

DESIGNING A FRAMEWORK FOR RISK MANAGEMENT IN ACCOUNTING FIELD

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Abstract

Our goal in this article is to present a framework to guide managers in developing a coherent risk-management strategy. The research tries to highlight how an accounting services company faces the risk and manage it, by proposing a framework and applying the Failure Mode and Effects Analysis (FMEA) model for recording the transactions. In this research, customers are considered risky assets and managed for risk and return, consequently the methodology has roots in portfolio management theory, which incorporates the risk and return inherent in different assets.

Keywords: *framework, risk management, Failure Mode and Effects Analysis (FMEA), return, accounting transactions*

JEL classification:

1. Introduction

In nowadays, both researchers and businessmen focus on a new concept Risk Management (RM); all activities are regarded through this new lens. Risk management is more used in insurance and finance fields. Every enterprise has a particular tolerance for risk and strategy for managing it, although few enterprises have a global view of the risks that influence their economic condition.

The main categories of risk to consider are:

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- ✓ **Strategic:** a competitor coming on to the market;
 - ✓ **Compliance:** the introduction of new health and safety legislation;
 - ✓ **Financial:** non-payment by a customer or increased interest charges on a business loan
 - ✓ **Operational:** the breakdown or theft of key equipment.
- Other risks include:
- ✓ environmental risks, including natural disasters
 - ✓ employee risk management, such as maintaining sufficient staff numbers and cover, employee safety and up-to-date skills
 - ✓ political and economic instability in any foreign markets you export goods to
 - ✓ health and safety risks
- These categories are not rigid and some parts of your business may fall into more than one category.

Althaus (2005) considers risk as part of any science/domain, as follows:

Table 1: Risk in science

Domain	Perspectives on Risk	Solution
Engineering science, mathematics	Computable item	Computations
Physique, biology, medicine	Objective reality	Principles, computations
Law	Mistake	Rules, norms
Linguistic	Concept	Terminology, meanings
History, human sciences	Novels, stories	Narratives
Art (literature, music, poetry, theatre)	Emotion, feelings	Emotion
Religion	Faith	Revelation
Philosophy	Debatable phenomena	Wise
Audit	Computable item	Computations
Accounting	Prudence	Provisions, impairment

Source: Based on Althaus (2005), A Disciplinary Perspective on the Epistemological Status of Risk

Recent decades have witnessed a massive growth in academic studies of risk and the rapid development of a risk industry (Gabe, 2013). The

elements of risk-based approaches are various. At a minimum they entail the use of technical *risk-based tools*, emerging out of economics (cost-benefit approaches), and science (risk assessment techniques). Hood *et al.* (2001) refer to this as a move to a “cost benefit analysis culture” that is a move away from informal qualitatively based standard setting towards a more calculative and formalized approach. Integrated and more holistic approaches to regulating risks may be involved; this involves co-ordinate approaches to risk management which conceptualize risks as interrelated to each other and as having potential consequences for broader economic, natural, social and political environments.

The paper aims is to create a Failure Mode and Effects Analysis (FMEA) matrix for accounting transactions and to analyse the portfolio of customers of an accounting services’ company taking into account the risks the some transactions may occur.

2. Literature review

2.1. Risk and risk management framework

Risk research over the last three decades has been focused on the development of methods of and procedures for risk analysis and risk management. One of the main tasks of the risk community should be to emphasize the necessity of integrated risk assessment and the development of innovative risk management strategies that build upon the insights of the natural, technical and social sciences.

To develop a coherent risk-management strategy, companies must carefully articulate the nature of both their cash flows and their investment opportunities. Once they have done this, their efforts to align the supply of funds with the demand for funds will generate the right strategies for managing risk.

✓ **Companies may benefit from risk management even if they have no major investments in plant and equipment.** We define investment very broadly to include not just conventional investments such as capital expenditures but also investments in intangible assets such as a well-trained workforce, brand-name recognition, and market share.

✓ **Even companies with conservative capital structures - no debt, lots of cash - can benefit from hedging.** At first glance, it might appear that a company with a very conservative capital structure should be less interested in risk management. After all, such a company could adjust rather easily to a

large drop in cash flow by borrowing at relatively low cost. It wouldn't need to curtail investment, and corporate value would not suffer much. The basic objective of risk management - aligning the supply of internal funds with the demand for investment funding - has less urgency in this type of situation because managers can easily adjust to a supply shortfall by borrowing.

