Michela Sessi

RISK MANAGEMENT HT2018
Assignment 2

Word count: 1952

Risk management in healthcare

Introduction

This paper aims to present three alternative risk analytical methods. They all have pros and cons and depending on the specific case they may be suitable or completely unsuitable. Starting from qualitative approaches like PESTLE and SWOT analysis, the assignment continues with the explanation of the Bow-tie method, ending with a risk matrix evaluation.

The case study examined in the previous assignment analyzed risk management in healthcare. It is therefore recalled that the selection of processes and risks is inspired by the author who has worked as a volunteer in the general surgery department at San Raffaele Hospital in Milan. And the current management at that hospital. The case is also downsized to a fewer categories presenting a case study of a not-so-large size.

Qualitative approach, PESTLE & SWOT analysis

Risk workshops with brainstorming sessions are the most common of the risk assessment techniques. That's mean that people collect and share ideas to discuss the events that could impact the objectives, core processes or key dependencies. The main advantage of that technique is the interaction between different people that produces more ideas, in the opposite way issues will be missed if incorrect people are involved.

Workshops may be either qualitative or quantitative, depending on the level of analysis of the risk that is required. Common qualitative approaches are PESTLE and SWOT analysis that are now presented. It is worthwhile to know already that it is often suggested that the PESTLE risk classification system should be used in conjunction with an analysis of the strengths, weaknesses, opportunities and threats (SWOT) facing the organization. A SWOT analysis of each of the six PESTLE categories is recommended by the *Orange Book*. (Hopkins, 2017)

PESTLE is a acronym that stands for political, economic, sociological, technological, legal and ethical risks. In some case the E stands for environmental considerations too. It is useful know that PESTLE analysis is often applicable in the public sector in order to analyze external factors. Therefore it put its emphasis on hazard risks.

Category of risk	Description
Political	Tax policy, employment laws, environmental regulations, trade restrictions and reform, tariffs and political stability.
Economic	Economic growth/decline, interest rates, exchange rates and inflation rate, wage rates, minimum wage, working hours, unemployment (local and national), credit availability, cost of living, etc.
Sociological	Cultural norms and expectations, health consciousness, population growth rate, age distribution, career attitudes, emphasis on safety, global warming.
Technological	Technology changes that impact your products or services, new technologies, barriers to entry in given markets, financial decisions like outsourcing and supply chain.
Legal	Changes to legislation that may impact employment, access to materials, quotas, resources, imports/exports, taxation, etc.
Ethical or Environmental	Ethical and environmental aspects, although many of these factors will be economic or social in nature.

Table 1 – PESTLE classification system

Following the PESTLE well-established structure presented in the Table 1, starting from a downsized class of the healthcare, the Table 2 gives an example of the analysis in drugs category.

Category of risks	Description
Political	Violation of the laws on the use and prescription and distribution of different medicines for each country.
Economic	Violation of compliance with national and international price standards based on existing agreements.
Sociological	Risk of inefficiency in making the drug distribution system accessible to the entire population. Risk of errors in processing drug recipes.
Technological	Breakdowns and hacking in the online health system with the risk of illegal prescription of drugs and theft of health identities.
Legal	Changes to imports and exports. Changes in the legalization of certain drugs.
Ethical or Environmental	Excessive use of drugs. Management of pharmaceutical companies.

Table 2 – PESTLE classification system: application

PESTLE has the advantages to have a very simple framework and it is easy to understand. Generally it helps identify actions avoid or minimize impact of threats,

facilitates identification of business opportunities. In the other hand it is not so precise and could over-simplify the amount of data used for decisions, for a good work it requires different people being involved with different perspectives, access to quality external data sources can be time-consuming and costly. It is difficult to anticipate developments that may affect an organization in the future and it could bring the risk of capturing too much data that makes it difficult to see priorities.

In addition to PESTLE, SWOT analysis is useful to analyze risks. This type of study is aimed to understand the strengths, the weaknesses, the opportunities and the threats. It could be a support for the identification of the inputs necessary for creating the risk registers. Moreover it could be done as an additional analysis for every category of PESTLE.

This analysis seems a general method and it can't be used as the main system for the risk management in healthcare. It is necessary to focus on a quantitative and specify analysis that depends by the category.

BOW-TIE method (STOC, 4Ps, FIRM)

The bow-tie is another simple but well structured analysis. It exploits the association of risks to defined sources, investigates an event and processes its impacts. The representation is focus on the event.

