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# MAPPING FRAUD RISK IN FINANCIAL AUDIT – SALES OPERATIONS

Theoretical  
article

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Fraud risk

Risk assessment

Materiality and significance

Fraud risk map

Financial audit

## **JEL Classification**

M12, M14, M41, M42

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## **Abstract**

*This paper provides an effective tool « fraud risk map» for organizations and auditors in mathematic assessment procedures, with real, tangible results, regarding the organization's fraud risk exposure. Overcoming the fade and purely theoretical risk assessment methods (« based on professional judgment – risk: high, medium, low«), the paper presents risk indicators as warning signals and quantitative and qualitative methods for risk assessment. Illustrating scalability methods and develop a practical tool for material misstatement of the economic entity financial statements, the case study presented, on sales operations, brings added value to auditors work in the fraud risk assessment procedures.*

## 1. Introduction

The objectives of the fraud risk management can be summarized by stretching the area from the management to end-user point of view. It identifies three possible levels of fraud risk analysis: macro risk, micro and mega risks in terms of management, Board of Directors and external auditors.

## 2. Risk Identification

Types of fraudulent financial reporting outlined by Association of Certified Fraud Examiners in USA focus on improving the image of the organization: financial income overstatement, understatement of losses, or presentation of information that will mislead the users.

Fraud schemes are related to misappropriation of tangible assets (cash, property, stocks) and intangible assets (property rights on products or patents, privacy, resources, rights, know-how, information about customers, suppliers, employees, historical database information). To protect these assets, the company must ensure that it has sufficient information about the fraud risk associated with misappropriation of assets, the assets concerned, the physical locations where they are, the staff having access to them. Frequent typology of assets misappropriation fraud can be divided by type of fraud perpetrators, such as: employees, employees in relation to third parties, suppliers, customers. Asset misappropriation frauds committed by employees include: creation of fictitious invoices from suppliers (then pay their invoices for goods or services never received), theft of physical assets inventoried or use for personal interest, stealing information database with lists of customers, suppliers. Assets misappropriation may occur when employees are in relation with third parties to commit fraudulent act: paying inflated or fictitious invoices to suppliers,

providing pricing and delivery terms, invoices, receipts by customer preference, rigging contracts or tenders, theft and providing information to third parties in order to achieve a gain at the expense of the company.

Assets misappropriation can be made by third parties without the involvement of employees in the company (providers suspected of over-bills, or the insurance of invoices for fictitious services, conducting improper transport or substituting other goods ordered with lower quality). Customers may request fraudulently compensation (cash or replacement goods, or free provision of services), following the submission of false claims.

To determine the fraud risks, organizations must consider the Report on Corruption in the country and the Corruption Perceptions Index issued by Transparency International annually. The Corruption Perceptions Index is useful in building appropriate fraud risk maps as for the economic reality in which the company operates.

## 3. Factors associated with fraud schemes

The fraud risk assessment should consider the types of fraud (fraud schemes) that are likely to occur in the organization, taking into account the specific activity. Screening and preventive measures will be more effective if they are focused on specific fraud schemes punctual likely to appear in that environment. Any red flag (warning sign) must be treated as a type of fraud scheme and needs to be included in the fraud risk assessment.

## 4. Warning signs (red flags) for fraud scheme

Warning signals (red flags) for fraud include accounting anomalies, unusual and undocumented transactions or events, behavioural changes of individuals or weaknesses in internal control system. They are recognized in the literature as "fingerprints for fraud", although they are

more an alert than a suspicion to be investigated in order to determine the result.

Identifying these warning signals and their association with the internal control system is an important step for effective antifraud strategies development, functioning both as a detection method and a prevention one.

As general warning signals (fraud indicators) are recognized: accounting anomalies, rapid and irregular profitability, internal control weaknesses, aggressive executive managers interested in accounting policies of non-financial executives, behavioural changes, irritability, suspicion, increased defensive character, tendency to blame others, changes in lifestyle, refusal to take vacations, addiction problems, family problems, constant pressure from the family to the company's success and performance, constant complaints about manner in which it is treated at work, refusal to promote or to be transferred, the need for absolute control, preferential treatment of employees, customers, suppliers, classification of transactions, low or no transparency in company policies.

