others based on managerial information and accounting management.

One of the most important credits of the Act is the establishment of a new quasi-public agency, the Public Company Accounting Oversight Board, responsible for **oversight**, **regulation**, **inspection**, and **discipline** of the accounting firms in their roles as auditors of public companies.

New and important issues of the Act are auditor independence, corporate governance and enhanced financial disclosure. In more details the Sarbanes-Oxley Act's major provisions are:

- Creation of the Public Company Accounting Oversight Board (PCAOB).
- A requirement to public companies to evaluate and disclose the effectiveness of their internal controls related financial reporting, and subsequently the requirement that the independent auditor of public companies to attest to such disclosure.
- Certification of financial reports by chief executive officers (CEO) and chief financial officers (CFO).
- Auditor independence, leading to forbidding certain types of work for audit clients such as other non-audit work (for example, advisory).
- A requirement to listed companies to have fully independent audit committees for overseeing the relationship "company—auditor".
- No personal loans to any executive officer or director.
- Accelerated reporting of insider trading.
- Additional disclosure.
- Enhanced criminal and civil penalties for violations of securities law.
- Longer jail sentences and larger fines for corporate executives who consciously misstate financial statements.

Herewith a comprehensive requirements set was established that included the development of disclosure committees, certification of financial statements by both the CEO and CFO, the development of more financially literate and responsible audit committees, increased independence of the external auditor, and the implementation of fraud risk management processes (like whistleblower procedures) that would alert the appropriate levels of governance of potential frauds or illegal acts within the company.

In this way the legislation took the setting of auditing standards for the audits of public companies away from the private standard setter AICPA (American Institute of Certified Public Accountants), and formed the new body PCAOB, to set auditing standards for public companies.

Overview of PCAOB's requirements for auditor attestation of control disclosures

Auditing Standard No. 2' of the Public Company Accounting Oversight Board (PCAOB) has the following key requirements:

- The design of controls-relevant assertions related to all significant accounts and disclosures in the financial statements.
- Information about how significant transactions are initiated, authorized, supported, processed, and reported.
- Enough information about the flow of transactions to identify where material misstatements due to error or fraud could occur.
- Controls designed to prevent or detect fraud, including who performs the controls and the regulated segregation of duties.
- Controls over the period-end financial reporting process.
- Controls over safeguarding of assets.
- The results of management's testing and evaluation.

Particularly relevant for **internal controls** are Sections 302 and Section 404 of the Sarbanes-Oxley Act.

Section 302 introduces an internal procedures system for ensuring accurate financial disclosure. In accordance with it the signing officers must certify that they are “responsible for establishing and maintaining internal controls” and “have designed such internal controls to ensure that material information (company’s or subsidiaries’) is made known to them by the responsible employees.” The officers must “have evaluated the effectiveness of the internal controls as of a date within 90 days prior to the report” and “have presented in the report their conclusions about the effectiveness of their internal controls based on their evaluation as of that date.”

A further aspect stated by Section 404 of the Act, requires management to produce an “internal control report” as part of each annual report, which is going to be detailed presented in the following section.

At the current stadium there are no requirements in terms of SOX for purely Europe-wide companies. However, as far as European companies are internationally listed, for example on the New York Stock Exchange (NYSE), which is the case in the most internationally active European companies, the SOX-requirements are binding.

4.1 SOX 404 – management assessment of internal controls

Section 404 of the Act requires each annual report of an issuer to contain an "internal control report", which:

1. states the responsibility of management for establishing and maintaining an adequate internal control structure and procedures for financial reporting; and

2. contains an assessment, as of the end of the issuer's fiscal year, of the effectiveness of the internal control structure and procedures of the issuer for financial reporting.

In a further step the auditor shall attest to, and report on, the assessment made by the management of the issuer. In order to incorporate the new requirements in the attestation the Board explicitly doesn’t separate the attestation referring to Section 404 from the year-end-audit engagement. The legislation intent of the Board was to access the internal control system without increasing the costs for the year-end attestation.

Further on, the Board directs the SEC to require each issuer to disclose whether it has adopted a code of ethics for its senior financial officers and the contents of that code.

