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# Procedures for Identifying Operational Risk

**EL HADDAD Mohamed Yassine[1], NAIT BOUBKER Hanane[2]**

[1, 2]Department of Management, University of Mohamed V, Faculty of Law, Economics and Social Sciences Rabat-Agdal, Morocco

**Abstract:** ***Organization must develop a proper risk's management. In this perspective, the risk mapping is a great tool. Indeed, it allows us to relate all the risks the company faces. It is for the general management steering tool for decision making. You will find in this paper a case study to better understand the steps to follow to realize a risk mapping.***

**Keywords:** Operational Risk, Internal Control System, Operational Risk Mapping, Basel II

## 1. Introduction

Over the past decades, major upheavals in the international financial market have prompted regulators and supervisors to develop universal methodological devices and tools to address the fragilities of financial institutions. Bank risk management remains the most significantt component of these regulatory changes, in particular operational risk management, which has been the subject of several reflections and regulatory considerations.

Operational risk is not a recent risk; it has always existed at all organizational levels and in all banking activities. However, the treatment of this risk independently of other risks (including credit and market risk) is beginning to be taken into consideration by financial institutions.

Operational risk management is considered a sensitive task by the majority of financial institutions because of the complexity of defining the risk, identifying its origins and quantifying it. In this sense, the Basel Committee has issued several recommendations in this area through its various agreements, which provide a framework for the development of financial institutions and enable them to design their own methods identification and risk measurement.

The aim of this work is to set out the various methods of identifying operational risk, which require a detailed analysis procedure of all the bank's activities in order to assign them to the various business lines.

In order to take operational risk into account, before managing or covering it, two main steps are required:

- An identification step, at each level of the organisation, of the processes supporting proven or potential operational risks, it is then a question of formulating these risks and rating them (probability of occurrence/loss). This stage is that of risk mapping ;
- A step in setting up an incident collection system.

**Input of the "process" approach into operational risk identification**

Identifying the different sources of operational losses in a bank is a major step towards effective management of operational risk regardless of its nature and the activities it affects. From this perspective, the "process" approach is an efficient and well-structured approach to accurately and targeted identification of this risk.

### 1.1 Principles of the "Process" Approach

The "process" approach, also known as the top-down approach, involves analyzing the processes within each unit to identify the types of operational problems that may arise at each stage and the frequency of these problems, taking into account the controls put in place. They then link possible losses to each type of problem and each unit. Since banking activity can be divided into a large number of processes[1] and each process can be subject to several types of operational incidents, this systematic approach is time-consuming and costly. It is only justified if a 20/80 type rule appears, that is, a small number of processes and incidents generate the majority of operational losses. It is difficult at this point to say that such a rule applies. However EBNOTHER and AL calculate in the production unit of a single bank, 10% of the processes and a single factor (fraud) explain 98% of the VaR. It is not unreasonable to think that a small number of critical processes and incidents are at the root of most of the operational risk.[2]

### 1.2. Steps in the "Process" Approach

We describ here an extremely detailed analysis of the bank's activities, the types of losses and how to control operational risk.

**1.2.1. Determination of Process Schemas**

The bank must break down each activity into a certain number of processes the "payment and settlement" activity, for example, can be broken down into 6 processes:

Cash, bank cards, cheques, direct debit, transfers, complaint handling and incidents.

Each process takes place in several successive stages. At this level, the degree of finesse and appropriateness of the description of the process must be reduced. The greater the finesse, the greater the number of steps. The desire to standardize processes to simplify risk management is also a source of mismatch between the actual process and its representation.

[1] JEZZINI M. «Modélisation du risque opérationnel», Phd thesis in Management Sciences, Université d'Avignon, 2007, p 56.
[2] JEZZINI M. «Modélisation du risque opérationnel», Phd thesis in Management Sciences, Université d'Avignon, 2007, p 56.

Let's take the example of the "payments settlement" activity. The steps can be standardized to apply to all types of payment methods. These include :

1) Receiving the client's instruction;
2) Processing the transaction;
3) Recovery/Position;
4) Customer Information;
5) Archiving.

