Business Simulation for SPACE

Frances Fahey, Ignas Utyra, Mark McKeon,
Eoin Bridgeman, Gary Maguire, Kyle O'Neill

Introduction to PACE

- Firstly, what is PACE?

- PACE stands for '*Prevention-Accommodation-Community Enterprise*'

- PACE was established in 1969 and works in partnership with agencies such as the Probation and Welfare Service, FAS and the VEC to create high quality settlement services for offenders.

PACE's mission statement and focus

- PACE is a voluntary sector organization that works with people with convictions for a wide range of criminal offences.

- They provide a variety of services to address offenders needs and support their safe integration back into the community

PACE's Goals

- PACE aims to increase their current sales to achieve a total revenue of €250,000 by the end of 2023 in their woodwork/metalwork section.

- They also hope to grow their powder-coating booth within the year 2023, this is a new system that PACE have put in place to improve the final quality of their products.

- Their financial goal for the powder coating booth is to reach up to €100,000 worth of sales from this new operation

- Ultimately PACE are looking to improve revenue and continue to develop their business which will allow for expansion within the organization.

Our Goal

- An Extend Sim business simulation can be a valuable tool for an organization.

- Provides a safe environment for decision making to experiment with different type of potential scenarios and strategies without real world consequences.

- This strategy will test those different strategies, explore those options and make informed decisions based on the results of the simulation

Our Goal

- Using extend sim will help identify potential issues that can arise from implementing potential change.

- Our goal is to provide PACE with relevant recommendations to encourage the organization to reach their specified goals. This will be assisted by a virtual simulation of the organizations current processes.

- This will allow an overall understanding and provide the team with enough information to produce suitable solutions for the challenges they are facing.

Method of Communication Between the Team and Pace

A total of three interactive meetings took place between our team and the PACE representatives

These meetings included:
- In-Class Introduction
- Phone Call
- Zoom Meeting

Throughout the project we communicated through e-mails whenever we needed more information for the conceptual model

In-Class Introduction

- Firstly, Dr. Ayman Tobail arranged for representatives of the organisation to visit the college in order to introduce themselves and provide an oversight into their operations and goals of their establishment

- This was an extremely beneficial meeting as it allowed a sense of understanding for the organisation and how the initial model should be designed

- This meeting also allowed us the opportunity to establish a formal method of communication between the team leader and the organisation representatives.

Phone Call

- The next time in which communication in relation to the project occurred over a phone call between the two representatives and the team leader Gary.

- The aim of this specific phone call was to further gather needed data and information to better grasp an understanding of the enterprise and their operations.

- The resulting data obtained from the phone call consisted of the goals they aim to achieve as an organisation as well as numerical and informational data related to the operations for a product order.

Questions Asked on Phone Call

- What is the general process for a received order?

- Orders come in for standard products, customer is sent quote, once agreed, materials are ordered, workshop starts making products, once completed, customer contacted, product delivered, customer sent invoice.

- What are the organisations main goals for the upcoming year?

- We hope to achieve sales of 250K in 2023 in the woodwork/metalwork section We hope to grow from 0k to 100k through the powder-coating booth by year end 2023.

- How many products can be manufactured at one time?

- 10

- How many workers are usually present at one time?

- 3

- What is the estimated time taken for materials to arrive onsite?

- Materials could either be in stock on the premises or it could take up to 2 days to collect to materials.

- What is the estimated average completion time of manufacturing process?

- 2 weeks

- What is the estimated delivery time to get the product to the customer?

- 2 days

- Do products leave the premises as soon as they are finished?

- Products are either sent to the customer or sent to a specific section for spray painting.

Zoom Meeting

- Our final official communication with the enterprise took place over a Microsoft Teams video call. This call was arranged by the lecturer, Tobail Ayman.

- It took place on Monday the 27th of march at 12:30-13:00.

- This meeting was between all team members as well as the two representatives.

- Firstly, it was ensured that all members had access to the call and then proceeded to present our work which was easily demonstrated through the rough model of the project.

- This was the initial conceptual model was designed which was found to be most convenient and easily understandable for presentation to the representatives.

- Following the description of the model and the relaying of data currently possessed, all relevant questions were asked.