Origin

Section 404 is a direct consequence of the corporate failures of the past decade with its significant internal control failures and fraudulent financial statements. The lesson learned from the failed companies was the existence of control deficiencies referred to both the “tone at the top” and the basic processing. For example, WorldCom had significant problems noted in the board of directors' report, such as non-supported journal entries and booking accounting estimates. These control deficiencies were worsened by a lack of integrity "at the top" – top management and the board of directors. As a consequence, legislation decided to establish a new framework for both improving the external audit professional standards as well as for improving the governance and control of public registrants.

Criticism

There has been a great criticism referring to the implementation of the internal control provisions of the Section 404 of the Sarbanes-Oxley Act mainly in terms of the resulting costs. Different studies providing overview on the implementation costs state that in the most cases the costs have been too high in return for the real improvement or benefit achieved by the implementation of the SOX-requirements. The high costs have their origin in the lack or shortage for the internal control documentation and review. Such lack or shortages refer not only to accounting staff and auditors (internal and external) but also the mere methodologies to conduct and document internal controls.

In contrast to most of the studies which assert that the costs associated with the internal control work far exceed the benefits, a study issued by the IAA[8] Research Foundation under the cooperation of Ernst & Young and Deloitte & Touche LLP named "**SOX 404–Looking at the Benefits**", provides a cost/benefits analysis referring to Section 404 SOX focusing mainly on the public benefits of Section 404. The authors of the above cited study argue that the previous work on SOX 404, which intensively criticized the marginal benefits of the new standards regarding internal controls in comparison to the high implementation costs, is incomplete in the following three topics:

- Previous work doesn't address the benefits that improved controls and reliability of financial reporting have on the investing public.
- Only few of the previous studies deal with the learning curve associated with new processes, i.e., they don't address expected ongoing costs as opposed to one-time start-up costs.
- Previous studies don't identify specific control improvements that have been made as a result of the mandated internal control work.

[8] Institute of Internal Auditors

The following sections deal with the special topics identified above in order to show explicitly the improvements in the control environment and the assessment of Section 404. These two sections are based on the results of the survey “SOX 404-Looking at the Benefits” of Ernst & Young and Deloitte & Touche LLP, which analyzes the responds of 171 chief audit executive (CAE) members of the IIA working for larger companies who at the time of the survey had already completed their Section 404 evaluations, but before external auditors had completed their testing.

4.1.1 Management responsibility for internal control structure for financial reporting

Although the Act sets a fundamental change in business operations and financial reporting by placing responsibility and the requirement of being literate in corporate financial reporting on the chief executive officer (CEO) and chief financial officer (CFO), the chief information officer (CIO) plays as well a significant role in the signoff of financial statements.

This completely new role was indirectly (not binding in the Act) assigned to the CIO. CIOs are responsible for the security, accuracy and the reliability of the systems conducting and reporting financial data. This is nowadays so because the financial reporting processes are essentially conducted by IT systems. Almost no company manages its data manually and the key operational processes of most companies are based on electronic management of data and documents. As obviously IT plays an important role in internal control, PCAOB's "Auditing Standard 2" stated that "The nature and characteristics of a company's use of information technology in its information system affect the company's internal control over financial reporting."

Systems such as ERP (Enterprise Resource Planning) are deeply integrated in the processing and reporting of financial data. That’s why they are inescapable milestones of the overall financial reporting process and consequentially must be compliant with Sarbanes-Oxley Act.

4.1.2 Assessment of the effectiveness of the internal control structure

Based on the requirement of SOX 404 for assessing the effectiveness of the internal control system, targeted questions were supplied to the 171 participants in the survey “SOX 404-Looking at the Benefits”. The composition of the questionnaire was as follows: 31,6% very large companies with sales over USD 6 Billion, 37,4% large companies with sales between USD 1 to 6 Billion, intermediate companies with sales between USD 200 Million and 1 Billion, small companies with sales less than USD 200 Million.

A variety of industries was presented in the questionnaire. So, for example 11.7% of technology companies, 24% of manufacturing, 9.4% insurance, 10.5% financial institutions other than insurance were addressed.

The results identified a strong Management Awareness and Ownership for Controls. It means that most survey participants believed that “their companies have gained valuable awareness throughout all levels of the organization about internal controls and the need for those controls”. In this sense, the objective of the legislator–-understanding the influence of controls on operations and commitment to responsibility for controls at management level—was completely achieved. Even more, many respondents saw the embedding of internal control ownership into the culture of the organization as a major benefit.

