



جامعة الجميع الذكية  
EVERYONE'S SMART UNIVERSITY

## Everyone's Smart University

### Project (Spring 2021)

|              |                                |                   |
|--------------|--------------------------------|-------------------|
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Section

Master

Date

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Course Code

(PMG510)

## Project Risk Management

### Instructions:

#### 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...**

**..قي فوت لابي تاي نمت عم**

## **PROJECT BRIEF INFORMATION AND DETAILS**

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This is a unique project with a mission to complete the vaccination of 4730 employees within 40 days and with limited resources. Due to the intention of the Ministry of Haj and Umrah, the Ministry of Health and the Ministry of Interior Affairs to protect the nation and to prevent the spread of Covid-19 within the pilgrims, the mentioned authorities have enforced all residents of Kingdom of Saudi Arabia to be vaccinated before they go for Umrah or Haj. This issue has been raised by the governmental officials and entities in our regular meetings. YTC realized that our services will be suspended until we obtain the vaccination for all of our employees. YTC's top management called for an emergency meeting and appointed me as a Project Director for this project. YTC has a total of 4730 employees located in 6 different main regions within Saudi Arabia namely:

1. Riyadh
2. Dammam
3. Jeddah

4. Makkah
5. Madinah
6. Asser

## **INTRODUCTION**

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Though vaccination is an important tool to help stop the pandemic, but the people are skeptical to take the Covid-19 vaccine. Throughout history, the vaccines for life-threatening diseases such as tetanus, polio, measles and meningitis took years or even decades to develop. In order to ensure the vaccine's safety and effectiveness, it undergoes through preclinical research, three phases of clinical trials, regulatory approval, manufacturing and circulation before it is released for public consumption. On the other hand, researchers across the globe have taken measures and sped up the process to develop the Covid-19 vaccine as people are dying in unprecedented speed. But on the public's point of view, the vaccines were developed way too fast and are skeptical with its safety and efficacy. For these reasons, the company-wide employee vaccination drive discussed in this paper needs to assess and manage the Covid-19 vaccine hesitancy of all YTC employees and other risk and uncertainty factors which may impact the project performance.

## **LITERATURE REVIEW**

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The concept of risk management dated back in the renaissance period when a French nobleman, Chevalier de Méré, turned to the famed mathematician, Blaise Pascal, to find a mathematical solution on how to divide the stakes in a certain game of dice as he constantly lost money in the game. Pascal sought the help of a fellow mathematician, Pierre de Fermat, and both efforts gave birth to the theory of probability (Bernstein, 1996).

Probability theory has evolved through time. It was initially considered as a branch of mathematics used in analyzing the random phenomena which can be performed repeatedly and in which the outcome is uncertain (Gut, 2005). Then various definitions for probability in the context of risk and uncertainty surfaced in the following years. The various interpretations led to confusion as they often come with their own assessments / evaluations for uncertainty based on their assumptions (Cheeseman, 1985). Therefore, it is vital to understand the limitations of assessing the risk and uncertainty in a project with the use of probability theory

as risk and uncertainty management entails a much thorough analysis than probability itself especially in a sensitive and unprecedented project such as the workforce Covid-19 vaccination plan discussed in this project.

## **PROJECT RISK BACKGROUND**

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Covid-19 remains a significant threat in most parts of the world including in the Kingdom of Saudi Arabia. The Covid-19 cases continues to surge despite the protocols and control measures in place. In this regard, the Ministry of Health has issued a mandate on the Covid-19 vaccination of all public transport workers in Saudi Arabia before the start of Shawwal 1, 1442 (13<sup>th</sup> May 2021). In the event of noncompliance, the worker is required to present a negative PCR test every seven days at the employer's expense (MOH, 2021).

Yaquot Transportation Corporation has initiated the company-wide vaccination drive for all its employees to comply with the issued mandate. Due to the time constraint, the project risks and issues need to be managed and monitored closely to ensure delivery of the project within the limited time given.

## **METHODOLOGY**

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As the project is unique and unprecedented, there were no previous records of risk events and issues relating to the project. The project team will perform brainstorming to assess the risks that could impact the project. And as the project progresses, the project team will perform the following risk management processes:

- Identify the risks and log in the risk register
- Evaluate and prioritize risks based on their overall effect on the project
- Develop risk control and mitigation plans
- Monitor risks and update information in risk register.

## **ROLES AND RESPONSIBILITIES**

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### **Committee President**

- Oversees the risk management process
- Facilitates risk discussions during meetings
- Provides supervision to monitor risks
- Assigns Risk Owner to each risk
- Communicates

### **Project Team Members**

- Helps identify project risks
- Helps develop risk response plans

### **Risk Owners**

- Ensures that Response and Mitigating Plans are implemented.
- Report completion of risk actions taken.

