Final Presentation

Team 2: Komal Khan, William Mikalik, Carson Amos, Vy Huynh, Md Safat Raihan, Steven Montgomery

4/24/2025

GEORGE MASON UNIVERSITY

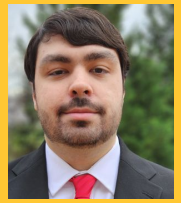
Manhattan Pizza

Team Introduction

Name:
Komal Khan

Role:
Team Lead

Tasks:
Lead team meetings, maintain project development plan



Name:
William Mikalik

Role:
Agenda and Communications Manager

Tasks:
Take notes in team meetings, keep in contact with sponsor

Name:
Carson Amos

Role:
Data Manager

Tasks:
Document and analyze sponsor business processes

Name:
Vy Huynh

Role:
Verification and Validation Manager

Tasks:
Establish and maintain project/product quality

Name:
Md Safat Raihan

Role:
Time and Product Manager

Tasks:
Gather and record product development information

Name:
Steven Montgomery

Role:
Documentation and Training Manager

Tasks:
Develop and coordinate training material/plan

Business Sponsor Introduction

Business: Manhattan Pizza

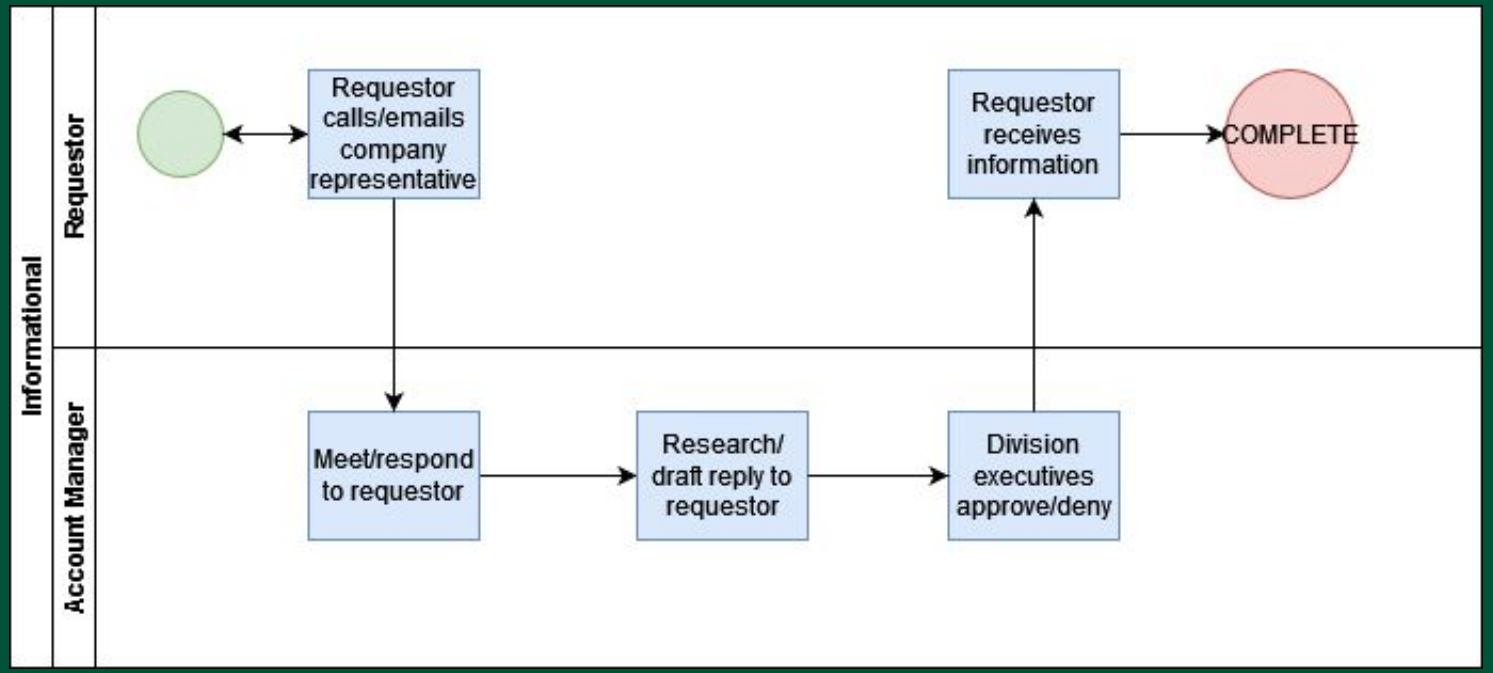
Ownership: Jacob Azar