For each major fraud scheme (fraudulent financial reporting, asset misappropriation, corruption) typically red flags are considered on the basis of the decision makers or the behavioural and diverted resources.

#### **A. Scheme of fraudulent financial reporting**

##### *1. Income fictitious timing differences*

- rapid and unexpected growth in profitability;
- negative cash flows relating to receipts from customers, having also a gradual increase in sales and receivables;
- significant transactions with relational parts of the same group (transactions are not used), relational parties are not subject to an audit or audited by a different audit office;

- significant transactions, unusual and highly complex in financial year or before a reporting closure periods;
- unusual increase in daily sales without payment;
- significant sales by companies that are not known and are not part of the entity's client list;

##### *2. Understatement of expenses and liabilities*

- negative cash flows from operations or an inability to generate economic cash flow, while the reported sales increase;
- estimates of assets, liabilities, income and expenses based on subjective judgments or uncertainties that are difficult to measure;
- excessive participation for executive non-financial managers in selecting accounting principles and policies and in assessing significant estimates;
- unusual acceptance of returns, warranty claims, return of goods already sold;
- sudden reduction of debt, given the competitive market has an increasing trend of payment terms to suppliers.

##### *3. Presentations distorted*

- dominance by a single person or a small group of people in management, without control over rewards;
- Board of Directors or Audit Committee ineffective in supervising the financial reporting process and internal control system;
- ineffective communication systems, regarding compliance of the company's values and ethical standards;
- rapid growth of the company's profitability;
- significant transactions with relational parts of the same group

(transactions are not used) , relational parties are not subject to an audit or audited by a different audit office;

- significant transactions, unusual and highly complex in financial year or before a reporting closure periods;
- significant transactions carried out through bank accounts established in subsidiaries, in tax free zones, which nature and importance cannot be justified.

#### 4. *Incorrect assessments of assets*

- negative cash flows from operations or an inability to generate economic cash flow, while the reported sales increase;
- significant decreases in market demand;
- estimates of assets, liabilities, income and expenses based on subjective judgments or uncertainties that are difficult to measure;
- excessive participation for executive non-financial managers in selecting accounting principles and policies and in assessing significant estimates ;
- unusual revaluation of assets and impairment;

### **B. Asset Misappropriation Fraud Scheme**

#### 1. *Cash Embezzlement*

- unexpected declines in revenues;
- unexplained differences between reports of receipts and bank statements;
- changes in lifestyle for an employee or manager, changes that are not sustainable by the declared revenues;
- inadequate segregation of duties between those who collect money and those recording in the accounts.

#### 2. *Payments / reimbursement fraudulent*

- Inadequate segregation of duties (registration payments and reconciliation documents should not be made by the same person);
- cashiers / sales agents did not need permission to repay amounts or goods ;
- employees without authorization can reverse any transaction;
- reimbursements are not checked in a methodical and systematic manner;
- various cashiers operate on the same system of payments or receipts without different application access codes;
- personal payments identified in the cash registers;
- cancelled transactions are properly documented but are not approved;
- records missing or altered documents;
- non-chronological numbering system for transactions or documents;
- unusually high number of cancellations or refunds of amounts in the cash register;
- amounts presented in the documents are physically altered (elated, copied);
- cash registers tabulation is incorrect;
- multiple refunds or cancellations for amounts just below the limit requiring approval from a superior;
- cancelled or missing payment instruments;
- payment instruments altered, duplicated or false;
- customer complaints or requests for payment providers on unreal or late payments;
- incomplete contracts (missing address, phone bank account);
- similarities in the contact information of suppliers and contact information of an employee or manager;

- amounts using round numbers;
- purchase of goods or services unrelated to the business;
- purchase of goods or services at a much higher price than the market offer;
- misuse of financial documents issued numeric sequences;
- unjustified increase in the wage in certain months;
- increased salary expenses for employees who: do not take breaks, have no deductions and have access to IT system passwords;
- employees with identical contact details (address, phone, bank account name).

### 3. *Illegal Transactions*

- customer complaints on paying notifications received;
- receipt of notification and payment summons from suppliers;
- employees who work overtime constantly (scheme usually used to achieve a double accounting and financial documents pimp) or do not take holidays.