### **RISK CATEGORIES**

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The project will use the following categories of risks in this process:

- Schedule
- Scope
- Cost

### **PROJECT RISK IDENTIFICATION AND ASSESSMENT**

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The complexity of the project is medium thus the project team will use the below matrix to assess the project risks:

### RISK MATRIX

|             |              |                                                                        |              |            |
|-------------|--------------|------------------------------------------------------------------------|--------------|------------|
| PROBABILITY | High (0.9)   | MEDIUM                                                                 | HIGH         | HIGH       |
|             | Medium (0.6) | LOW                                                                    | MEDIUM       | HIGH       |
|             | Low (0.3)    | LOW                                                                    | LOW          | MEDIUM     |
|             |              | Low (0.3)                                                              | Medium (0.6) | High (0.9) |
|             | IMPACT       |                                                                        |              |            |
|             |              |                                                                        |              |            |
| Low Risk    |              | Shall be absorbed and monitored.                                       |              |            |
| Medium Risk |              | Shall be managed using specific monitoring and controlling procedures. |              |            |
| High Risk   |              | Risk is serious and must be addressed immediately.                     |              |            |

### PROBABILITY ASSESSMENT SCALE

|                         |                              |                            |                              |
|-------------------------|------------------------------|----------------------------|------------------------------|
| PROBABILITY             | LOW                          | MEDIUM                     | HIGH                         |
|                         | 0.3                          | 0.6                        | 0.9                          |
|                         | Unlikely to occur            | May occur                  | Most likely to occur         |
| IMPACT ASSESSMENT SCALE |                              |                            |                              |
| IMPACT                  | LOW                          | MEDIUM                     | HIGH                         |
|                         | 0.3                          | 0.6                        | 0.9                          |
| Schedule                | 1-2 days delay in schedule   | 3-5 days delay in schedule | >6 days change in schedule   |
| Scope                   | Unnoticeable change in scope | Important areas affected   | Unacceptable change in scope |
| Cost                    | <5% cost increase            | 6-10% cost increase        | >10% cost increase           |

| No. | Internal Risks                                                                           | Probability | Impact | Severity | Type   |
|-----|------------------------------------------------------------------------------------------|-------------|--------|----------|--------|
| 1   | The objective of vaccination drive may not be understood clearly due to language barrier | 0.9         | 0.9    | HIGH     | THREAT |
| 2   | No buy-in from project team members                                                      | 0.6         | 0.9    | HIGH     | THREAT |
| 3   | Workforce shortage due to employees falling ill (side effect of vaccine)                 | 0.9         | 0.9    | HIGH     | THREAT |
| 4   | Employee reluctance in taking the vaccine                                                | 0.3         | 0.9    | MEDIUM   | THREAT |
| 5   | Legal issues may arise                                                                   | 0.3         | 0.9    | MEDIUM   | THREAT |

|   |                                                     |     |     |      |        |
|---|-----------------------------------------------------|-----|-----|------|--------|
|   | (from those who strongly oppose getting vaccinated) |     |     |      |        |
| 6 | <100% vaccinated employees                          | 0.6 | 0.9 | HIGH | THREAT |
|   | <b>External Risks</b>                               |     |     |      |        |
| 7 | Unavailability of vaccine                           | 0.9 | 0.9 | HIGH | THREAT |

### EXPECTED MONETARY VALUE (EMV)

Expected Monetary Value is a statistical analysis that helps in quantifying the risks, calculate the contingency amount required for future scenarios that may or may not happen. Below shows the contingency value (EMV) needed for this project:

| Risk         | Probability | Impact Cost | EMV             |
|--------------|-------------|-------------|-----------------|
| 1            | 0.9         | 22000       | 19800           |
| 2            | 0.6         | 30000       | 18000           |
| 3            | 0.9         | 25000       | 22500           |
| 4            | 0.3         | 20000       | 6000            |
| 5            | 0.3         | 100000      | 30000           |
| 6            | 0.6         | 2000000     | 1200000         |
| 7            | 0.9         | 11352000    | 10216800        |
| <b>Total</b> |             | 13549000    | <b>11513100</b> |

EMV = Probability x Impact Cost

### RISK TRIGGERS AND CONTROLS

| RISKS                                                | TRIGGERS                                                                      | IMPACT                                          | MITIGATION                                    | RESPONSE                                                                |
|------------------------------------------------------|-------------------------------------------------------------------------------|-------------------------------------------------|-----------------------------------------------|-------------------------------------------------------------------------|
| The project objective will not be understood clearly | Miscommunication due to the different languages used by the diverse employees | Misinformed employee / poor project performance | Use the in-house translator for communication | Send messages using employee's native languages / conduct townhall talk |
| Missing buy-in from project                          | Misinformation / unclear roles                                                | Missing critical project                        | Assess buy-in status during                   | Conduct regular                                                         |

|                                                    |                                                                          |                                                        |                                            |                                                   |
|----------------------------------------------------|--------------------------------------------------------------------------|--------------------------------------------------------|--------------------------------------------|---------------------------------------------------|
| team members                                       | and responsibilities                                                     | milestones                                             | project planning workshops                 | meetings / update on project progress             |
| Workforce shortage due to post vaccination illness | Unavoidable side effects of vaccine                                      | Business operation disruption                          | Stagger employee vaccination schedule      | Stagger schedule and provide 2 days off from work |
| Reluctance to take the vaccine                     | Lacking information / misinformed / uncertainty about the vaccine        | Poor project performance                               | Establish support and information channels | Conduct education and awareness seminars          |
| Legal issues                                       | With existing comorbidities / cultural beliefs / uncertainty             | Monetary impact                                        | Establish guidelines on noncompliance      | Require exemption certification from MOH          |
| Unavailability of the vaccine                      | Government regulated / manufacturer dependent / Global supply and demand | Unsuccessful delivery of the project / Monetary impact |                                            | Coordinate with MOH                               |

## RESULTS AND DISCUSSIONS

As the company-wide employee Covid-19 vaccination project is the first of its kind, there were no relative data or records for the project related risks. The results and discussion are conducted through brainstorming to cover all the potential project related risks, assess, analyze, monitor, control and mitigate risks.