- These questions consisted of topics surrounding any areas the team were not entirely confident in regarding the enterprise, for example delivery times and locations.

- The meeting was finished out by asking if the representatives had any questions in response for the team. Once all queries had been resolved, thank you pleasantries were carried out before signing off.

Explanation of Entity Relationship Model

ER Model

- This model allowed us to understand the key processes involved in a standard order placed with the company.

- Firstly, the customer places an order by contacting the organization and identifying the specifications they require.

- Once the order is recorded it is then transferred to the accounts department which validates the order and ensures the resources are ordered to be readily available for when they are required
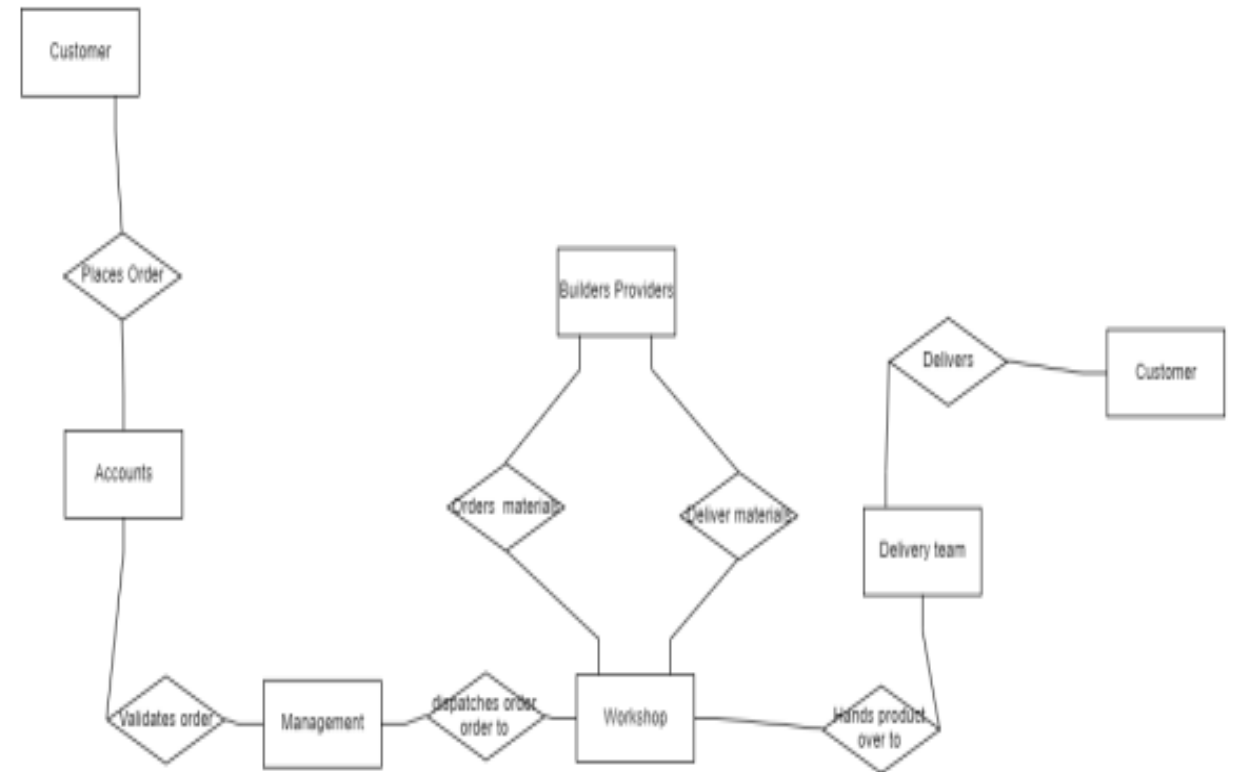
ER Model

- The management then takes on the order and coordinates the required workforce and supplies to be accessible upon request

- This involves ensuring that supply orders have been completed and delivered and the proper tools are onsite for the order

- Following the completion of the manual construction of the order, the workshop hands over the final product to the delivery team.

- The final stage of the process refers to the delivery of the product

- The organization delivers in and around the Dublin area and company vans deliver direct to the customer.

