

## Everyone's Smart University

### Project (Spring 2021)

|              |                |               |
|--------------|----------------|---------------|
| Student Name | عروة غازي رزاز | اسم الطالب    |
| Students I.D | 2021201775     | الرقم الجامعي |

Section

Master

Date

Thursday

18 / 03 / 2021.

Course Code

(PMG510)

## Project Risk Management

### Instructions:

- اخر موعد للتسليم هو يوم الخميس 2021-05-20 في تمام الساعة 9 مساءً.
- الإجابة متاحة باللغة الإنجليزية أو اللغة العربية مع مراعاة أن تكون المصطلحات العلمية باللغة الانجليزية.
- يتم تسليم المشروع في صيغة ملف . pdf مع الالتزام نموذج الجامعة ولن تقبل أي مستندات أخرى.
- يجب مراعاة أقسام البحث الرئيسية (مقدمة Introduction، دراسات علمية سابقة Literature Review، طريقة البحث Methodology، النتائج والمناقشة Results and Discussion، وأخيراً المراجع References . وان كان هناك ملحقات Appendices يتم إضافتها)
- يجب الالتزام بـ Theme موحد كما يلي:
- حجم الخط 12.
- نوع الخط Arial.
- لون الخط أسود.
- المسافة بين الأسطر 1.5 line spacing
- عدد صفحات البحث (لا يقل عن ثلاث صفحات ولا يزيد عن ست صفحات).

Instructor's Name: Eng. Mosaab M. Hamed

### Project:

**Risk Identification and Analysis (Based on the project you chose in APM)**

The objective of this report is to identify project risks, prepare a risk probability matrix, and carry out an analysis of selected risks. Referring to the project you select in **Advanced projects management APM course**, your task is to prepare a risk management plan that identifies potential risks in **each stage of the project** and identify risk management strategies.

From the course content and readings, you know that the overall purpose of risk planning is to anticipate possible risk events and be ready to take appropriate action when risk events occur—to eliminate or reduce negative impacts on the project.

You may wish to begin this exercise with a brainstorming about potential risks to get candidate risks “on the table” for consideration. And then identify and refine that wording for risks that have some realistic chance of occurring in this project. For example, potential weather problems present a real obstacle to completing field data collection by the planned completion date. It is also an issue that the project manager will ultimately have to plan for, as opposed to other issues such as a major disaster (e.g., your office burning down), is not a high-enough probability event that requires much time in planning. As described below, you will select several of the identified risks and carry out a risk analysis.

You will use the distilled list of risks to make a risk probability/impact matrix. The matrix will have at least three categories (high/medium/low) for probability and impact.

Remember that it is important to name risks effectively—use words that describe the risk event and point to the impact on the project (e.g., “injury of field technician disrupts data installation work”).

After completion of the risk matrix, document a risk analysis for the selected risks. This detailed documentation for that selected risk will include:

- a description of the risk and potential impacts (schedule, quality of work, cost, etc.) on the project.
- indicators or triggers that would be monitored to help identify the risk as early as possible.
- specific risk response strategies to take.

Using probability and impact matrix calculate the Expected Monetary Value (EMV) for all risks that have the impact in terms of cost \$\$.

Best of luck...

## المشروع:

التعرف على المخاطر وتحليلها (بحث مبني على مشروعك الذي اخترته في مادة ادارة المشاريع المتقدمة)

الغرض من هذا التقرير هو التعرف على المخاطر المحيطة بكل مرحلة من مراحل المشروع, تحضير مصفوفة احتمالية المخاطر ومن ثم القيام بالتحليل لهذه المخاطر المختارة. مهمتك هي تحضير خطة متكاملة لإدارة المخاطر تشمل التعريف بالمخاطر المحتملة التي تحيط بكل مرحلة من مراحل مشروعك (نفس المشروع الذي اخترته في مادة إدارة المشاريع المتقدمة **Advanced project management**). ومن ثم القيام بتحديد استراتيجيات إدارة المخاطر المناسبة لكل خطر على حدة.

من محتويات المقرر والمصادر الأخرى المتاحة أصبحت تعلم الآن أن الغرض العام لمرحلة التخطيط للمخاطر هي توقع أحداث المخاطر المحتملة والتجهز لاتخاذ ردة الفعل المناسبة عند وقوع الخطر – لمنع أو تقليل الآثار السلبية على المشروع.