According to Figure 1, on the left risks sources in bow-tie could follow STOC categories: Strategic, Tactical, Operational and Compliance risks. In order to identify risks and get right categories it is also useful classify risks as short, medium and long term risks. However depending on the problem, it is possible to use different category systems for classify risks.
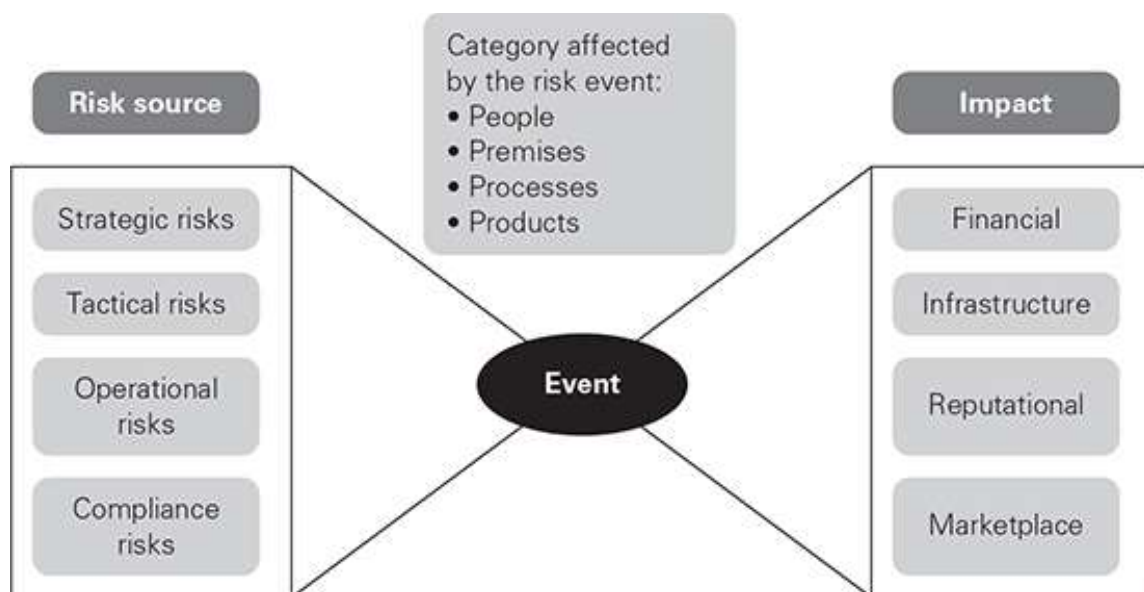

Figure 1 – Bow-tie representation of risk management

In the middle of the bow-tie is the risk event effect by the sources. The categories of disruption that can affect the organization consists of people, premises, processes and products (4Ps). Finally, in the right space the graphic shows the impacts of the event classified with FIRM risk scorecard. The FIRM risk scorecard provides such a structure, but there are many risk classification systems available. FIRM is an acronym that stands for the classification of risks as being primarily financial, infrastructure, reputational or marketplace in nature.

Financial	Infrastructure	Reputational	Marketplace
Risks that can impact the way in which money is managed and profitability is achieved.	Risks that will impact the level of efficiency and dysfunction within the core processes.	Risks that will impact desire of customers to deal or trade and level of customer retention.	Risks that will impact the level of customer trade or expenditure.

Table 3 – FIRM risk scorecard

An organization will choose the risk classification system that is most suited to its size, nature and complexity. For example, banks and other financial institutions almost universally classify risks as market, credit and operational risks. Other commonly used risk classification systems that can also be employed to provide structure to risk assessment workshops are the SWOT and PESTLE analysis. (Hopkins, 2017)

The Figure 2 shows an example of a possible analysis for the general event "Errors in the drug distribution system". On the left there are some possible risk source.

Figure 2 – Bow-tie representation of risk management: case example

In this context, impacts could be done following the FIRM risk scorecard as in the table 4.

Financial	Infrastructure	Reputational	Marketplace
Without many drugs, there could be started lawsuits	Some structure could be without provisions, some others could be full of them. It could be not space for supplying.	The Healthcare system obtains a high demage in his reputation not gaving availability of drugs.	If there is no provisions of certain drugs, people could not buy what they need.

Table 4 – FIRM risk scorecard: case example

This kind of analysis doesn't focus on the current actions taken to manage the risk. It seems a general method that can't be apply in a microscopic way. Thinking to our application, it is impossible analyze all the situations with a bow-tie representation. However, the advantage is to well generalize a risk problem event of a reasonable size.

Risk register and risk matrix evaluation

The purpose of the risk register is to form an agreed record of the significant risks that have been identified. Also, the risk register will serve as a record of the control activities that are currently undertaken. It will also be a record of the additional actions that are proposed to improve the control of the particular risk. (Hopkin, 2017).