This formalisation simplifies the number of steps and erases some of the differences in the treatment of the various means of payment. Staff are therefore very reluctant to accept these new formalisations which deny the specificity of many tasks and the diversity of constraints attached to them.

### 1.2.2. Identification of Risk Events

For each process, or group of processes, of a given activity, it is a matter of determining the types of incidents that may occur. The events are grouped according to the chosen risk typology.

Example: Species processing process

**Table 1:** Example of risk events for the treatment of species [JEZZINI M. «Modélisation du risque opérationnel», Phd thesis in Management Sciences, Université d'Avignon, 2007, p 51.]

| Types of events | Examples of risk events |
|---|---|
| Execution, delivery and process control | Late deliveries of currencies or travellers, mismanagement of currency stocks, discrepancy in balances on the cash register, etc. |
| Business interruption, system failure | ATM out of service (technical issue) |
| Internal fraud | Misappropriation of funds by staff, fraudulent configuration of Atms… |
| External fraud | Fraudulent use on ATM of a lost or stolen card, false notes not detected… |
| Pay practices Security of premises | Hold up in an agency |
| Damage to tangible assets | ATM out of service (vandalism) |

Source: JEZZINI M. «Modélisation du risque opérationnel», Phd thesis in Management Sciences, University of Avignon, 2007, p 51

These examples clearly illustrate the importance of the work to be done in the process-based bottom-up approach. For the "payments and delivery" activity alone, it is necessary to define 6 processes, of 5 steps each, which can undergo 7 types of operational risk events according to these three dimensions, therefore includes 210 boxes. Assuming roughly the same complexity for all activities, it is possible to estimate between 1000 and 2000 the number of types of operational risk events for a bank as a whole.

Each type of risk event comprising several risks is therefore several thousand or tens of thousands of risk events, it is necessary, in principle, to determine the frequency (probability of occurrence) and the potential impact (loss). It is clear that this approach is largely unenforceable in the current state of internal databases. In addition, the cost of collecting and processing such a large amount of data is likely to be excessive.

### 1.2.3. Risk Evaluation

Given the number and diversity of risk events, it is not possible to apply identical treatments to them. In-depth evaluation methods should focus on events according to their impacts.

**Table 2:** Example of a risk rating matrix [JEZZINI M. «Modélisation du risque opérationnel», Phd thesis in Management Sciences, Université d'Avignon, 2007, p 52.]

| Fréquence/ Impact | 1 Keuro | 10 Keuro | 100 Keuro | 500 Keuro | 1 Meuro | 5 Meuro | 10 Meuro | 50 Meuro | 100 Meuro |
|---|---|---|---|---|---|---|---|---|---|
| <3 months | Very strong | Very strong | Very strong | Very strong | / (a) | / (a) | / (a) | / (a) | / (a) |
| 6 months | Strong | Strong | Strong | Strong | Strong | Very strong | Very strong | / (a) | / (a) |
| 1 year | Average | Average | Strong | Strong | Strong | Very strong | Very strong | / (a) | / (a) |
| 2 years | Average | Average | Average | Strong | Strong | Strong | Very strong | Very strong | Very strong |
| 5 years | Average | Average | Average | Average | Strong | Strong | Strong | Very strong | Very strong |
| 7 years | Low | Low | Average | Average | Average | Strong | Strong | Very strong | Very strong |
| 10 years | Low | Low | Low | Average | Average | Average | Strong | Strong | Very strong |
| 15 years | Low | Low | Low | Low | Average | Average | Average | Strong | Very strong |
| 20 years | Low | Low | Low | Low | Low | Average | Average | Strong | Very strong |

(a) if the risk is very high, one can imagine that it is already the subject of proceedings to eliminate it.

*Source: JEZZINI M. «Modélisation du risque opérationnel», Phd thesis in Management Sciences, Avignon University, 2007, p 52*

In order to better understand the nature and degree of significance of risks, expert meetings can provide an initial risk rating by completing frequency/impact matrices.

The filling of this type of matrix collides with the lack of data (same wave) for many types of operational risks. However, the creation of systematic databases should remedy this problem in the coming years.