### 4. *Fraud of non-cash assets (abuse and embezzlement)*

- favourable treatment applicable to a provider;
- discounts without authorization or approval;
- active and non-inventoried stocks;
- misapplication in asset inventory system;
- high rate of return on assets for non-compliance incidents;
- similar goods for sale at a lower price on the black market;
- improper announcing promotions offered by the company.

### **C. Fraud Scheme assimilated to Corruption - Conflicts of interest, bribery, illicit gratuities, economic blackmail**

- large number of transactions with the same customer or supplier;

- incompatibility on chart positions on the status of certain persons (the public policy interests, holding multiple positions);
- relationship between an employee and a manager or a third party, relationship that has not been made public;
- segregation of duties is weak or non-existent;
- visible change of lifestyle of an employee or manager with unsustainable revenues.

### **5. Assessing fraud risk probability of occurrence and impact**

Fundamental concepts on fraud risk assessment refer to probability (chance that an event will occur) and impact (magnitude of the event, if it occurs).

Theoretical delimitation of the concept is simple, but practical application is difficult and many factors should be taken into account: the risk assessment tools used and how accurately the managers are measuring the risk.

The work consists in assessing relative inherent fraud risk and its impact based on historical data about the organization and the statements of the Company and shareholders or associates. Likelihood and relative importance assessment of the inherent risk enable the organization to effectively manage the fraud risk and implement rational prevention and control procedures.

It initially considers all risks at inherent base as having a medium, high or very high level, without taking into account the existing internal controls. In this way there will be an assurance that all risks have been taken into account. After construction of the fraud risk map and after their association with specific internal control, residual risk can be determined.

This inherent risk includes the risk that management can circumvent without internal controls established in the organization. Management team must

assess the fraud risk importance (residual risk) and decide, based on cost-benefit analysis, of internal over controls to be implemented.

Inherent probability of fraud is determined by external factors - history of fraud occurring in the organization, the business sector fraud and internal factors - the number of individual transactions, their complexity, number of people involved in the development, approval and review of all processes.

To measure the probability we can scale systems use either qualitative (very, very likely, likely, unlikely, very unlikely) or quantitative, where the same situation has an associated probability scale value.

The probability of occurrence is assessed according to the presence of warning signals. Thus, for each identified fraud risk there are determined the actors involved (risk is associated with departments, people, operations) and then check behavioural warning signs, building the fraud triangle on that scenario.

Assessing the inherent fraud risk impact, requires assessing both the financial statements and monetary matters, and in transactions, the value of owned brands, the reputation, the responsibility for compliance with the law and specific regulations.

The fraud risk impact can be quantified in monetary amount or may be an event that will lead to losses.

As amount of damages, the impact is determined using the basic professional assessment of materiality. Thus, depending on the item damaged, or transactions or operations, the impact can be considered, taking into account the standard bases: net profit, turnover, total assets, and net assets. The standard assessment bases are improved by subsequent reporting bases: all invoices from service providers, all customer bills, stocks of some type, property of some kind. The assessed impact becomes a real dimension, based on actual importance of the amount distortion in direct relationship with the operative

element of origin and the overall significance level of the organization (level determined by using the standard basis).

For this reason, it is insufficient to develop a risk matrix of the entire company, a detailed presentation of these matrices by level of operations or economic factor is more reliable.

Maintaining scalability described above, we have for each group of operations or departments a procedure establishing the level of impact as in Tables 2 - 3.

For each group of operations we will determine the significance for a true average impact level, using standard base. Exceeding this limit with minimum 25 % pass in the higher impact - "high" and above with minimum 25 % impact - "great" is considered "very high". Under materiality analysis takes account of the group's own base of operations.

Group operations: Financial-Accounting (investigating accounting, receivables, payables) use the materiality threshold - Gross Profit.

After determining the impact of each group of transactions, each identified fraud risk can be assigned a value to build Fraud Risk Map. The association value for risk involves developing scorecards and risk-taking as credible and reliable values for likelihood and impact of a a risk. The assessment formula respects

$$Risk = Probability * Impact$$

and produce a fraud risk matrix for each group of operations.

## 6. Case study on Sales Operations

Eg. Wolfgang AG. performs risk management process on sales operations. The company sells IT products and software licenses for basic home users. Wolfgang AG. turnover for 2012 was \$ 16.58 million. Marketing activities are conducted through sales agents who place merchandise to customers and then invoices the firm to collect the following through the banking system. Society rewards for sales agents and sales division

director for performances in a period of one year. Agents are equipped with electronic invoice and printed documents for non-compliance finding.