✓ **Multinational companies must recognize that foreign-exchange risk affects not only cash flows but also investment opportunities.**

✓ **Companies should pay close attention to the hedging strategies of their competitors.**

✓ **The choice of specific derivatives cannot simply be delegated to the financial specialists in the company.** Traditionally, integrated risk management is the domain of a firm's CEO and CFO, but the development of economies created a new position C in business entities: CRO – chief risk officer: *“executive accountable for enabling the efficient and effective governance of significant risks, and related opportunities, to a business and its various segments. Risks are commonly categorized as strategic, reputational, operational, financial, or compliance-related. CRO's are accountable to the Executive Committee and the Board for enabling the business to balance risk and reward. In more complex organizations, they are generally responsible for coordinating the organization's enterprise risk management approach”* (Wikipedia, dictionary)

The risk-taken attitude is influenced by the top management behaviour related to risk. A *sound* risk culture consistently supports appropriate risk awareness, behaviours and judgements about risk-taking within a strong risk governance framework. A sound risk culture sustains effective risk management, promotes sound risk-taking, and ensures that emerging risks or risk-taking activities beyond the organization's risk appetite are recognised, assessed, escalated and addressed in a timely manner.

A sound risk culture should emphasise throughout the entity the importance of ensuring that:

(i) an appropriate risk-reward balance consistent with the institution's risk appetite is achieved when taking on risks;

(ii) an effective system of controls commensurate with the scale and complexity of the financial institution is properly put in place;

(iii) the quality of risk models, data accuracy, capability of available tools to accurately measure risks, and justifications for risk taking can be challenged, and

(iv) all limit breaches, deviations from established policies, and operational incidents are thoroughly followed up with proportionate disciplinary actions when necessary.

Risk culture, as well as corporate culture, evolves over time in relation to the events that affect the entity's history (such as mergers and acquisitions) and to the external context within which the entity operates (FSB, 2014).

Within the risk management process, risk identification is considered by many authors as the most important element of the entire process; since once the risk is identified, it is possible to take measures for its management (Chapman & Ward, 2007; Cooper and Chapman, 1987; Courtot, 2001; Hertz and Thomas, 1983; Perry and Hayes, 1986; Scarff *et al.*, 1993; Wideman, 1992).

The Risk Management Framework includes consideration of legislation, policies, directives, regulations, standards, and organizational mission / business / operational requirements, facilitates the identification of security requirements.

2.2. Failure Mode and Effects Analysis

The FMEA model is used by car industry, engine systems (Xu *et al.*, 2002) aerospace industry (mid of 1960s, NASA; Flores and Malin, 2012), geothermal power plant (Feili *et al.*, 2013), pistachio plantation (Varzakas *et al.*, 2010), chemistry industry – pharma (Barends *et al.*, 2012; AL-Tahat *et al.*, 2013), wind turbines (Arabian-Hoseynabadi *et al.*, 2010), electronic paper display (Su *et al.*, 2014), sugar mill boiler (Mariajayaprakash and Senthilvelan, 2013), medicine (Monti *et al.*, 2005; Chiozza and Ponzetti, 2009).

Failure Mode and Effects Analysis (FMEA) is *“a systematic method of analyzing and ranking the risks associated with various product (or process) failure modes (both existing and potential), prioritizing them for remedial action, acting on the highest ranked items, re-evaluating those items and returning to the prioritization step in a continuous loop until marginal returns set in”* (Dailey, 2004). FMEA generates a living document that can be used to anticipate and prevent failures from occurring (the document have to be updated regularly). In FMEA analysis, risk of contamination and its presence at Hazardous Fraction in the final product, is expressed with the Risk

Priority Number (RPN) which is defined as $RPN=S \times O \times D$, S – Severity, O – Occurrence; D – Detection.

Severity is a rating corresponding to the seriousness of an effect of a potential failure mode (scale: 1-10, as follows 1: no effect on output, 5: moderate effect, 8: serious effect, 10: hazardous effect)

Occurrence is a rating corresponding to the rate at which a first level cause and its resultant failure mode will occur over the design life of the system, over the design life of the product, or before any additional process controls are applied (scale: 1-10, as follows, 1: failure unlikely, 5: occasional failure, 8: high of failures likely, 10: failures certain).

Detection is a rating corresponding to the likelihood that the detection methods or current controls will detect the potential failure mode before the product is released for production for design, or for process before it leaves the production facility (scale: 1-10, as follows 1: will detect failure, 5: might detect failure, 10: almost certain not to detect failures).