From these matrices, banks can define different risk management strategies. DERRIEN & GOLDENBETG present the CDC grid [EBNOTHER, S., LEIPPOLD, M., and VANINI, P.: "Modeling operational risk and its application to bank's business activities", PREPRINT, 2002, p 58]:

- Acceptable risks: these are the low compressible risks inherent in the activity, they are covered by the institution's own funds;
- Repetitive risks: the aim is to reduce their likelihood of occurrence by preventive measures and the improvement of internal control, if these measures are insufficient, they must be guaranteed or contractual transfer clauses introduced;
- Residual and unbearable risks: the objective is to leave the hazardous areas by lowering them below the sensitive

threshold. Assurance and the Business Continuity Plan (BCP) are two methods of achieving this.

## 2. The Construction of the Operational Risk Mapping

Risk mapping is a living process for identifying, assessing and prioritizing operational risks that may have an impact on a process or business line [MURIEL F. : « Cartographie des risques : quelle valeur ajoutée, quel processus ? », 2001, p.68]. In this respect, this tool constitutes a fundamental element of the risk management and internal control system of the banking undertaking. It is the starting point for all other actions necessary to reduce, control or transfer risks, since it contains all the necessary information, allowing decisions to be taken in terms of corrective actions in relation to exposures to risks that are too large or insufficiently controlled.[3]

The mapping process, which takes 4 to 5 months (sometimes longer) is an opportunity for banks to learn organisational skills, where each individual and each department has the opportunity to question the operational risks perceived or experienced in their daily lives. This culture of operational risk is only emerging in banks, of course, because "we are lagging behind the industrial approach where we are looking for risk step by step in the processes"… , but "it's culturally quite changing[4]".

### 2.1 Objectives of the construction of the operational risk mapping

Risk mapping is the most popular tool for inventory and risk assessment. Moreover, its implementation is recommended by some reference work[5]. However, limiting ourselves to this regulatory aspect would be a mistake for the bank's managers and other players. By making a full diagnosis of the bank through the risks it faces, the mapping can be integrated into a more global management approach that favours the improvement of the organization's performance.

In other words, Measuring the importance of the risks identified, makes it possible to define possible action plans to reduce them to a level of threat acceptable to the bank.[6] On the other hand, the mapping must be accompanied by an analysis of the costs and benefits of each treatment. By combining the two, risk management can choose an optimal solution for the bank that combines mapping efficiency and economic profitability.[7]

In addition, the mapping allows the development of a graphical representation of risks according to their impact on the banking enterprise, which facilitates the preparation of reports (or plans) internal controls associated with each risk. Where appropriate, other controls are easily put in place to improve communication about the bank's risks in the interests of clarity to shareholders and financial authorities.

### 2.2 Practical Modality for the Implementation of Mapping

The construction of the operational risk mapping. For this, several principles and methods are implemented, the realization of the mapping itself includes several phases[8]:

1) List the processes;
2) Identify the associated risks;
3) The graphic representation.

#### 2.2.1 List the processes

This is the first phase of inventory of the domains and processes of the entity under study. This is an important step that provides a cross-sectional view of the bank and makes it possible to identify, in a precise way, the risks associated with the strategic objectives. Without a link between risks and processes, it will be difficult to implement action plans.[9]

The first step is to break the organisation into several subsets, which requires an understanding of the bank's business, by identifying and describing the major processes of the organisation.

For example, different processes within organizations were identified and studied:

- A "business-to-manage" process (financial policy, manage commitment stocks, transaction, etc.) that causes certain well-identified risks such as internal fraud, non-compliant bank practices, individual practices not permitted by internal regulations and procedures…
- A "business-to-develop" process (commercial policy, prospecting, sale of credit products, etc.) that causes other types of risk such as customer advice failures…
- A "support" process (accounting, tax, legal, logistics, human resources, etc.) at the origin of the risk such as unavailability of IT systems, administrative document management failing…
- There are several techniques for representing processes. Most Moroccan banks use the UML matrix.[10]