قد تحبذ بداية هذا البحث بعصف ذهني عن ماهية المخاطر التي قد تحيط بكل مرحلة من مراحل مشروعك، وذلك للحصول على قائمة بتلك المخاطر. ومن ثم تحديد وتصفية هذه القائمة للوصول إلى قائمة مختصرة بالمخاطر التي لها فرصة واقعية أكبر في الحدوث. على سبيل المثال: المشاكل الجوية المتوقعة والتي تمثل عقبة حقيقية أمام اكتمال جمع البيانات من المواقع في أو قبل الوقت المحدد، هذه تعتبر مشكلة على مدير المشاريع أن يضعها في الحسبان. من ناحية أخرى، فإن المخاطر غير الواقعية مثل الكوارث الطبيعية والأعاصير (تلك التي تسبب حريقاً بمكتبك وفقدان الأوراق المهمة) ليست لها احتمالية وقوع عالية وبالتالي لاتستدعي تضییع الكثير من الوقت في التخطيط لها. كما سيتبين لك، ستقوم باختيار عدة مخاطر من تلك التي قمت بالتعرف عليها لتحليلها.

ستقوم باستخدام هذه القائمة المختصرة لعمل مصفوفة المخاطر (الاحتمالية/الأثر). المصفوفة ستحتوي على الأقل على ثلاث تصنيفات (عالي/متوسط/منخفض) للإحتمالية والأثر.

لاتنس استخدام أسماء تصف طبيعة المخاطر بصورة فعالة – قم باستخدام كلمات تصف الحادثة الخطرة وتشير الى أثرها على المشروع (مثل: إصابة أحد الفنيين في الموقع مما يؤثر على أعمال التركيب).

بعد انتهاءك من مصفوفة المخاطر، قم بتوثيق تحليلك للمخاطر المختارة. هذا التسجيل المفصل للمخاطر يجب أن يتضمن:

- وصف للخطر واثاره المحتملة (الجدولة، جودة العمل، التكلفة، الخ)
- المؤشرات والمحفزات التي يجب مراقبتها للمساعدة في التعرف على هذا الخطر قبل وقوعه
- تفصيل للاستجابة المقترحة للتصدي لهذا الخطر

باستخدام مصفوفة الاحتمالات والتأثير ، احسب القيمة النقدية المتوقعة (EMV) لجميع المخاطر التي لها تأثير من حيث التكلفة \$\$.

مع تمنياتي بالتوفيق..

## **Introduction:**

The method of recognizing, evaluating, managing risks to an organization's resources and profits is known as risk management. These challenges or hazards may arise from a range of causes, such as financial volatility, legal obligations, strategic management mistakes, incidents, and natural disasters. IT security vulnerabilities and data-related risks, as well as risk control techniques to reduce them, have risen to the top of the priority list for digitized enterprises. As a result, businesses' mechanisms for detecting and monitoring risks to their digital properties, such as confidential business records, a customer's personally identifiable information (PII), and intellectual property, are gradually being used in risk management programs. Any corporation and organization faces the possibility of unanticipated, damaging incidents that might cost them revenue or force them to close permanently. Risk assessment enables businesses to brace for the unexpected by reducing risks and additional expenses before they occur.

A company can save money and secure the prospects by adopting a risk management strategy and considering the multiple possible threats or incidents before they arise. This is because a solid risk control strategy would assist an organization in establishing policies to prevent future risks, mitigate their effect if they do exist, and deal with the consequences. Organizations will be more secure in their strategic choices if they can consider and manage risk. Furthermore, sound corporate governance practices that emphasize on risk control will assist an organization in achieving its objectives.

## **Literature review:**

The probability theory and decision-making under uncertainty are the foundations of risk assessment. The predicted utility principle, the theory of bounded rationality, and prospect theory, in particular, had a big impact. The concept of expected utility theory states that people make decisions dependent on the expected utility of various options. The theory of bounded rationality notes that in the physical world, multiple outcomes and their probabilities are difficult to comprehend. Prospect theory aids in simulating the impact of human experience on decision-making. (Misra, & Kumar, 2006).