Size: Small/Medium Business, 15 Corporate Staff, 20-30 Franchisees and Managers

Legal/Financial Structure: LLC

History/Story: In need of a public facing website, ordering portal and dashboards to create a new business-to-business division. They want to set up an ordering portal to allow access for vendors to buy their product and to put them in stores to expand their business.

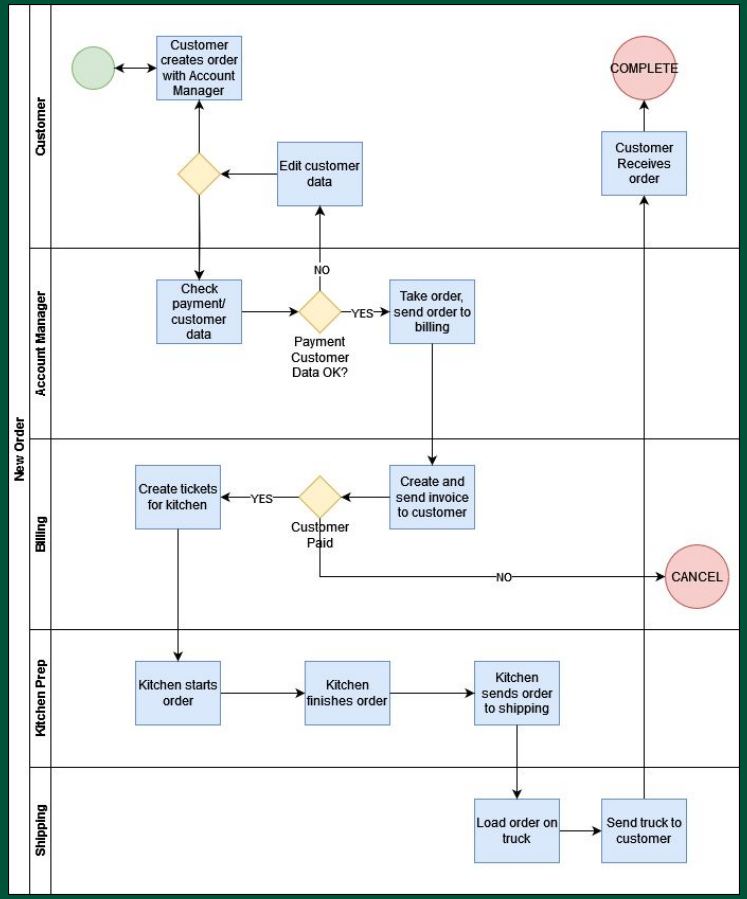
Business Process Diagram: Informational



Business Process Quantification: Informational

	INFORMATIONAL							
		Time in Mins (Avg)	Personnel	Hourly Rate	People Cost	Equipment	Equipment Cost	Total Cost
1	Requestor calls or emails company representative	30	Requestor	$0.00	$0.00			$0.00
2	Meet or respond to requestor	30	Account Manager	$40.00	$20.00			$20.00
3	Research/draft reply to requestor	180	Account Manager	$40.00	$120.00			$120.00
4	Executives approve or deny response	120	Account Manager / Executives	$50.00	$100.00			$100.00
5	Account Manager meets, calls or emails requestor	30	Account Manager / Requestor	$40.00	$20.00			$20.00
								$260.00