[3] [3] ALLEAUME D. : « La cartographie des risques, jusqu'ou aller », Revue banque N°45, 26 mai 2011, p58.
[4] Interview with a Director of Commitments and Risks at one of our national banks, 2004.
[5] The work of Basel (2003) and the report on good practices for the management and monitoring of operational risk (2003).
[6] CHAPELLE A., HUBNER G., PETERS J-Ph: "Operational risk: Applications of the Basel Agreement for the financial sector", DEBOECK&LARCIER, 2005, p. 208.
[7] HULL J., GODLEWSKI C., MERLI M., "Risk Management and Financial Institutions", Paris, PEARSON EDUCATION, 2007, p 448.
[8] DEMESTERE S., LORINO P. "Risk Management and Strategic Process", PEARSON EDUCATION, 2002, p. 38. www.afc-cca.com/docs-congres/congres 2000/ Angersifichiersidemeest.pdf
[9] CERNES J. "New Banking Risk Management", 2004, p 51.
[10] [10] Unified Modeling Language

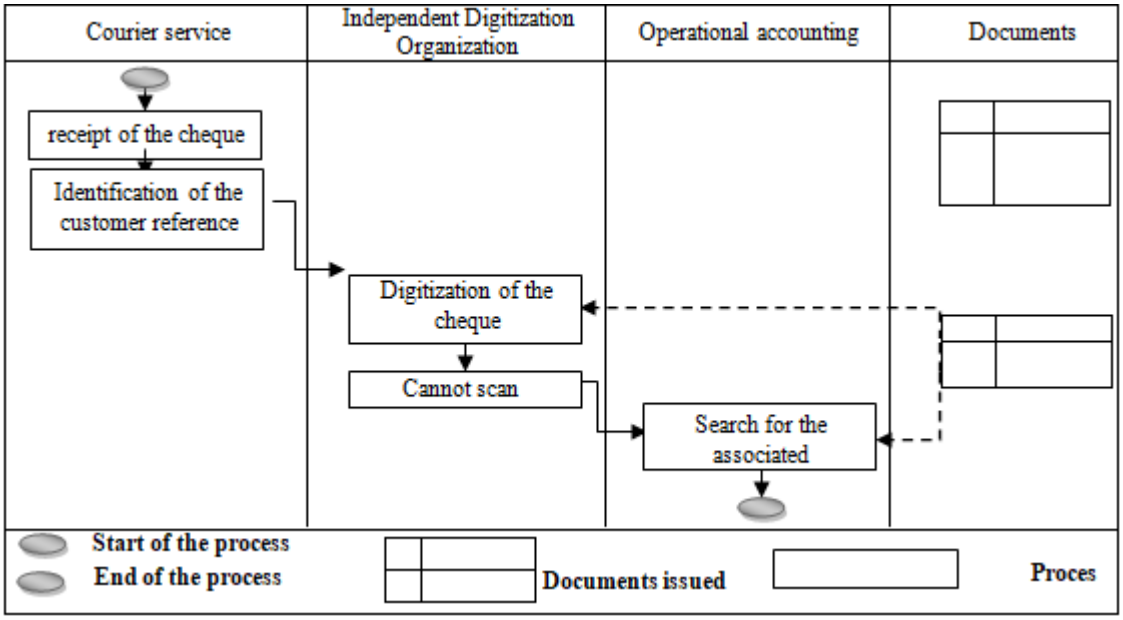


**Figure 1:** Example of UML Matrix
Source : GNENNEPOIS N. : « Réalisation d'une cartographie des Risques », Opti-Décision, 09/2010

**2.2.2 Assessment of Associated Risks**
This second phase consists of three distinct points:

- Identification and formulation of the main risks of each process, their essential causes of implementation and the consequences induced in the event of occurrence (risk + cause = risk event);
- A rating of risk events in frequency and impact;
- Prioritization of risk events.

**2.2.2.1. Identification of associated risks :**
The identification of processes and associated risks requires taking into account two methods: the "Bottom-Up" approach and the "Top-Down" approach.

- For the "Bottom-Up" approach, the identification is carried out by the operatives close to the activity and goes back to the persons in charge of the mapping.
- In the "Top-Down" approach, the people in charge of mapping will go down to look for the information.