2.3. Customer portfolio analysis

With regard to a firm's customer relationship, a customer portfolio should enable strategizing, i.e. determining an appropriate relationship strategy for a given customer relationship, because the objective of portfolio approaches is to optimize customer relationship management efforts in order to maximize profitability (alternatively called firm performance or firm competitiveness). Customer profitability is defined as the contribution of a customer to a supplier's profits. Many firms focus on margin and volume in their calculations of customer profitability (Reinartz & Kumar, 2003) driven by accounting data from enterprise resource planning systems (e.g. SAP, Baan, Microsoft Dynamics). While calculations of various margins are extremely important, a customer has many more ways of contributing to a supplier's business success (Walter, Ritter and Gemünden, 2001).

The relationship value radar (Ritter & Walter, 2012) suggests eight areas of potential profit contributions:

- Payment: value is created through high margins and fast payments.
- Volume: value is created by higher volumes of a product (volume per product), larger width in purchased product portfolio, and longer-term contracts (volume over time).

- Quality: value is created by demanding the right products in relation to supplier's competencies (thus avoiding waste of high-value resources on low-value demands).
- Safeguard: value is created by short notice supplies of excess capacity or low quality products.
- Innovation: value is created by developing new products and new markets.
- Information: value is created by providing insights about the customer firm, customer market developments, and technological advances.
- Access: value is created through references to new customers, access to industry associations, and contact to important players in the political system, the technology arena, and the business system.
- Motivation: value is created by using the customer to motivate employees - either by public status of the customer or access to unique resources.

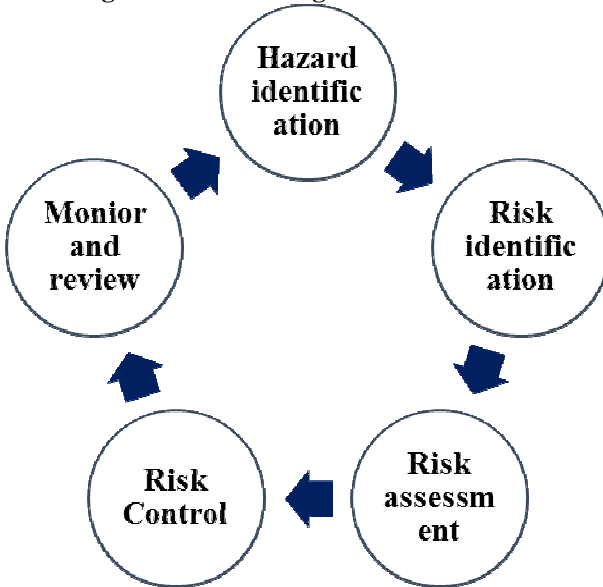
Based on this understanding of customer profitability, a customer is profitable when the customer contributes sufficiently in at least one value dimension and the overall contribution is larger than the incurred customer handling costs. Loyal customers are often, if not always, regarded as a firm's key asset and are seen as a major key success factor for suppliers' business performance: "The economic benefits of customer loyalty explain why one competitor is more profitable than another" (Reichheld, 1993).

3. Methodology

The emergence of relationship marketing with its emphasis on customer retention has sparked considerable interest in how these customer relationships can be managed more effectively since they are now regarded as one of the firm's primary assets (Gupta, Lehmann, & Stuart, 2004; Hunt, 1997; Kutner & Cripps, 1997; Srivastava, Shervani, & Fahey, 1998). Traditional accounting practices focus mainly on measuring tangible assets as a statutory requirement on the balance sheet. However, nowadays it is more usual for intangible assets such as brand, employee and customer relationships to be the critical and often dominant determinants of shareholder value (Amir & Lev, 1996).

The following activities related to managing organizational risk - ***Risk Management Framework*** - are paramount to an effective risk management:

Figure 1. Risk Management Framework



Source: Author's design

Step 1: Hazard identification

Hazard identification is the process of examining the accounting transactions for the purpose of identifying all the hazards related to bookkeeping.

Step 2: Risk identification

Once a hazard has been identified, the risk associated with that hazard must be examined. As a prelude to Risk Assessment, it is useful to identify factors that may be contributing to the risk.

Step 3: Risk assessment

It is then necessary to evaluate the likelihood of an injury occurring along with its probable consequences. Risk assessments are therefore based on 2 key factors:

✓ the likely severity or impact of any injury/illness resulting from the hazard and

✓ the probability or likelihood that the injury/illness will actually occur.

A simple risk matrix, which cross references likelihood and impact, enables risks to be assessed against these two factors and identified as one of the following: (1) a critical risk; (2) a high risk; (3) a moderate risk; (4) a low risk; (5) a very low risk.

Step 4: Risk control

Urgent action is required for risks assessed as critical or high risks. Documented control plans with responsibilities and completion dates may need to be developed for moderate risks. You will need to develop work procedures in relation to the new control measures, which may involve clearly defining responsibilities of management, supervisors and workers. If, like many businesses, you find there are quite a lot of improvements that you could make, big and small, don't try to do everything at once. Make a plan of action to deal with the most important things first.