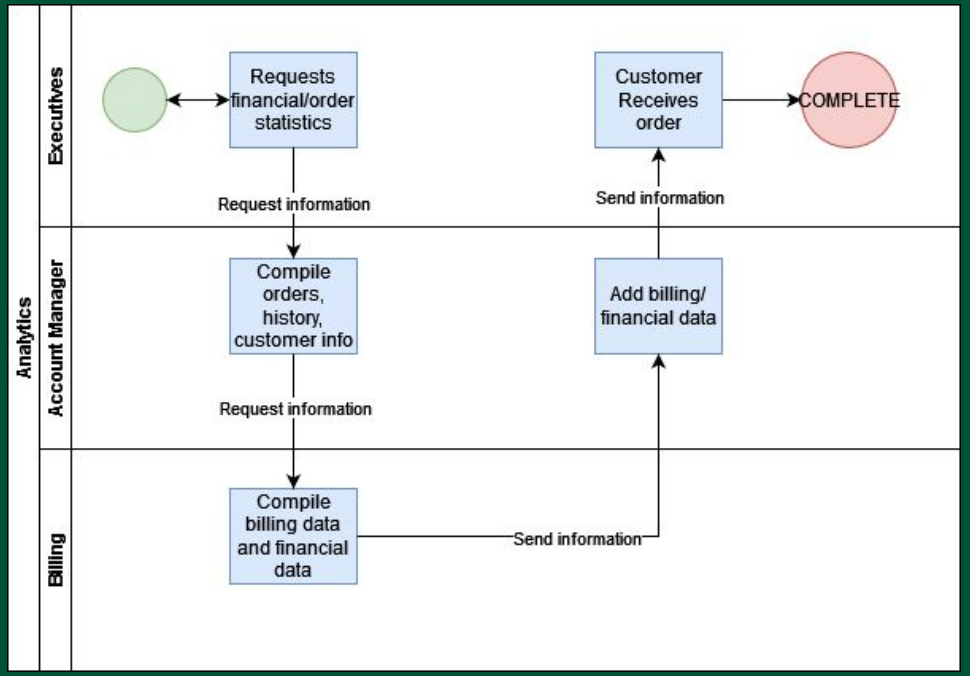
Business Process Diagram: Ordering



Business Process Quantification: Ordering

	ORDERING							
		Time in Mins (Avg)	Personnel	Hourly Rate	People Cost	Equipment	Equipment Cost	Total Cost
1	Customer creates order with account manager	30	Customer / Account Manager	$40.00	$20.00			$20.00
1.1	Edit customer data	15	Account Manager	$40.00	$10.00			$10.00
2	Check payment/customer data	15	Account Manager	$40.00	$10.00			$10.00
2.1	Customer/payment data ok?	15	Account Manager	$40.00	$10.00			$10.00
2.2	Take order, send to billing	30	Account Manager	$40.00	$20.00			$20.00
3	Create and send invoice to customer	45	Billing Staff	$40.00	$30.00			$30.00
3.1	Has customer paid?	15	Billing Staff	$40.00	$10.00			$10.00
3.2	Create tickets for kitchen	45	Billing Staff	$40.00	$30.00			$30.00
4	Kitchen starts order	120	Kitchen Staff	$12.50	$25.00			$25.00
4.1	Kitchen preps order	360	Kitchen Staff	$12.50	$75.00			$75.00
4.2	Kitchen sends order to shipping	240	Kitchen Staff	$12.50	$50.00			$50.00
5	Load order on trucks	60	Delivery Staff	$9.00	$9.00			$9.00
5.1	Send order to customer	120	Delivery Staff	$20.00	$40.00			$40.00
								$339.00

Business Process Diagram: Analytics



Business Process Quantification: Analytics

	ANALYTICS						
		Time in Mins (Avg)	Personnel	Hourly Rate	People Cost	Equipment	Equipment Cost	Total Cost
1	Requests financial or order statistics	30	Executives	$50.00	$25.00			$25.00
2	Compile orders, history, customer information	500	Account Managers	$40.00	$333.33			$333.33
3	Compile billing and financial data	330	Billing Staff	$40.00	$220.00			$220.00
4	Add billing and financial data to reports	120	Account Managers	$40.00	$80.00			$80.00
5	Meet or Send Information to Executives	60	Account Managers / Executives	$50.00	$50.00			$50.00
								$708.33