**Table 3:** Top-Down and Bottom-Up Approach

| | *Top Down* | *Bottom Up* |
|---|---|---|
| Etape 1 | Risk Analysis: Risk identification is done by members of the Executive Committee. The dangers are therefore identified according to the bank's strategy. | Identification of processes: The level of detail required determines the level of contact to be met. Identification will take the form of open questionnaires or interviews. |
| Etape 2 | Linking risks to processes: Consistency of risks identified with the entity's activities and completeness of the mapping. | Risk Identification: Identification of the risks of the activities and the risks associated with the interactions of these activities. |
| Etape 3 | Assessment and prioritization of the organization's risks: the review of strategic risks ensures that the transversal or managerial processes are taken into account, which may be in line with the branch management. | Assessment and prioritization of corporate risks: Allows for a more comprehensive identification of risks. Consultation of the operatives for the realization allows a better involvement. |

*Source: GRENNEPOIS N. "Réalisation d'une cartographie des risques", Opti-Decisison, 09/2010, p.9.*

**2.2.2.2. Linking risks related to business processes :**
The business processes are specific to each organization, they depend mainly on their activities. From the identification of these processes it is possible to identify the associated risks. [LAMARQUE E. "Bank Management", Ed. PEARSON, 2004, p.28.]

In addition to the documentation review and the audit of the existing procedural repository, interviews with operational managers and questionnaires are a key part of this approach. [Idem, P.37.]

**2.2.2.3. Identification of risks related to support processes :**
The supporting processes are general processes and can be extended to all enterprises. Risks can also be classified according to the context in which they occur and their impact on the organization.

There are 7 families:

- Unreliable information;
- Loss of competitiveness;
- Excessive cost;
- Cessation of activities;
- Non-compliance with laws and regulations;
- Loss of assets;
- Disclosure of sensitive information.

**2.2.2.4. Risk assessment**
It consists in assigning a rating to the identified risk events, whether in a quantitative way in terms of frequency/severity, or qualitative following the choice of scales.

Choice of axes:

The risk exposure assessment shall be based on an assessment of the frequency of occurrence of the risks and the financial impact with regard to the control system implemented.

As a result, the risk assessment often begins with the gross or intrinsic risks, which are the risks that weigh on the activity, regardless of any existing control system. The consideration of control devices then leads to the re-evaluation of these risks, which are then called net risks, or residual risks.

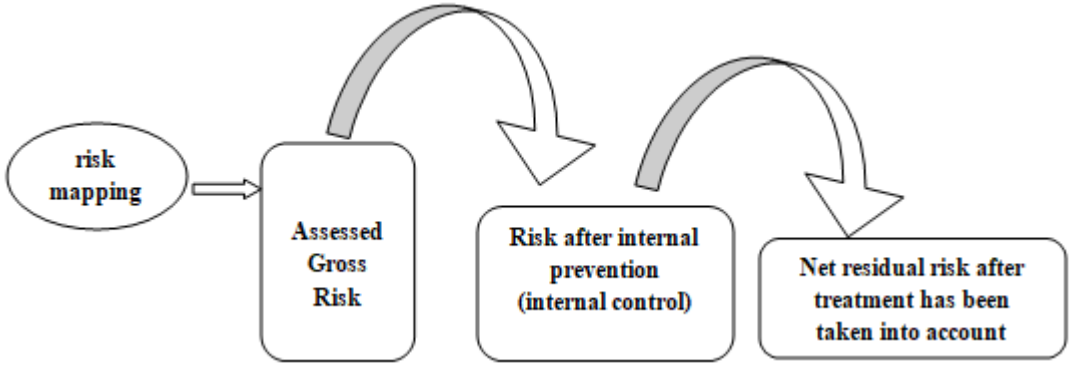


**Figure 2:** Residual Risks
Source: LAMARQUE E. "Bank Management", Ed. PEARSON, 2004, p.41.

The lines of analysis of the results obtained from the risk mapping lead in particular to the study, on a case-by-case basis, whether the residual risk remaining is acceptable or not.
The risk classification approaches implemented, allow to determine the priorities in order to improve the existing system through the development of action plans.