The art and science of recognizing, assessing, and reacting to risk over the life of a project in the best interests of achieving project goals is known as project risk management (Schwalbe, 2006).

Since the beginning of time, risk assessment has been done informally by all, whether they are aware of it or not. Modern risk management, which came to prominence as a commonly recognized management function between 1955 and 1964 (Snider, 1991), has its origins in insurance, with which it has been closely connected for more than three decades. Risk assessment has not always been a happy tale, and research shows that it is currently unsuccessful at coping with unpredictable incidents. Project management was heavily chastised in the 1960s for failing to deliver projects due to technological complexity, contract strategy, citizen resistance, and project environmental impacts (Morris, 1997). A project manager can also contend that the last two are external project considerations that are outside their direct influence (Ibid), and it is generally believed that these would be moved up the chain to higher management levels (Chapman & Ward, 1997).

The main objectives of risk management include (Yee et al., 2001):

- To allow for more organized and less discretionary decision-making.
- By assessing threats and solution situations, a better view of the risks that a project faces can be gained.
- To assist in determining which threats demand immediate intervention and which can wait.
- To let managers aware that a project will have a variety of effects, and that reasonable action can be taken to mitigate any negative repercussions.

## Methodology:

This research follows the descriptive approach. We concern study risk management through collecting data from previous studies and literature. We will give further application risk management applied on a project in the discussion. **Result and Discussion:**

## Risk management strategy

The launch approach (ESU coffee shop) involved talking to stakeholders (interviewing) based on brainstorming, and discussion among the various employees to determine the maximum risks that should be taken into account when completing the project plan. All risks were identified and identified, and a countermeasure was identified for each risk. Staff will make every effort to ensure that steps are taken to mitigate risks, should they arise.

## Identifying risks:

*Abbreviation: (L: low; M: medium; H: high)*

| Description                                             | Risk |   |     | How to prevent and mitigate the risk                                                                                                                                                                                                                                                               |
|---------------------------------------------------------|------|---|-----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                         | P    | S | P*S |                                                                                                                                                                                                                                                                                                    |
| 1. Fire damage to property and life                     | 3    | 5 | 15  | Always ensure the proper working and positions of smoke alarms, fire extinguishers by conducting regular check and test. Staff training must be provided for cases of fire, including how to evacuate. Adequately cover the negative impact of fire to life and property by purchasing insurances. |
| 2. Suppliers amend their terms and conditions of supply | 2    | 3 | 6   | Establish and sustain the good relationship with long-term suppliers. Ensure proper plan B in case the suppliers change the terms and conditions.                                                                                                                                                  |
| 3. Hygiene of food is not ensure or food is poisoning   | 2    | 4 | 8   | Always utilize the most quality ingredients and ensure the hygiene                                                                                                                                                                                                                                 |

|                                                               |   |   |   |                                                                                                                                          |
|---------------------------------------------------------------|---|---|---|------------------------------------------------------------------------------------------------------------------------------------------|
|                                                               |   |   |   | of food preparation by providing training to staff. Manage the expiry date of the inventory in a timely manner.                          |
| 4. Suppliers do not fulfil their obligations of supplying     | 2 | 4 | 8 | Prepare a list of more than one supplier for more choices. In addition, substitute products should also be taken into account.           |
| 5. Disputes or agreements with the owner of the rented place. | 1 | 3 | 3 | Develop and maintain friendly relationship with the area owner by using the area properly, keeping it tidy, and paying the rent on time. |
| 6. Key staff resigns or takes maternity leave                 | 2 | 2 | 4 | Let experienced staff train other less-experienced one in terms of knowledge and skills.                                                 |

## Risk Matrix

| Risk probability       | Risk severity     |                |            |            |                 |
|------------------------|-------------------|----------------|------------|------------|-----------------|
|                        | Catastrophic<br>5 | Hazardous<br>4 | Major<br>3 | Minor<br>2 | Negligible<br>1 |
| Frequent -5            |                   |                |            |            |                 |
| Occasional-4           |                   |                |            |            |                 |
| Remote -3              | 15                |                |            |            |                 |
| Improbable-2           |                   | 8<br>8         | 6          | 4          |                 |
| Extremely improbable-1 |                   |                | 3          |            |                 |