Areas for Improvement

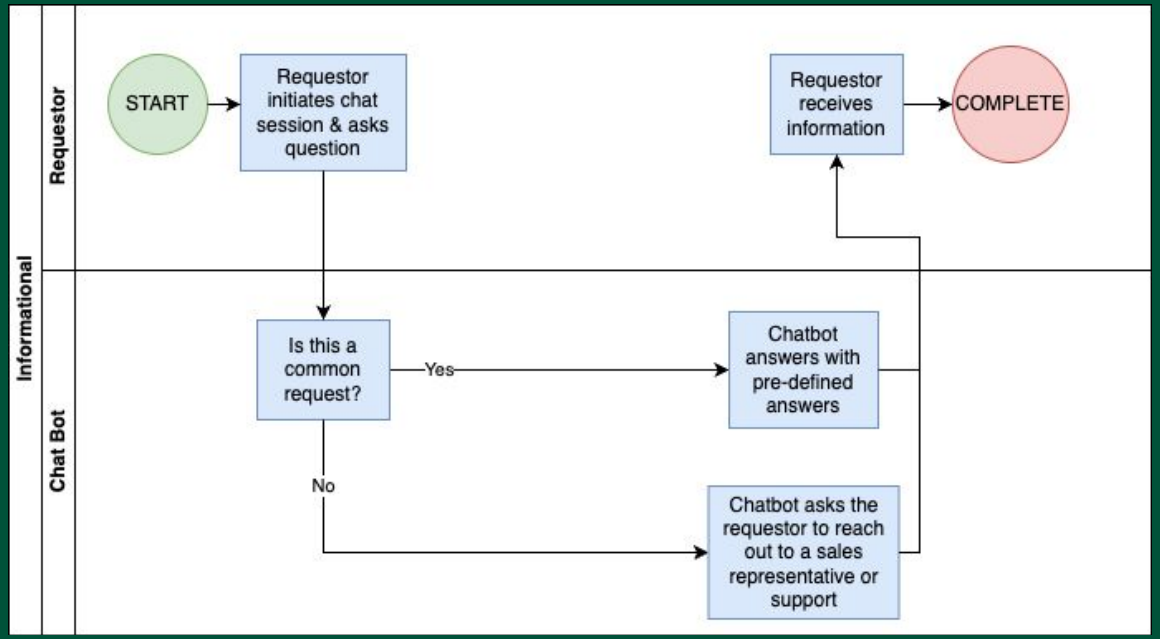
- Manhattan Pizza has concerns on three main focus areas:
  - Informational Requests: General/common questions from customers
  - Orders: Processes when customers place orders
  - Analytics: Processes when management request sales or other analytical data
- No automation, processes consisted of 100% manual human intervention
- Save time and money on processes

Requirements and Plan

IMPORTANCE

Criteria	Sponsor's Requirements	Team's Plan
Ordering Process	Seamless integration with existing systems, low training needs for staff	**POS Online Ordering**: Live staff training demo, user-friendly design
Analytics	Higher data accuracy and consistency	**Analytics Dashboard**: Quality checks to ensure data integrity and security
Informational Requests	Faster FAQ process times, decreased email flooding	**AI Chatbot:** Verified by response analysis