Also, the probability/gravity (or occurrence/impact) axes will allow to define the two axes of graphical representation with X-axis gravity and in Y-axis impact.

Another "couple of axes" used by the cartographers: the management quality/ importance couple in relation to the objectives. It brings a new approach to the bank's risk assessment.

**Selecting a scale :**
The most common classifications for this type of criteria are three (low, medium, high) and five (insignificant, low, medium, high, very high) scales.

However, some banks may choose other classifications, namely :

1) A classification that takes into account the intensity of the risk for the bank in question:

- Severe: total financial impact >5 M Dhs: the recovery of the bank is achieved and irrecoverable, the business process interrupted, the ability to pursue the business on a business line and uncertainty about fully recovering it and it is likely that the regulator will impose sanctions on it;
- Significant: 1.000.000 Dhs total financial impact 5M: damaged reputation, business process severely interrupted, it is possible that the regulator imposes sanctions on the bank;
- Moderate: 100.000 Dhs total financial impact 1.000.000 Dhs: impact on the reputation limited to a part of the bank, bankruptcy business process and possible sanction of regulator ;
- Minor: total financial impact 100.000 Dhs: this is a commercial impact, the business process inefficient or failing and the regulator did not consider it as material.

2) Level of probability

- Likely: regular occurrence may occur at any time;
- Possible: infrequent occurrence, may occur in the year or occur more than once during the 5 years but not frequently;
- Unlikely: rare occurrence, that is can happen once in the last 5 years;
- Limited: you would be surprised that this would happen, in other words is not possible in the last 5 years.

3) Priority Level

- Black: requires immediate action and the attention of the Executive/ Audit Committee. It must be treated as a priority until the level of risk is reduced. Regulator information must be considered ;
- Red: requires the responsibility of a member of the Executive/Audit Committee. High priority level and information is monitored at the level of the Executive Committee;
- Orange: entails the responsibility of a manager. Actions followed by management within the specified deadlines;
- Green: monitoring the risk in a consolidated report and possibly actions to reduce/eliminate the risk.

### 2.2.3 Representation Of Banking Operational Risk Mapping

There are several graphical modes:[11]

- The dual entry table is the most common way to represent risk mapping.

[11] COASSIN G. "Banking Risk Management", Financial Economy Review No 72, 2009, p.17.

**Table 4:** The graphical representation of the double-entry map :[12]

| *Seriousness* | *Risk damage to buildings* | *Competition risk* | *IT risk* |
|---|---|---|---|
| 1 | Maximum possible loss <100k€ | No new competitors: in the year | Loss of daily turnover < 10% |
| 2 | 100 k€<MPL<500 k€ | A new competitor on part of the business | 10%< Loss of daily turnover <50% |
| 3 | 500 k€<MPL<1M € | A new competitor on all activities but on a single country | 25 % < Loss of daily turnover <50 % |
| 4 | MPL>1M€ | A new competitor on the entire global business | Loss of daily turnover >50% |

- The two-axis diagram: it is a graph where the risk is represented by two previously chosen components. In a standard way, we choose& the probability/ impact couple.
- Radar or spider-web representation: the principle of this graph is to have an overview of the organization's exposure to risks according to its need.

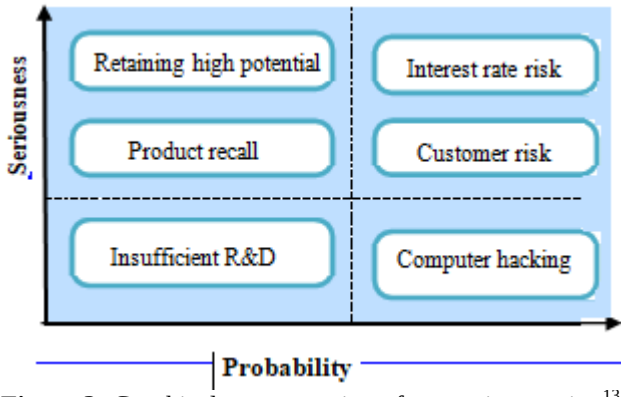


**Figure 3:** Graphical representation of two-axis mapping[13]

In any form, risk mapping, once completed, can be a decision support tool. This mapping enables the bank to decide on the actions to be taken to manage these risks: assume, avoid, reduce or transfer these risks.