Step 5: Documenting the process

Documenting the process will help ensure that identified control measures are implemented in the way that they were intended. It will also assist in managing other hazards and risks that may be in some way similar to ones already identified and dealt with.

Step 6: Monitor and review

Whichever method of controlling the hazard is determined, it is essential that an evaluation of its impact on the use of the equipment, substance, system or environment is carried out to ensure that the control does not contribute to the existing hazard or introduce a new hazard to the area. It is recommended that after a period of time the area supervisor carry out a review of the system or control to determine its suitability. Hazard identification and risk assessment and control are ongoing processes.

Monitor and assess selected security controls in the accounting on an ongoing basis including assessing security control effectiveness of accounting software, documenting changes to the system or environment of operation,

conducting security impact analyses of the associated changes, and reporting the security state of the system to appropriate officials of entity.

4. Results and discussions

The paper uses of Failure Mode and Effects Analysis (FMEA) model in order to create a hierarchy of riskiness transactions. The FMEA analysis is a grid where the accountants, using their professional judgment, assign a risk for a group of transactions. The transactions are classified as follow:

- Acquisitions of current assets and non-current assets;
- Sales of current assets and non-current assets;
- Bank account transactions in national currency and other currencies;
- Transactions with petty cash in national currency and other currencies;
- Closing transactions: accruals, depreciation of non-current assets, VAT, income tax computation.

For each group of transactions, the accountants assigned a risk coefficient for occurrence, detections and establish a severity is case something is going wrong. Based on their answers, I design the risk hierarchy:

Table 2. Consequence of failure mode

Consequence of failure mode with this severity	Severity
Client is suitable to pay significant fine to government authorities	10
Fail does no longer meet legal rules	9
Client ends up with misleading reports	8
Rejection of financial & fiscal reports	7
Long delay in preparing the financial & fiscal reports	6
Moderate delay in preparing the financial & fiscal reports	5
Short delay in preparing the financial & fiscal reports	4
Extra effort to produce financial & fiscal reports, no delay	3
Failure not noticed; little effect	2
Unnoticed; no relevant effect	1

Source: Author's design

Depending on number of transactions that the company has and their types, some problems may occur; the company participant for our research tries to create a balanced / optimal portfolio of customers and manage it not

only based on segmentation by industry, but on riskiness of transactions that can appear. This is important in establishing the revenue to be charged as fee for accounting services.

The paper developed is a start for a deep analysis of riskiness associated to recording the transactions in accounting. The limitations of papers consist in:

- (i) lack of benchmarking analysis of industries to reveal the changing environment in which the customers are developing their activity;
- (ii) lack of mathematical model for measuring the risk in a more quantitative manner and a model for shareholders creating value based on customers portfolio analysis;
- (iii) What are the manager's reaction about the model FMEA and framework?
- (iv) No immediate effects upon the strategy of our participant – company.

The paper is bringing a new approach in customer analysis, treating them as risky assets and creating a FMEA matrix for bookkeeping. Also, the paper emphasizes the necessity to develop a coherent risk-management strategy that will carefully articulate the nature of both their cash flows and their investment opportunities; the optimal portfolio may be achieved introducing a proper key account management.

Businesses that interpret maximizing performance as maximizing earnings or stock price will fall into the trap of being short-term oriented at the expense of long-term value creation. Our study complements the recent work of Storbacka (2012) who examines the required alignment of account management design elements and management practices, although he takes both inter-organizational and intra-organizational perspectives. Certainly, all risen questions will be part of future research papers.

5. Conclusions and recommendations

From a business point of view and conclusion from discussions with our participant – company, the management think that the risk and risk management should be part of their strategy, but the reluctance to apply it is justified bringing into discussions the volume of transactions that the accountants have to record in bookkeeping process and the pressure from local authorities for fiscal reports.

From a theoretical point of view, companies must consider both the risks and returns of their strategies. The considerations are best done

systematically. Those companies with good risk-return management systems and a culture of careful decision making will outperform less disciplined competitors (McKensey, 2008). Risk management does not mean always getting things right. It means getting them less wrong, less often, with less damaging consequences. Risk management is not an exercise to be undertaken once, or once a year. It is an attitude to problems and decisions. Psychology and behavioral economics have established that we have difficulty correctly incorporating risk into our thinking. So companies must put in place formal processes for risk-informed decision making. It requires commitment, discipline, and senior leadership willing and able to communicate why risk is a critical metric for decisions. It also inevitably requires a willingness to apply risk thinking in new areas.

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