Business Process Diagram: Informational



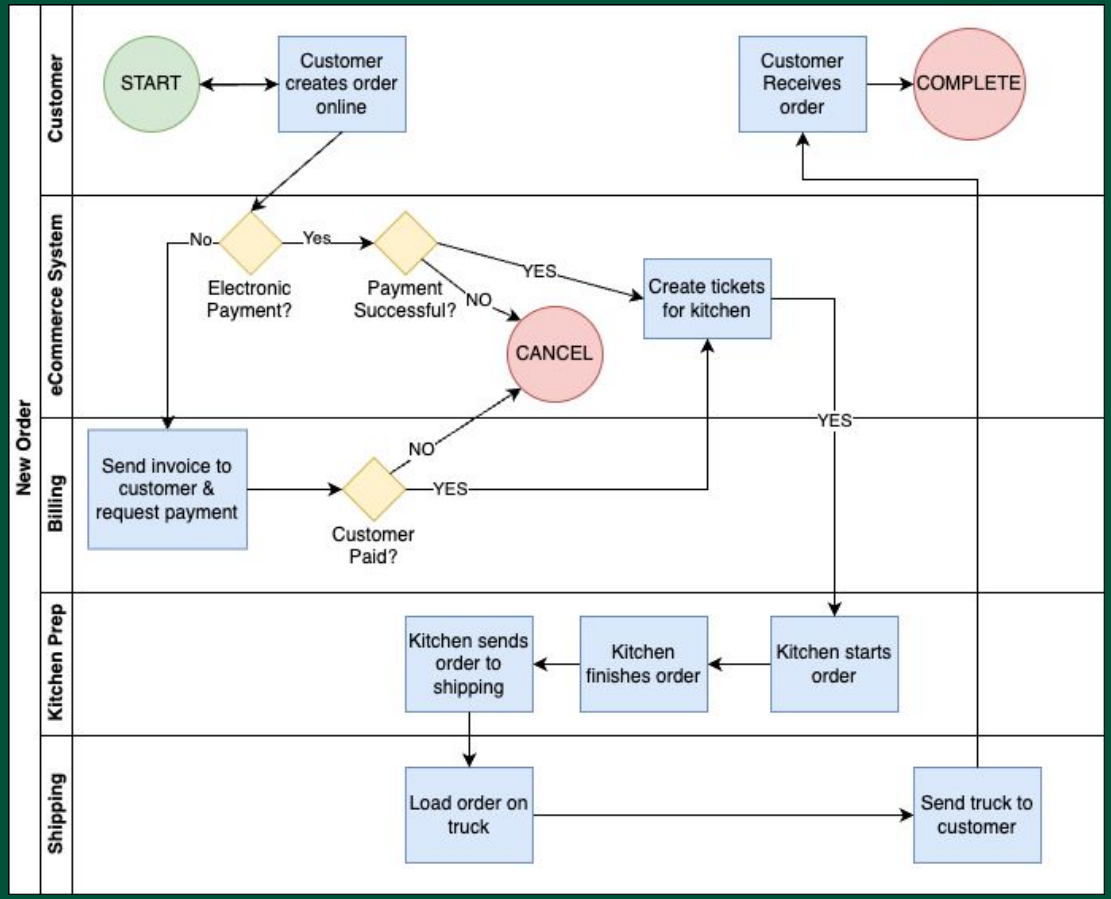
Business Process Quantification: Informational

		INFORMATIONAL					
		Time in Mins (Avg)	Personnel	Hourly Rate	People Cost	Equipment	Equipment Cost	Total Cost
1	Requestor initiates chat session & asks questions	1	Requestor	$0.00	$0.00			$0.00
2	Chatbot answers with predefined question or pushes the requestor to reach out to the sales team	1	Chatbot	$0.00	$0.00			$0.00
								$0.00