We are then in a much richer risk management, where the bank is no longer limited to the vision of hedging risks with own funds[14].

We can therefore conclude that, more than the mapping itself, it is the very process of constructing risk mapping that is a fundamental element in building a global risk culture within banks. The same applies to the collection phase of losses and incidents.

## 3. Assessment of Risk Indicators

The mapping represents a basic support for the implementation of risk indicators, statistical type and often financial. They provide an overview of the bank's risk position and are reviewed periodically.

To define them, it can be said that risk indicators are measures used to monitor exposure to identified risks, taking into account the time factor.[15]

So any data element that can perform this function can be considered an indicator of risk.

A metric can be considered as a risk indicator when it can be used to measure:

- The quantum of exposure to a given risk, or to a set of risks;
- The effectiveness of all controls that have been implemented to reduce or mitigate risk exposure;
- The performance of our risk management.[16]

There are also three types of indicators :[17]

- Key risk indicators also referred to as exposure indicators;
- Key indicators of control effectiveness;
- Key performance indicators.

### 3.1 Key Risk Indicators

In the context of operational risk, a key risk indicator is a metric that provides information on the level of exposure to a specific operational risk at a given time[18]. In other words, a key risk indicator represents a rational and quantitative measure of a given risk at a given time. These indicators provide a series of "warning lights" that help to understand the bank's current risk and its future negative impact.[19]

**Table 5:** Example of Key Risk Indicators[20]

| *KRI* | *Corresponding operational risk* |
|---|---|
| Staff turnover | • Internal fraud<br>• Lack of staff<br>• Process errors |
| Frequency of data entry errors | • Process errors |
| Virus severity or system attacks | • Failure of information systems |

### 3.2 Key Indicators of Control Effectiveness

The key indicators of control effectiveness are parameters that allow to know whether a control carried out has

[12] Source: LAMARQUE E: "Bank Management" Ed PEARSON, 2004, P 45.
[13] Source: LAMARQUE E: "Bank Management" Ed PEARSON, 2004, P 48.
[14] MEPUIS O., BROCARD C. "Operational risk: the implementation of indicator tables", BANK Review No. 742, December 2011, p.87.
[15]
[16] Institute of Operational Risk Operational Risk Sound Practice Guidance: Key Risk Indicators, November 2010, p.15.
[17] DUMONTIER P., DUPRE D., MARTIN C. «Banking risk management and control», Paris, Revue Banque, 2008, p.294.
[18]
[19] Bayles F. «How to identify the appropriate Key Performance Indicators (KPI) for your company», Financial Economy, 12 July 2006, p.15.
[20] Source: This is a table produced by us after we spoke to the head of the Basel department of the Banking Supervision Department of the BAM.

achieved the expected objectives [21](in terms of loss prediction, reduction, etc.). By doing so, these indicators can be used in particular to measure the effectiveness of operational risk control at a given time.

In order to provide this information, the key effectiveness indicator must have an explicit relationship both with the control performed and with the specific risk for which the control was implemented.

**Table 6:** Example of a Key Control Effectiveness Indicator

| [22]Key efficiency indicator | Corresponding operational risk |
|---|---|
| Number of false client identity statements. | Gaps in the security control of client information. |
| Number of "user access rights" not reviewed for a specified period of time. | Weakness in security control of "user access". |
| Number of Continuity Plans not tested or updated during the specified review period. | Weaknesses in control continuity planning. |

## 4. Key Performance Indicators

Key performance indicators are measures that can be used to chart an entity's progress and weaknesses. It is therefore essential to select the right indicators to correct the current situation and plan for the future. To achieve this, communication between the different services is essential in order to choose the measures to be monitored and analyse the data to be integrated.[23]

In order to ensure proper evaluation, it is imperative that the responsible department identify the measures that really matter and rank them in order of importance. The use of inappropriate measures may provide incomplete or inappropriate representation of the bank. Worse still, choosing poor key performance indicators may give an unwarranted "feeling" of confidence in the correctness of the direction chosen by the entity.[24]