**Fraud risks identified in the risk management process are:**

- Bribes paid to a client by sales-people to sign contracts;
- Bribes paid to a customer by a competitor;
- Loss of information about prices and discounts applied or the preferential agreements;
- Forward orders received by agents employed by competitors;
- Falsification of sale documents by agents, so delivery to be made elsewhere;
- Placing of goods to customers based on trial-periods and reporting as sales to the company;
- Increase the level of sales by reaping the rewards;
- Delivery of goods to customers other than as ordered;
- Billing customers without their knowledge and then report the sales invoices reversal;
- Credit notes to mask irregular reductions granted for sale.

Scalability has been carried out in Table 4. Materiality was determined using the average as the basis - Turnover (CA).

Following this analysis it was established that the fraud risk matrix for sales is: the columns have the likelihood and the lines have the impact for fraud risk, the result being diagonally:

$$Me. \text{ Fraud Risk} = \frac{\text{Probability} * \text{Impact}}{2}$$

The colours for risk matrix in Table 5, are: green - very low risk, yellow - low risk, yellow - medium risk, red - high risk and purple - very high risk.

Fraud risk assessment (Table 6) gives us the level of exposure for Sales Operations, calculated as the arithmetic average of the nrisks identified and determined  $R_i$ .

$$\text{Risk exposure} = \frac{\sum_{i=1}^n R_i}{n}$$

If Wolfgang AG fraud risk exposure for sales operations is:

$$\frac{31.5 + 40.5 + 12.5 + 13.5 + 22.5 + 17.5 + 17.5 + 7.5}{8}$$

meaning an increased risk of fraud.

Risk Map for Sales Operations in the fraud risk management at the company Wolfgang will appear in Figure 1.

The analysis of risk map that SC Wolfgang AG shows that the company needs to improve internal on control sales operations group and the response measures to fraud as priority and immediate.

**7. Conclusions**

An important role in the fraud risk map is assessing the impact of information technologies (IT) in the company over its security. Expansion of the economic environment has generated that many information necessary for running a business and speeding decision making relies on information technology. Information systems are linked to national and global networks face a variety of permanent cybercrime threats that can lead to significant financial losses. IT Assessment is an important component of any risk assessment, especially when considering the fraud risk. Risks associated with IT systems include threats to data integrity, threats from hacker's security system and theft of financial and operational information. Information technologies can be used by potential perpetrators to commit fraud in any of the main areas, either in the form of hacking, economic espionage, Web configuration, the data sabotage, computer viruses, and unauthorized access to data.

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Probability level	Associated Value
Very big	9
Big	7
Medium	5
Little	3
Very little	1

Table no.1 The probability of occurrence

Materiality	Impact	Value
$>c = 1.25 * b$	Very High	9
$>b = 1.25 * a$	High	7
$>a = 5-10\% * \text{Profit brut}$	Medium	5
$>d = 0.75 * a$	Small	3
$>e = 0.75 * d$	Very Small	1

Table no.2 Impact level Financial-Accounting group operations

Materiality	Impact	Value
$>c = 1.25 * b$	Very High	9
$>b = 1.25 * a$	High	7
$>a = 0.5-1\% * \text{Cifra de afaceri}$	Medium	5
$>d = 0.75 * a$	Small	3
$>e = 0.75 * d$	Very Small	1

Table no.3 Impact level for Group Sales Operations

Probability		Impact		
Level	Value	Materiality	Level	Value
Very High	9	$1.25 * 207.250 = 259.063 \text{ RON}$	Very High	9
High	7	$1.25 * 165.800 = 207.250 \text{ RON}$	High	7
Medium	5	$1\% * \text{CA} = 165.800 \text{ RON}$	Medium	5
Small	3	$0.75 * 165.800 = 165.434 \text{ RON}$	Small	3
Very small	1	$0.75 * 165.434 = 124.076 \text{ RON}$	Very small	1