General Process For A Received Order

- *Orders come in for standard products.*
- *Customer is sent quote*

- *Once agreed, materials are ordered*
- *Workshop starts making products*
- *Once completed, customer is contacted*

- *Product delivered*
- *Customer is sent an invoice*

Final Model

- *Run settings:*

- The model is set to run from day 0 to 260. We chose 260 days as this is around the number of working days in a year and we only run the simulation once.

- We simulated the process by creating one order every five days

- *Order created:*

- We create 1 order every 5 days and send it to the set block to set the attributes

- *Assembly:*

- When an entity arrives at an Activity block, it is queued and waits to be processed.

Final Model
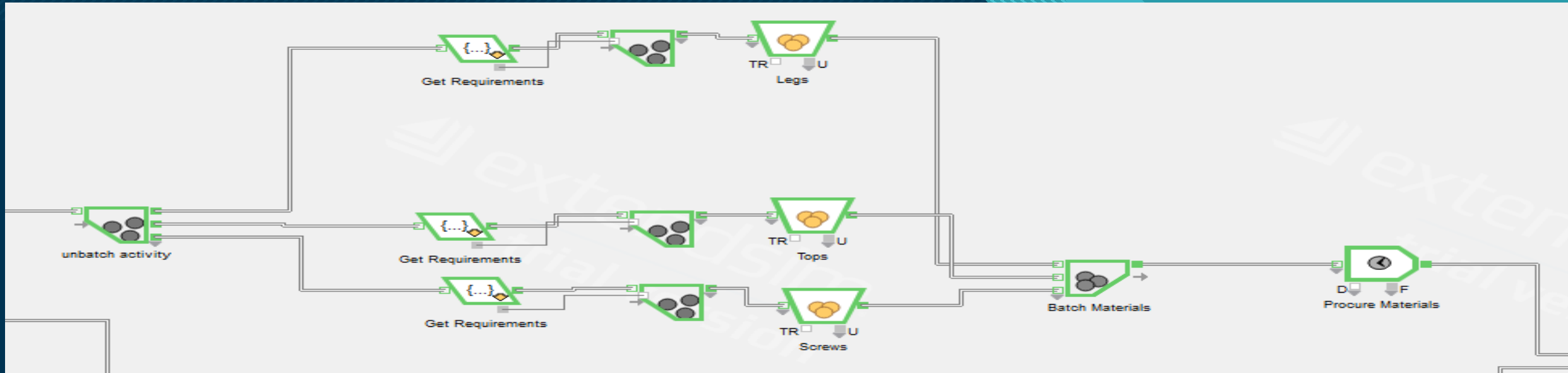
Procure:

- Here is where we gather our materials from our set block with our get block and add it to our resource item and to replicate the procurement activity, we added an activity block with 2-day process time.

Requirements:

- Here we batch our quantity of products, labour, and space available

Post assembly:

- Here we either send products straight to delivery or send to spray booth first. Each Unbatch will release available labour as the process goes

Recommendations

- Increase the throughput, for example increase the amount of labour by doubling the number of workers to decrease the amount of time to complete each order which will in turn lead to more orders being completed at a faster rate and more revenue for the organisation.

- The storage space could be increased but we concluded that it would have no effect on the number of orders that are processed as Pace have a variety of different orders daily with products like chairs and tables being the only consistent orders. We would recommend storing raw materials based on the season and previous yearly orders by tracking the seasonality of orders.

Conclusion

- In summary, working on this project together and using the program was a fulfilling experience despite the initial unfamiliarity with it.

- We put in a lot of hard work for a few weeks to accurately capture the representative's recorded processes of the organization.

- Seeing our envisioned concept come to life in the program was satisfying. As a team, the required work was put in to resolve mistakes and utilized available resources to perfect the details, leading to a successful outcome.

- The journey was a learning experience both individually for each team member as well as a cooperative team. We are pleased with our achievements and enjoyed the process.

- This project provided us with valuable learning experiences that are beneficial for both our future careers and personal growth.

- We gained skills in conceptual modelling, working with ExtendSim, and collaborating with a real organization on a project that has the potential to directly benefit their work.

- This was all orchestrated by our lecturer Dr.Ayman who provided criticism and support to help us complete this project. This experience is a valuable addition to our CVs. We also improved our communication and teamwork skills throughout the project, making it a fantastic learning opportunity overall.

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Thank You For Listening!