Taking an example of a bank in the United Kingdom that made a big mistake in its choice of indicators. The bank wanted to increase its turnover by offering a new type of account. The bank's senior managers then set targets for the number of new accounts that each branch had to sell. Branch Managers were advised that they would be judged on their ability to meet the sales objectives as defined. "Branch Managers were enthusiastic about getting these accounts adopted by new customers, as well as by their established customers, it seemed quite justified"[25]. However, in the enthusiasm to sell these new accounts, a key financial measure was lost: these new accounts generated less revenue than other products already established. This important information was not shared with branch managers who encouraged long-standing clients (whose accounts were more lucrative for the bank) transfer their accounts to this new less profitable product.

For a while, the sales figures seemed remarkable. There was only one problem: the bank was losing money because of these transfers from the old accounts to the new ones. "The company's performance has dropped significantly".[26]

In this case, the bank's senior managers should have asked themselves some fundamental questions, namely:

- What is the purpose of the current strategy and the new strategy?
- What does success mean?
- What measures should be used to assess this success?
- Could focusing on some key performance indicators have unintended consequences?

Instead of focusing on measuring "new accounts opened", the bank should have preferred "new accounts opened for new customers".

Whatever its nature (a key risk indicator, a key control effectiveness indicator or a key performance indicator), the risk indicator serves to highlight the evolution of a bank's exposure to risk. It makes it possible to anticipate the realization of a risk through the associated alert system. In other words, it can detect an abnormal situation before an incident occurs.[27]

In order to ensure the effectiveness of the risk indicators, the operational risk manager must ensure that [28]:

- The risk indicators actually and significantly reflect the exposure of the business lines concerned to risk;
- Risk indicators are based on reliable data;
- Indicators are understandable and relevant to those who operate them.

To conclude, it can be said that the identification of only internal losses is not enough to fully grasp the operational risks that threaten a bank[29]. Mapping, with all its components and all the stages of its construction, provides a complementary and prospective vision of the potential risks to which the organisation is exposed. Once completed, risk mapping provides "seamless" information, allowing for more timely and effective decisions for operational risk management.

[21]

[22] Source: This is a table produced by us after we spoke to the head of the Basel department of the Banking Supervision Department of the BAM.

[23] BAYLES F. «How to identify the appropriate Key Performance Indicators (KPI) for your company», Financial Economy, 12 July 2006, p.1.

[24] DUMONTIER P., DUPRE D., MARTIN C. «Banking risk management and control», Paris, Revue Banque, 2008, p.297.

[25] According to WALKER A. Chairman of Financial Services at the London office of Hitachi Consulting and performance management expert.

[26] According to WALKER A. Chairman of Financial Services at the London office of Hitachi Consulting and performance management expert.

[27] CHELLY D. "Operational Risk, What Answers to a Difficult to Apprehend Risk?", Optimind, April 2011, p.5.

[28] BAYLLES F. «How to identify the appropriate Key Performance Indicators (Kpis) for your company», Financial Economy, 12 July 2006, p.17.

[29] CHELLY D. "Operational Risk, What Answers to a Difficult to Apprehend Risk?", Optimind, April 2011, p.6.

At the end of this work, we were able to demonstrate the critical importance of operational risk management for financial institutions. The latter are required to identify the operational risks likely to affect their result but also their image and awareness by referring to the regulatory definition as well as the other definitions mentioned in the literature as they complement the Baloise definition by questioning its components. Second, the choice of the appropriate risk assessment method depends on the profile and objectives of each institution.

It can be said that the identification of only internal losses is not enough to fully grasp the operational risks that threaten a bank[30]. Mapping, with all its components and all the stages of its construction, provides a complementary and prospective vision of the potential risks to which the organisation is exposed. Once completed, risk mapping provides "seamless" information, allowing for more timely and effective decisions for operational risk management.

In addition, supervisory authorities are required to improve existing operational risk measurement approaches, see the development of new measurement approaches so that new variants of the financial and economic environment can be taken into account.

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