



جامعة الجميع الذكية
EVERYONE'S SMART UNIVERSITY

Everyone's Smart University

Project (Spring 2021)

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Section

Master

Date

Thursday

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Course Code

(PMG510)

Project Risk Management

Instructions:

- اخر موعد للتسليم هو يوم السبت 2021-05-08 في تمام الساعة ٩ 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 line spacing 1.5
- 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 **the selected 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 stage. 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 بالمرحلة التي تختارها المرحلة من مراحل مشروعك (نفس المرحلة التي اخترت التطرق لها في مشروعك لمادة إدارة المشاريع المتقدمة Advanced project management) حيث أن مهمتك هي تحضير خطة متكاملة لإدارة المخاطر تشمل التعريف بالمخاطر المحتملة التي تحيط بتلك المرحلة وتحضير مصفوفة احتمالية المخاطر ومن ثم القيام بالتحليل لهذه المخاطر المختارة وتحديد استراتيجيات ادارة المخاطر المناسبة لكل خطر على حدة.

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

قد تحبذ بداية هذا البحث بعصف ذهني عن ماهية المخاطر التي قد تحيط بتلك المرحلة 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 تضيق 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:

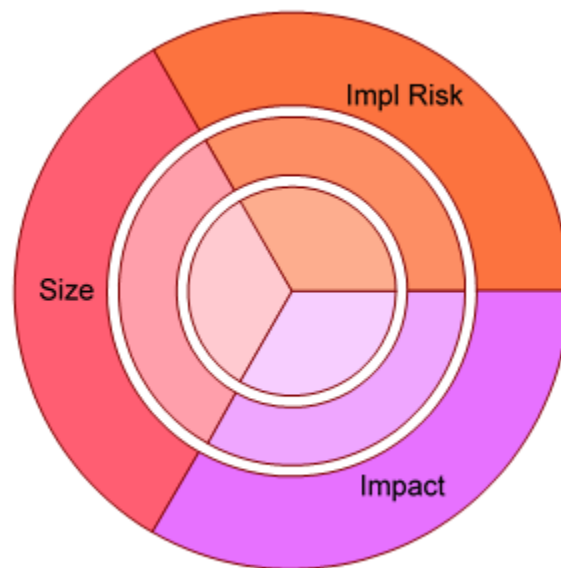
- وصف للخطر واثاره المحتملة (الجدولة، جودة العمل، التكلفة، الخ)
- المؤشرات والمحفزات التي يجب مراقبتها للمساعدة في التعرف على هذا الخطر قبل وقوعه
- تفصيل للاستجابة المقترحة للتصدي لهذا الخطر

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

مع تمنياتي بالتوفيق..

Risk Identification and Analysis

The viability of the software development effort derives from a combination of three feasibility aspects and associated mitigation activities. Acceptance of this project plan constitutes recognition that these three aspects have been appropriately mitigated to a level acceptable to the heights management



This chapter assesses project size, implementation risks, and operational impact associated with program development efforts, and includes a list of critical success factors

The size of the project

Project size is defined as the level of effort associated with the development and / or maintenance of the program. Larger software development efforts are subject to increased risk of failure due to changes in requirements that are driven by changes in the regulatory environment. Larger projects are more complex, which makes

maintenance more difficult. Project size is estimated by evaluating six factors of project size. Full definitions of each of the project size factors are included in the table below, the estimated ranges for each size factor highlighted.

Project Size Factors			
	Small	Medium	Large
Number of Operational Data Areas	1-8	9-15	16+
Number of Support Data Areas	0-10	16-30	31+
Number of External Interfaces	0-2	3-5	6+
Number of Simultaneous Users	1-10	11-40	41+
Initial Data Load (kR = Thousand Records)	0-10kR	10-50kR	>50kR
Operational Transaction Load (kTpd = Thousand Transactions Per Day)	<0.5kTpd	0.5-3kTpd	>3kTpd

Based on the calculated values for each project size factor, this project is estimated as a small scale development effort.

PROJECT SIZE MITIGATION

Mitigation of project risks associated with the size factors highlighted above include:

1. Segregation of the application into functional components with development of each component addressed through a separate SDLC.
2. Development in compliance with a formally defined architecture to enable consistent, high-reliability information exchange between this application and external systems.
3. Customization of the network infrastructure, bandwidth, and storage mechanisms to support the anticipated number of users.
4. Sizing of the application server and database engine appropriate to the anticipated data volumes.

5. Sizing of the network infrastructure, application server, and database engine appropriate to the anticipated transaction volumes.

Implementation risks:

Implementation risk is defined as the group of risks that may prevent the successful development and deployment of a program. The higher the level of risk, the greater the chance that the project will fail unless identified risk factors are mitigated.

