



جامعة الجميع الذكية
EVERYONE'S SMART UNIVERSITY

Everyone's Smart University

Project (Spring 2021)

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Section

Course

Code

Thursday

Master

Date

18 / 03 / 2021.

(PMG506)

Advanced project 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. Amaal Aburumman~~ **Eng. Dr. Akram M. S. Ali**

Project:

You are required to document your role in administering a project. The project may be set in a business, social, sporting, or family environment but must be of a significant size and scale. If you do not have an actual project to write about you may complete the project hypothetically.

This report will be between three to six pages in length. This is a significant research project.

Your report must address ~~each~~ **ONE** of the following issues:

1. Identify and describe the purpose, scope, and objectives of the project. **Display this information using an appropriate tool.**
2. Describe how the team is given an outline of the project.
3. Describe the strategies that are going to be set up to maintain communication with the team members.
4. Describe the tools that are going to be used to monitor the goals, time frames or milestones.
5. Identify project milestones and activities. **Display this information using an appropriate tool.**
6. Create a budget and link the costs to the key milestones for a project.
7. Describe how you are going to divide tasks and resources amongst a project team. **Display this information using an appropriate tool.**
8. Briefly describe how the progress will be monitored.
9. How are current project records maintained? Who has responsibility for this? provide some recommendations on how this process could be improved.
10. Describe the current procedure for finalizing projects. Create your own procedure and identify how you will evaluate the success of the project.
11. Legislation that may affect the project including health and safety, and anti-discrimination legislation.

Best of luck...

المشروع:

مطلوب منك توثيق دورك في إدارة مشروع. قد يتم تعيين المشروع في بيئة تجارية أو اجتماعية أو رياضية أو عائلية ولكن يجب أن يكون بحجم مناسب. إذا لم يكن لديك مشروع فعلي لتكتب عنه ، فيمكنك إكمال المشروع افتراضياً. ستكون هذا التقرير من ثلاث إلى ست صفحات.

يجب أن يعالج تقريرك ~~كل~~ **احد** القضايا التالية:

1. تحديد ووصف الغرض والنطاق والأهداف من المشروع. اعرض هذه المعلومات باستخدام أداة مناسبة.
2. صف كيف يتم إعطاء الفريق مخططاً تفصيلياً للمشروع.
3. وصف الاستراتيجيات التي سيتم وضعها للحفاظ على التواصل مع أعضاء الفريق.
4. صف الأدوات التي سيتم استخدامها لرصد الأهداف أو الأطر الزمنية أو المعالم.
5. تحديد معالم المشروع والأنشطة. اعرض هذه المعلومات باستخدام أداة مناسبة.
6. إنشاء موازنة وربط التكاليف بالمعالم الرئيسية للمشروع.
7. صف كيف ستقوم بتقسيم المهام والموارد بين فريق المشروع. اعرض هذه المعلومات باستخدام أداة مناسبة.
8. صف بإيجاز كيف سيتم رصد التقدم.
9. كيف يتم الاحتفاظ بسجلات المشروع الحالية؟ من المسؤول عن هذا؟ تقديم بعض التوصيات حول كيفية تحسين هذه العملية.
10. وصف الإجراء الحالي لإنهاء المشاريع. قم بإنشاء الإجراء الخاص بك وحدد كيفية تقييم نجاح المشروع.
11. التشريعات التي قد تؤثر على المشروع بما في ذلك الصحة والسلامة ، وتشريعات مكافحة التمييز.

مع تمنياتي بالتوفيق..

Improve Wrapping and Twisting Productivity

1. Introduction:

Since I'm working in a unique industry, it is necessary to mention a brief about it.

- 1.1. Background: Artificial turf is a surfacing material used to imitate grass. It is generally used in areas where grass cannot grow, or in areas where grass maintenance is impossible or undesired. Artificial turf is used mainly in sports stadiums and arenas, but can also be found on playgrounds and in other spaces.

Artificial turf has been manufactured since the early 1960s and was originally produced by Chemstrand Company (later renamed Monsanto Textiles Company). It is produced using manufacturing processes similar to those used in the carpet industry. Since the 1960s, the product has been improved through new designs and better materials. The newest synthetic turf products have been chemically treated to be resistant to ultraviolet rays, and the materials have been improved to be more wear-resistant, less abrasive, and, for some applications, more similar to natural grass.

1.2. The Manufacturing process:

- 1.2.1. The first step is to blend the proprietary ingredients in a hopper. Dyes and chemicals are added to give the turf its traditional green color and to protect it from the ultraviolet rays from the sun.
- 1.2.2. After the batch has been thoroughly blended, it is fed into a large steel mixer. The batch is automatically mixed until it has a thick, taffy-like consistency.
- 1.2.3. The thickened liquid is then fed into an extruder, and exits in a long, thin strand of material.
- 1.2.4. The strands are placed on a carding machine and spun into a loose rope. The loose ropes are pulled, straightened, and woven into yarn. The nylon yarn is then wound onto large spools.
- 1.2.5. After the extrusion process, the yarns are twisted or wrapped to provide a better performance in the tufting process, which is the next step.
- 1.2.6. Next, the yarn is taken to a tufting machine. The yarn is put on a bar with skewers (a reel) behind the tufting machine. It is then fed through a tube leading to the tufting needle. The needle pierces the primary backing of the turf and pushes the yarn into the loop. A looper, or flat hook, seizes and releases the loop of nylon while the needle pulls back up; the backing is shifted forward and the needle once more pierces the backing further on. This process is carried out by several hundred needles, and several hundred rows of stitches are carried out per minute. The nylon yarn is now a carpet of artificial turf.
- 1.2.7. The artificial turf carpet is now rolled under a dispenser that spreads a coating of latex onto the underside of the turf. At the same time, a strong secondary backing

is also coated with latex. Both of these are then rolled onto a marriage roller, which forms them into a sandwich and seals them together.