Chatbot Solution: Saved **~$260 per informational request event**

- Approx. 100 email/phone requests per year: **$26,000 saved annually**

Business Process Diagram: Ordering



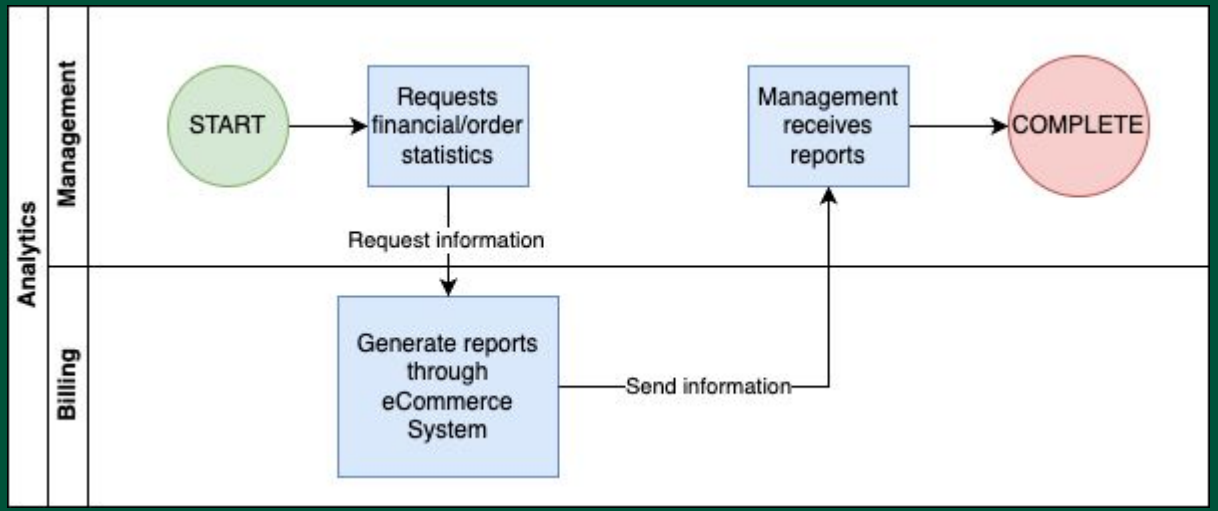
Business Process Quantification: Ordering

	ORDERING						
		Time in Mins (Avg)	Personnel	Hourly Rate	People Cost	Equipment	Equipment Cost	Total Cost
1	Customer creates order online	30	Customer	$0.00	$0.00			$0.00
2	Did customer pay via electronic payment?	1	eCommerce System	$0.00	$0.00			$0.00
2.1	Payment Successful?	1	eCommerce System	$0.00	$0.00			$0.00
2.2	Customer/payment data ok?	1	eCommerce System	$0.00	$0.00			$0.00
3	Send invoice to customer and request payment	15	Billing Staff	$40.00	$10.00			$10.00
3.1	Has customer paid?	15	Billing Staff	$40.00	$10.00			$10.00
3.2	Create tickets for kitchen	1	eCommerce System	$0.00	$0.00			$0.00
4	Kitchen starts order	120	Kitchen Staff	$12.50	$25.00			$25.00
4.1	Kitchen preps order	360	Kitchen Staff	$12.50	$75.00			$75.00
4.2	Kitchen sends order to shipping	240	Kitchen Staff	$12.50	$50.00			$50.00
5	Load order on trucks	60	Delivery Staff	$9.00	$9.00			$9.00
5.1	Send order to customer	120	Delivery Staff	$20.00	$40.00			$40.00
								$219.00

Online ordering system: Saved **~$120 per ordering event**—

- Approx. 500 bulk orders placed annually across all locations: **$60,000 saved annually**

Business Process Diagram: Analytics



Business Process Quantification: Analytics

	ANALYTICS							
		Time in Mins (Avg)	Personnel	Hourly Rate	People Cost	Equipment	Equipment Cost	Total Cost
1	Requests financial or order statistics	30	Executives	$50.00	$25.00			$25.00
2	Generate reports through eCommerce system	10	Account Managers	$40.00	$6.67			$6.67
5	Meet or Send Information to Executives	60	Account Managers / Executives	$50.00	$50.00			$50.00
								$81.67

Dashboard Solution: Saved **~$600 per analytics event**—manual entry completely automated