In this case, starting from the previous assignment the likelihood of the risk could be quantitative, using statistical data of literature, or qualitative in a rating scale. Infact using past registered data and time analysis models, it is possible to understand the probability of the risk event. For example, administration errors in drugs could have a probability of 7% (that is quite high). In the same way it is possible to divide our scale in a qualitative range (remote, occasional, probable, frequent).
The same argument can be made for the estimation of the damage as impact. An example of the range is done in the Table 5.

Impact	Description
None	the error did not involve any damage or only necessitated a greater monitoring of the patient
Mild	the error caused temporary damage to the patient and required treatment or additional interventions, or has led to an extension of the hospital stay to above the average value
Medium	the error caused temporary damage to the patient (temporary disability) and has a beginning or extension of the hospitalization was necessary
Serious	the error caused permanent damage to the patient (permanent disability) or resulted in an event close to death (anaphylactic shock, cardiac arrest)
Death	Patient death

Table 5 – Demage classification

Priority significant risks facing an organization are those that have:

- high or very high impact in relation to the benchmark test for significance;
- high or very high likelihood of materializing at or above the benchmark level;
- high or very high scope for cost-effective improvement in control.

For hazard risks, the range of responses available is often described as the 4Ts, that can be sommarized as tolerate, treat, transfer, terminate. (Hopkin, 2017)

Starting from this point it is possible to place the estimates in a risk matrix to determine the degree of intervention priority on the individual error modes, but also on specific dangerous situations or on portions of the process. The possible risk assessment matrix is shown in Table 6, which highlights four areas of priority refer to the qualitative ranges of Phase 3.

	None	Mild	Medium	Serious	Death
Frequent	🟩	🟨	🟨	🟥	🟥
Probable	🟩	🟩	🟨	🟨	🟥
Occasional	🟦	🟩	🟩	🟨	🟥
Remote	🟦	🟦	🟩	🟩	🟨

Table 6 - Risk assessment matrix

Acceptable risk	Monitoring interventions
Low risk	Programming interventions
Medium risk	Urgency interventions
High risk	Emergency interventions

Starting from the category about drugs, the Table 7 gives an example of the risk assessment evaluation and the Figure 3 shows a scatter diagram.

1●	Prescription error risks	Remote	Serious	Programming interventions
2●	Preparation error risks	Remote	Death	Urgency interventions
3●	Transcription error risks	Occasional	Serious	Urgency interventions
4●	Distribution error risks	Remote	Mild	Monitoring interventions
5●	Administration error risks	Probable	Mild	Programming interventions
6●	Monitoring error risks	Remote	Mild	Monitoring interventions

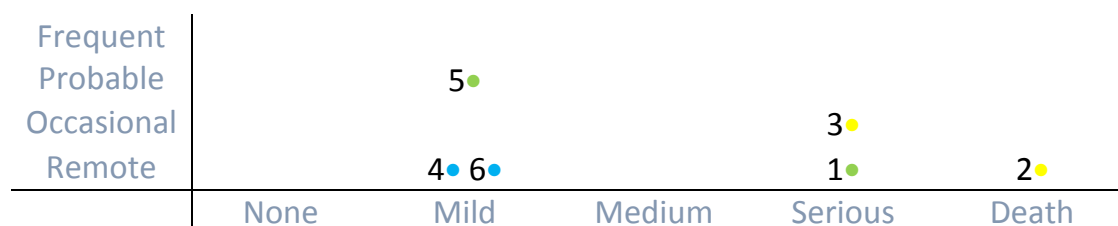Table 7 – Risk assessment matrix example

Figure 3 – Scatter diagram example

This method is helpful to provide a reaction for risks defined in advance. An advantage is to complete risk register with some historical data, in this way risks imput don't come only from a risk manager, instead it is a circle of improvements and there will be less probability of a wrong likelihood.

Conclusion

This paper has explained three different approaches for a risk classification and evaluation. It is not possible looking for a univocal method for all the cases because any approach has pros and cons. Any company, any case study must focus to his features and his variables to set his risk management.

Qualitative approaches as PESTLE and SWOT analysis, are useful for a starting global view but in the healthcare application they result too general. In the other hand the bow-tie method seems to be applicable to a specific event, if not it brings a macroscopic approach that is not manageable in healthcare.
It is necessary to focus on a quantitative and specify analysis that depends by the category. For that reason the risk register and the risk matrix evaluation result to be the better methods.

References
Hopkin P., 2017. *Fundamentals of risk management : understanding evaluating and implementing effective risk management*. Kogan Page.

Kohn L., 1999. *To err is human: building a safer health system*. National Academy Press.