1.2.8. The artificial turf is then placed under heat lamps to cure the latex.

1.2.9. The turf is fed through a machine that clips off any tufts that rise above its uniform surface.

1.2.10. Then the turf is rolled into large v/lengths and packaged. The rolls are then shipped to the wholesaler.

As shown in the manufacturing process, wrapping and twisting are one of the major processes, it needs to be improved due to the increment of order lately and shortage of manpower because Covid-19.

2. Literature Review:

In the published academic articles, there was found a number of different suggestions for the increase of productivity for the industrial sector.

2.1. the collection of production data

More specifically, the monitoring of the production times of parts was implemented and the data from the relevant times were registered in a database. The purpose of collection of these data was to find whether several changes in the design of production system or in the methods and the technological equipment, will have a positive influence to the reduction of the cycle times of the products, or the family products that the industrial plant was producing. The ultimate goal was to determine which structures of the production system were the most influential inside the system, therefore the changes of the system will be focused in these area exclusively. The changes that were made inside the system were concerning the modification of the working methods (more specifically the set up times) and the change of the number of operations for the manufacturing process. The final results after two years of data sampling from the industrial plant showed that the total production or manufacturing time was reduced considerably by applying these changes.

2.2. simulation methodology for improving the FMS:

More specifically, the transportation system of the materials inside the system was found deficient and was in need of optimization in order to increase the overall availability of the system. The transportation of raw materials inside the system was executed by using trailers. In the simulation model, they were tested different alternative paths in order to minimize the waiting time of materials along with the number of pieces in the queue. In the current paper it was highlighted that the use of simulation has become available due to the evolution and the availability of strong processors with very large RAM capacity which are able to support the

execution of several number of different alternatives for the design of the system. Before the execution of a simulation method, it is important several conditions to be met. These conditions are the followings:

1. Understanding of the system.
2. Determine the level of the simulation.
3. Gather the necessary data for the execution of the simulation.
4. Construction of the base model.
5. Appropriate method for analyzing the results.

In the conclusion of the current research work, it was clearly mentioned that the use of the simulation method as a tool for improvement of production systems, has been proved beneficial for providing very efficient solutions in a relatively small amount of time.

3. Methodology:

One of the best methods to describe the purpose, scope, and objectives of the project is project charter is mentioned below:

Project Title: Improve Wrapping and Twisting Productivity	
Project Start Date: 1-Dec-2020	Project End Date: 31-Jan-2021
Key Schedule Milestone: • Creation of Wrapping & Productivity Board • Production Lay-outing • Provide Material Handler Function • New Winder Machines and Splicers	
Budget Information: Eur 39,000 for Machines SAR 7,500 for Operators	
Project Manager: Eng. Thamer AlJohar, Email: thamer.j@greenvision.com.sa	
Project Objective: • To improve productivity in wrapping and twisting • Maximize material handler functions in phase 1 • Time study to run wrapping 28 positions with 2 operators	
Main Project Success Criteria: • Improve productivity from 90% to 95%. • Train 10 line operators to be reliable to work in Wrapping and Twisting. • Successful implementation of Material Handler Function. • Successfully run all Wrapping positions with 2 operators	
Risks: • Travel restrictions • Lockdown because pandemic of Covid 19	

4. Results and Discussion:

4.1. Results:

- 4.1.1. Productivity: increased significantly but not sustainable due to lack of Manpower (Covid 19 infections, the day off of the operators, and low output of backup operators).
- 4.1.2. Training of line operators for Wrapping and Twisting: Below expectation due to (most of them need more time for training especially on splicing and their presence can not be guaranteed because some times production lines have a breakage which needs a restart, start-up of the line take a long time which will affect training time).
- 4.1.3. Material Handler Function: Effective but lack of Manpower on day-offs decrease the productions.
- 4.1.4. Run all Wrapping positions with 2 operators: Effective while running production but while rewinding it should run by 3 operators.
- 4.1.5. Winder Machines will be late because of the lockdown in Germany.

4.2. Discussion:

As shown in the results, the Covid 19 situation is the main reason for not succeed in this project. Moreover, some operators resign and go back to be with their families through these tuff times. Here is some recommendation:

- 4.2.1. Recommend for vaccination of all operators to minimize the infections.
- 4.2.2. Increase the time of training for line operators.
- 4.2.3. Reschedule all annual leaves because new operators will be late because of travel restrictions.

5. References:

- [How artificial turf is made - material, ingredients of, manufacture, making, history, used, components, composition \(madehow.com\)](https://www.madehow.com/entry/10000.php?term=artificial%20turf)
- <https://www.greenvision.com.sa/en/artificial-grass/how-artificial-grass-made>
- <https://publications.lib.chalmers.se/records/fulltext/251783/251783.pdf>