EMV:

| No. risk | P   | I    | EMV  |
|----------|-----|------|------|
| 1        | 30% | 5000 | 1500 |
| 2        | 20% | 3000 | 600  |
| 3        | 20% | 4000 | 800  |
| 4        | 20% | 4000 | 800  |
| 5        | 10% | 3000 | 300  |
| 6        | 20% | 2000 | 400  |

Total EMV= 4400

## Record of the risk:

The project manager and project committee issued the continuity of event preparations and evaluating further, the basic review and recommendation for the prospect of setting the counter date. Opportunity and keeping an eye out. Time is one of the four key choices. At the right time, the better solution. Both threats will be communicated to the project manager, who will directly notify stakeholders.

## Risk and triggers:

| <b>risk</b>            | <b>source</b>                                          | <b>prevention</b>                            | <b>response</b>         | <b>impact</b>                          |
|------------------------|--------------------------------------------------------|----------------------------------------------|-------------------------|----------------------------------------|
| Fire                   | Unattended cooking                                     | supervision                                  | Fire alarm              | Smoke inhalation and death             |
| poisoning              | Unhygienic workplace                                   | hygienic terms and conditions                | Manage expiry dates     | Stomached or death                     |
| Insufficient materials | Suppliers do not fulfil their obligations of supplying | Make plan B or alternative list of suppliers | Use substitute products | It will stop working/ profit reduction |
| Disputes               | Land owner                                             | negotiations                                 | friendly relationship   | Loss of the store                      |
| Key staff resigns      | maternity leave                                        | training                                     | Train other key staff   | shortage                               |

**Risk contingency plan:**

| <b>Risk description</b>                                    | <b>Grade</b> | <b>Mitigation action</b>                                                                                                                              |
|------------------------------------------------------------|--------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| Fire damage to property and life                           | A            | After the fire damages, the shop must immediately rebuild and re-operate the business as quickly as possible whilst waiting for insurance payments.   |
| Suppliers amend their terms and conditions of supply       | C            | Opt for alternative suppliers or increase working capital via personal cash reserves.                                                                 |
| Hygiene of food is not ensured or food is poisoning        | B            | Promptly investigate on the grounds of the food poisoning. Support the affected customers as much as possible. Enable the complaint handling process. |
| Suppliers do not fulfil their obligations of supplying     | B            | Make purchases from alternative suppliers or opt for suitable substitute products.                                                                    |
| Disputes or agreements with the owner of the rented place. | D            | Hire lawyer for advice or lawsuit.                                                                                                                    |
| Key staff resigns or takes maternity leave                 | D            | Offer short-term contract for suitable replacement (until the permanent staff can do the job).                                                        |

A= Mitigation actions, to reduce the likelihood and seriousness, to be identified and implemented as soon as the project commences as a priority.

B= Mitigation actions, to reduce the likelihood and seriousness, to be identified and appropriate actions implemented during project execution.

C= Mitigation actions, to reduce the likelihood and seriousness, to be identified and costed for possible action if funds permit.

D= to be noted - no action is needed unless grading increases over time.

## Summary and recommendations:

Project risk analysis and management is an ongoing process that can begin at any stage of the project cycle and can last and continue until the costs of its use become more than its potential benefit that can be gained. The project progresses, the risks decrease and thus the effectiveness of using risk analysis and management tends to diminish so it is advisable to use it in the early stages of the project life cycle. There is no project that does not have risks, but all projects have risks, and analyzing these risks after identifying them and then managing them is an integral part of project management, and without that the project will be subject to failure.

---

## References:

1. Chapman, R. J., and Ward, S. (1997). "Project Risk Management Processes, Techniques and Insights" John Wiley & Sons, Chichester, UK.
2. Misra C. Subhas, Kumar Vinod, Kumar Uma (2006). Different Techniques for Risk Management in Software Engineering: A Review, ASAC, Banff, Alberta.
3. Schwalbe, K. (2006). "Information Technology Project Management." Thomson Course Technology, 425
4. Snider, H. W. (1991). "Risk Management: A Retrospective View." Risk Management April, 47-54
5. Yee, C. W., Chan, P., and Hu, G. (2001). Construction Insurance and Risk Management- A Practical Guide for Construction Professionals, The Singapore Contractors Association Ltd., Singapore.