4.1.3 Main areas of improvement as a direct result of SOX 404

Evaluating and strongly aggregating the results of the survey “SOX 404-Looking at the Benefits” one can identify the two biggest areas of control improvements – the control environment and the anti-fraud awareness which are presented in the following 3.1.3.1 and ff. sections. These improvements would not have taken place without the Section 404 work.

By questioning the study participants in the above mentioned survey in order to identify the controls that were improved ***directly as a result of Section 404*** in their organizations, they ranked the following four categories:

- The control environment;
- Often-manipulated accounting areas;
- Routine accounting controls (not addressed in the next sections) and
- Anti-fraud activities.

4.2 General Assessment of SOX 404

4.2.1 Benefits

Understanding the public benefits is necessary for establishing a balanced view on the cost and benefits of internal control certification.

Financial Executives Institute (FEI) and others had noted the significant costs associated with Section 404. Most of the cost estimates, although high, do not include the cost of the external auditor's extra efforts in performing an integrated audit of internal controls and financial statements.

"However, given the massive financial scandals, decline in market capitalization, and resulting loss of investor confidence in the markets, believes Nicolaisen[9] that, of all of the recent reforms, the internal control requirements have the greatest potential to improve the reliability of financial reporting. Capital markets run on faith and trust that the vast majority of companies present reliable and complete financial data for investment and policy decision-making. Representing to the world that a company has in place an appropriate control system, free of material weaknesses, that gathers, consolidates, and presents financial information strengthens public confidence in the markets and encourages investment in the nation s industries. It is worth it, and it is absolutely critical that we get the internal control requirements right. "

Rating agencies, like Fitch Ratings, S&P and Moody's, also assess internal control information of companies. Fitch believes that investors should consider material weaknesses and significant deficiencies, when assessing credit ratings.

One can expect that the future costs of SOX 404 compliance will decrease as:

a) The initial investment in winning back public confidence was already done,

[9] Nicolaisen, D. T., chief accountant at SEC and a former partner with PWC; Speech at 11th Annual Midwestern Financial Reporting Symposium; October 7, 2004, available at www.sec.gov.

b) There is a learning curve associated with control evaluation and testing, and
c) Control processes, like many other processes, should become more efficient over time as companies implement process improvement methodologies.

These expectations, although meaningful, are speculative and generally merit further investigation.

Summary

Although it is quite difficult to summarize the major control benefits the results of the questions evaluated within the survey allows a ranking of a Top 10 list of control improvements, which is cited bellow:

1. A more engaged control environment under active participation by the board, the audit committee, and management;
2. Recognition that monitoring is an integral part of the control processes;
3. More structured year-end closing process and recording of journal entries, reflecting the increased complexity;
4. Implementation of anti-fraud processes in place;
5. Better understanding of the general IT control risks and the need to improve both control and audit procedures to mitigate IT control risks;
6. Better documentation of controls and control processes;
7. Improved definition of controls, and the relationship of controls and risk;
8. Embedding of control concepts into the organization;
9. Better audit trail for supporting both operations and audit assessment of control adequacy and financial reporting;
10. Re-implementation of basic controls, such as segregation of duties, periodic reconciliation of accounts, and authorization processes that had been eroded as organizations had downsized or consolidated operations.

4.2.2 Costs of implementation

As John Thain, CEO of the New York Stock Exchange states, "There is no question that, broadly speaking, Sarbanes-Oxley was necessary".

However, the cost of implementing the new requirements led to questioning the effectiveness and necessity of SOX.

The evidence shows that the cost of implementing Section 404 is extremely high. A study of the Financial Executives Institute (FEI) of 224 companies (2004) showed that for the larger companies' costs for complying with SOX 404 were far above of $3 million.

However, in order to outright evaluate cost, cost estimates have to be demarcated into

- costs due to initial documentation and testing (start-up) versus
- ongoing costs, as well as to
- costs due to uncertainty over the required evaluation process.

It is quite clear that SOX compliance costs in the first year are significant. What practically happened while applying SOX 404 was a mushrooming of the average expected cost increasing by more than 62%, from $1.93 million to $3.14 million, in a period of only six months (January – July 2004). The expected employee hours also drastically increased.