Implementation risk is estimated by choosing the most appropriate attributes for each of the six risk factors. In the table below, the specific features of each risk factor are highlighted.

Implementation Risk Factors			
	Low Risk	Medium Risk	High Risk
Implementation Technology	Well known	Some new	Cutting edge
External Interface Complexity	All simple	Minority complex	Majority complex
Developer Skills / Resources	Readily available	Some contention	Need to be acquired
Customer Resources	>1 SME per UC available	1 SME per UC available	Outside SME(s) used
(UC = Use Case)			
Business Process Maturity	Standard, stable	Non-standard, stable	Automating new/unusual process(es)
Business Process Complexity	All simple	Minority complex	Majority complex

Based on the characteristics chosen for each project risk factor, this project is estimated as a moderate risk development effort

IMPLEMENTATION RISK MITIGATION

Mitigation of the implementation risks highlighted above include:

1. Contention for developer resources will be controlled by extending the project schedule where appropriate, or suspending the project until the necessary talent is available. Certain segments of the project will be timed to coincide with the availability of specific developers. The Orders Component and Product Component tasks and associated subtasks defined in the project schedule address this mitigation effort.
2. Contention for Subject Matter Expert (SME) availability will be controlled by extending the project schedule where appropriate, or suspending the project until the necessary talent is available. Certain segments of the project will be timed to coincide with the availability of specific SMEs. The Orders Component and Product Component task and associated subtasks defined in the project schedule address this mitigation effort.
3. Business processes impose risks of error commensurate with their complexity. To mitigate risks associated with complexity, processes will be simplified where possible. Processes that are still considered to be complex will be subjected to scenario analysis resulting in a set of test scripts and known results in terms of application outputs and internal data. These regression tests will be validated by hand and then automatically run each time the associated components are modified. The Orders Component task and associated subtasks defined in the project schedule address this mitigation effort.

Operational effect

Operational effect is defined as the effect on the worst-case organization of a program's failure during production. The failure of high-impact applications can cause significant damage to the organization.

Failure scenarios

The worst cases of this application failures consist of the following failures and consequences:

Failure Scenarios	
Failure	Result

Incomplete features.	Slowdown in operations.
Errors in calculations or reports.	Lost sales, lower customer confidence. Additional costs associated with recovery.
Errors during data migration.	Incomplete history, errors in operations.
Access by unauthorized personnel	Releasing the customer's name and address information, but without disclosing the customer's credit record or credit card information, as this is not kept in the medical records system.

Operational impact factors

The operational impact is estimated by selecting the most appropriate features for each of the six factors. In the table below, the specific attributes of each influence factor are highlighted.

Project Impact Factors

Category	Low Impact	Medium Impact	High Impact
Security	Release of non-sensitive information.	Release of proprietary or high intellectual property information.	Release of trade secrets, customer/employee/vendor data, or strategic planning

			information.
Operations	Continued operations with minor adaptations.	Restricted operations using manual, paper-based, or alternative business processes.	Cessation of operations with subsequent restart effort.
Finance	Recovery costs do not significantly alter the budget of the operating business unit.	Recovery costs result in significant alteration of the budget of the operating business unit.	Recovery costs result in significant alteration of the budget of the <i>parent</i> business unit.
Liability	Zero, minimal, or acceptable liability is incurred.	Significant liability resolved by settlement.	Extensive liability resolved by mediation or court action.
Public Image	Zero, temporary, or acceptable degradation of public image.	Significant degradation of local or regional public image.	Significant degradation of national public image.
Competitive Edge	Zero to minimal negative impact on	Significant, but temporary negative	Substantial loss of competitive edge.

	competitive edge.	impact.	
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Based on the attributes selected for each project impact factor, this project is estimated to have a Medium impact on the organization in the event of a worst-case failure.

PROJECT IMPACT MITIGATION

The mitigation of project risks associated with the above mentioned impact factors includes:

- Access control mechanisms will be created to restrict the use of the application to authorized users.
- The application will encrypt the data transferred between the database server / application and the client system.
- Physical access controls for the database server will be created to prevent the unauthorized retrieval, copying, or destruction of operational data.
- Database services and applications will be provided by bug-compliant, clustered or redundant servers and file storage mechanisms.
- Database backups will be made daily and moved off-site periodically in accordance with the organization's disaster recovery requirements.
- The application will be developed using a design control methodology, whereby coding is implemented after and in strict compliance with the application design.
- The application will be tested and put into production via separate and similarly configured database and application servers.
- The application will be tested for functional accuracy, data integrity, data capacity, and transaction load capacity.
- Changes to application requirements and design elements will only be implemented after verification and validation of each change and subsequent approval of the Project Configuration Control Board (CCB).

- The development will be carried out in a way that enables the appropriate retrieval of source elements to enable re-creation of any prior version of the application.