Table no.4 Determining the risk of fraud in Wolfgang AG. - Case Study

9	4.5	13.5	22.5	31.5	40.5
7	3.5	10.5	17.5	24.5	31.5
5	2.5	7.5	12.5	17.5	22.5
3	1.5	4.5	7.5	10.5	13.5
1	0.5	1.5	2.5	3.5	4.5
<b>Probability / Impact</b>	1	3	5	7	9

Table no.5 Fraud risk matrix Sales operations

Fraud risk	Probability	Impact	Risk - Valoare
Bribes paid to a client by salespeople to sign contracts	9	7	31.5
Bribes paid to a customer by a competitor	9	9	40.5
Loss of information about prices and discounts applied or preferential contracts;	5	5	12.5
Forward orders received by agents employed by competitors	3	9	13.5
Falsification of documents for sale by agents so that the delivery to be made elsewhere	7	9	22.5
Placing of goods to customers based on... and reporting to company sales	5	9	17.5
Increase the level of sales by... reaping the rewards	5	9	17.5
The delivery of goods to customer... ordered	3	9	7.5

Table no.6 Safety assessment of fraud risk

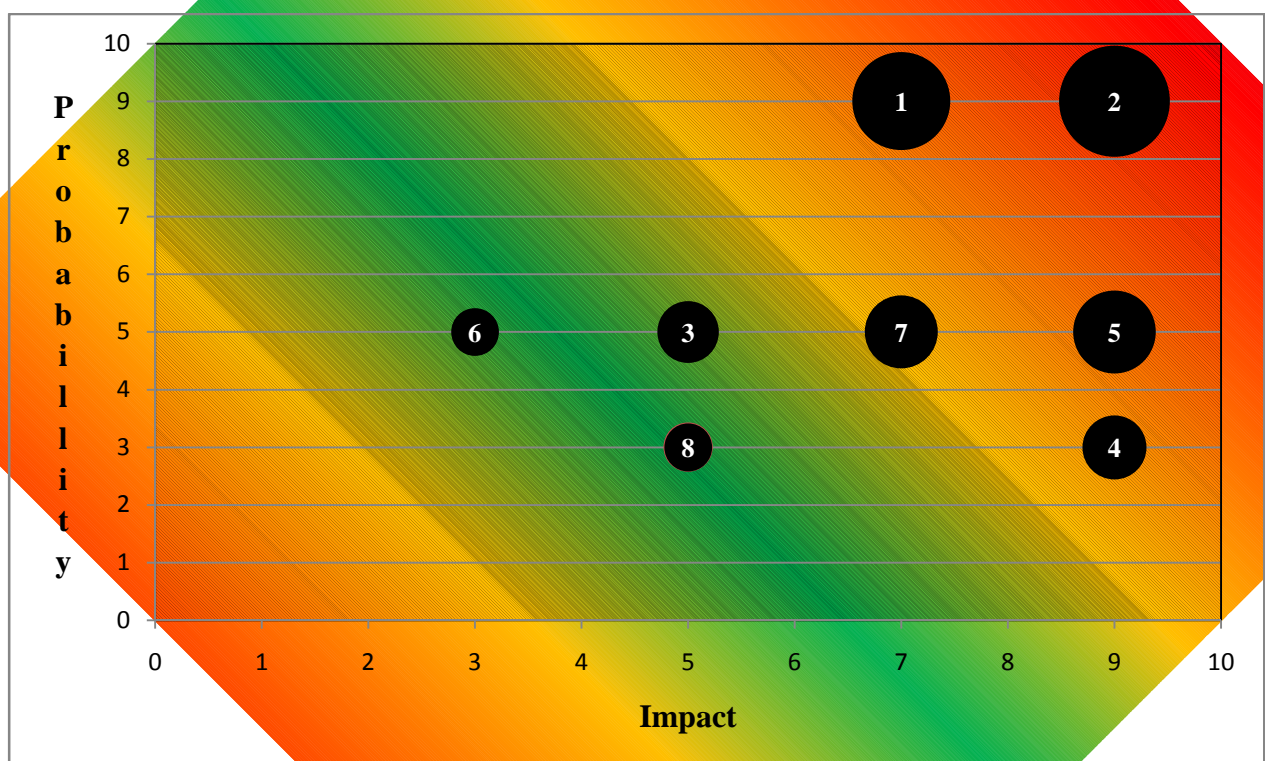


Figure No.1 Fraud risk matrix