A key cost concern is the adjusting of information systems in order to comply with the control and reporting requirements. In this sense the information systems providing document management and access and analysis to financial data that were not furnished as auditing but just as information systems, must provide auditing capabilities to comply with SOX. This requires costly changes, or even complete replacement, of existing information systems been designed without the needed level of auditing details. Some other interesting aspect of the SOX legislation was the displacement of some business from New York to London, where the FSA (Financial Services Authority) regulates the financial sector with a lighter touch.

Concrete Reasons for the High Costs

1. Learning Curve

   A company-wide "internal" process of identifying, documenting, and testing of all key financial controls had not existed before SOX 404, in contrast to the previously common assessments of internal or external auditors. As financial controls start at the beginning of the transaction chain, their implementation was a time-consuming and expensive process. The role of preventive controls was recognized. As the whole undertaking was a process and methodology without previous experience, without try-and-error evidence, the persons involved were often inexperienced in the basics of accounting and controlling.

2. Time Pressure and Fees

   As the Sarbanes-Oxley Act was signed into law in July 2002, with an original December 2003 due date for complying with Section 404, the affected public companies started to look for advice at professional service firms (The Big 4), law firms, and their external auditor to understand the requirements under great time pressure. As a result of both the short time available for implementation as well as the lack of qualified and experienced resources, many organizations engaged external consultants to advise them. As the demand for the audit and accounting consultants grew, so did the cost of engaging them.

   Although the implementation date was actually postponed, the parallel issuance of the independent audit attestation standards (Audit Standard 2) increased the requirements on management as well as the external auditor. As a result the work pressure remained.

3. Attestation Requirement

   An excess cost appeared as a result of the requirement for duplicative detailed testing by the organization and by the external auditor. This redundant testing was clearly required by the Act itself while setting personal responsibility for the effectiveness of the internal controls over financial reporting with management (CEO, CFO) and parallelly requiring a test by an independent party, i.e. external auditor.

5 Conclusion

As a result of the big corporate and accounting scandals last decade a very stringent and subsequently expensive, in terms of implementation, rules of the Sarbanes Oxley Act were introduced. Its major objectives – improving internal control systems, placing personal responsibility for financial reporting on management (CEO, CFO), introducing strict anti-fraud measures, insuring auditor independence and strict corporate governance –

were achieved at a very high price. Although, when assessing the impacts of the Act one has to analyze the costs and benefits resulted from it and to admit that there were significant public benefits such as gaining back the trust of investors in reliability and credibility of corporates' financial data and financial processes.

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Management Accounting and Control Systems

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The main objective of management accounting is to provide managers with information for making their business decisions and allow them to fulfill and improve their management and control functions. Both Management Accounting and Financial Accounting deal with the use of economic information, and among others accounting information, but from different points of view: management accounting focuses on economic information to managers and employees within the organization while financial accounting deals with the economic information to external individuals (such as stake and share holders) and/or external organization (such as regulatory authorities). However integrity of both approaches is indisputable and can be best tracked in the necessarily and unconditionally required system of internal control in every enterprise, industrial company or financial institution. In order to evaluate and improve control functions, managers necessarily need a robust system of financial controls for insuring the functioning of proper business and financial processes as well as reliability, completeness and accountability of financial information they use for their business decisions. Establishing a robust financial control system is very important for preventing and/or detecting the risks that may occur in a financial process. Although internal control systems protect the organization's assets from fraud or theft, little attention was paid to evaluating the appropriateness of management's governance. After the massive corporate governance failures in 2002, organizations called on management accountants to develop structures to motivate and monitor compliance with behavior that is consistent with the organization's best interests. As a result of the violation of the main principles of internal controls, a new Act (the Sarbanes Oxley Act) was introduced. Section 404 of the Act, which aims at improving internal controls and placing more responsibility on management (CEO, CFO) for preparing financial reporting, was intensively criticized, especially regarding its high costs of implementation. Sec 404 is a new external requirement for improving internal controls.

Key words: Management accounting, SOX 404, Financial Controls, Control Activities, Segregation of Duties.

JEL classification: M40, M41, M42.