The risk management process shall integrate the use of risk register (Appendix 1) into the process to record the details of all risks that have been and will be identified throughout the project life. The project may be classified as moderate complexity, but the impact is of great magnitude.



## **BIBLIOGRAPHY and READING LIST**

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## APPENDIX

### Appendix 1 – Risk register

RISK REGISTER- YTC COVID-19 VACCINATION PROJECT

| S N | Type        | Risk                                                                                     | Probabil-ity        | Impact | Risk Classifica-tion | Proposed Mitigative Action                                                                                              | Post MitigationRisk Classification | Actions Taken                                                                       | Risk Owner      | Action Status | Remarks |
|-----|-------------|------------------------------------------------------------------------------------------|---------------------|--------|----------------------|-------------------------------------------------------------------------------------------------------------------------|------------------------------------|-------------------------------------------------------------------------------------|-----------------|---------------|---------|
| 0   | Threat      | <b>Entnal Risks</b>                                                                      |                     |        |                      |                                                                                                                         |                                    |                                                                                     |                 |               |         |
| 1   | Threat      | The objective of vaccination drive may not be understood clearly due to language barrier | High                | High   | High                 | Communication to be available in 7 different languages / Conduct awareness and eductaion workshops                      | MILD                               | Assigned a translator for 7 languages / Assign people to assist in the registration | HR              | Done          |         |
| 2   | Threat      | No buy-in from project team members                                                      | Medium              | High   | High                 | Conduct regular meetings and updates on project progress                                                                | MILD                               | Action Taken                                                                        | QHSE            | Ongoing       |         |
| 3   | Threat      | Workforce shortage due to employees falling ill (side effect of vaccine)                 | High                | High   | High                 | 1. Stagger employee vaccination appointment<br>2. Offer one day holiday after taking the vaccination                    | MILD                               | Action Taken                                                                        | Branch Managers | Ongoing       |         |
| 4   | Threat      | Employee reluctance in taking the vaccine                                                | Low                 | High   | Medium               | 1. Ensure close tracking of activities.<br>2. Escalate to management immediately upon seeing a lag in Planned vs actual | MILD                               | Action Taken                                                                        | Branch Managers | Ongoing       |         |
| 5   | Threat      | Legal issues may arise (from those who strongly oppose                                   | Low                 | High   | Medium               | Establish guidelines on noncompliance                                                                                   |                                    | Action Taken                                                                        | Legal           | Ongoing       |         |
| 6   | Threat      | <100% vaccinated employees                                                               | Medium              | High   | High                 |                                                                                                                         | MILD                               | Action Taken                                                                        | QHSE            | Ongoing       |         |
| 7   | Threat      | <b>External Risks</b>                                                                    |                     |        |                      |                                                                                                                         |                                    |                                                                                     |                 |               |         |
| 8   | Threat      | Unavailability of vaccine                                                                | Medium              | High   | High                 | Coordinate with MOH                                                                                                     |                                    | Action Taken                                                                        | Branch Managers | Ongoing       |         |
| 9   | OPPORTUNITY |                                                                                          | Low                 | High   | Medium               |                                                                                                                         |                                    |                                                                                     |                 |               |         |
| 10  |             |                                                                                          |                     |        |                      |                                                                                                                         |                                    |                                                                                     |                 |               |         |
| 11  |             |                                                                                          |                     |        |                      |                                                                                                                         |                                    |                                                                                     |                 |               |         |
| 12  | OPPORTUNITY |                                                                                          | Low                 | Low    | Mild                 |                                                                                                                         |                                    |                                                                                     |                 |               |         |
|     |             | PROBABILITY X IMPACT                                                                     | RISK CLASSIFICATION |        |                      | RISK TYPE                                                                                                               |                                    |                                                                                     |                 |               |         |
| 14  |             | HIGH X HIGH =                                                                            | EXTREME             |        |                      | OPPORTUNITY                                                                                                             |                                    |                                                                                     |                 |               |         |
|     |             | HIGH X LOW =                                                                             | MEDIUM              |        |                      |                                                                                                                         |                                    |                                                                                     |                 |               |         |
|     |             | LOW X HIGH =                                                                             | MEDIUM              |        |                      | THREAT                                                                                                                  |                                    |                                                                                     |                 |               |         |
|     |             | LOW X LOW =                                                                              | MILD                |        |                      |                                                                                                                         |                                    |                                                                                     |                 |               |         |