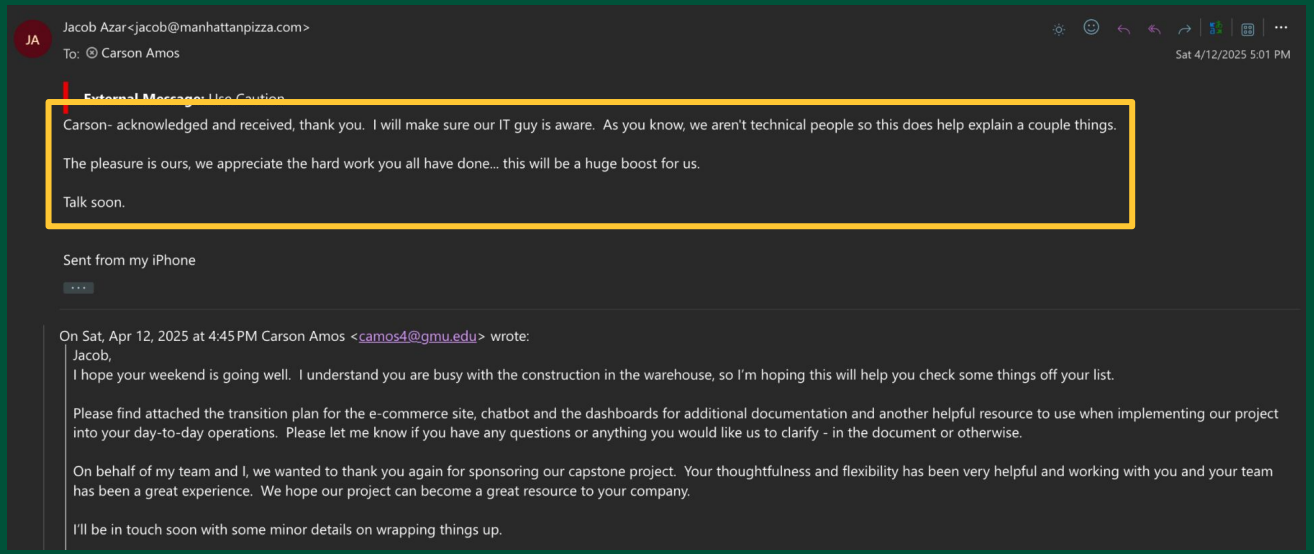
Business Challenges

Criteria	Sponsor's Requirements	Team's Plan
Ordering Process	Seamless integration with existing systems, low training needs for staff	**POS Online Ordering**: Live staff training demo, user-friendly design
Analytics	Higher data accuracy and consistency	**Analytics Dashboard**: Quality checks to ensure data integrity and security
Informational Requests	Faster FAQ process times, decreased email flooding	**AI Chatbot:** Verified by response analysis

Implementation Challenges

- Difficulty contacting sponsor
- Initial dashboard compatibility issues—no data loss incurred
- Lack of experience with WordPress

Sponsor Sign-Off



Jacob Azar<jacob@manhattanpizza.com>
To: Carson Amos
Sat 4/12/2025 5:01 PM

External Message: Use Caution

Carson- acknowledged and received, thank you. I will make sure our IT guy is aware. As you know, we aren't technical people so this does help explain a couple things.

The pleasure is ours, we appreciate the hard work you all have done... this will be a huge boost for us.

Talk soon.

Sent from my iPhone

On Sat, Apr 12, 2025 at 4:45 PM Carson Amos <camos4@gmu.edu> wrote:

Jacob,
I hope your weekend is going well. I understand you are busy with the construction in the warehouse, so I'm hoping this will help you check some things off your list.

Please find attached the transition plan for the e-commerce site, chatbot and the dashboards for additional documentation and another helpful resource to use when implementing our project into your day-to-day operations. Please let me know if you have any questions or anything you would like us to clarify - in the document or otherwise.

On behalf of my team and I, we wanted to thank you again for sponsoring our capstone project. Your thoughtfulness and flexibility has been very helpful and working with you and your team has been a great experience. We hope our project can become a great resource to your company.

I'll be in touch soon with some minor details on wrapping things up.

"The pleasure is ours, we appreciate the hard work you all have done…this will be a huge boost for us."

- Jacob Azar

Product Testing

Testing:

- Alpha Testing: Login and Authentication
- Beta Testing: Shopping Cart and Checkout
- User Acceptance Testing: Chatbot and Analytics
- Non-Functional Testing: Load and Performance

Results:

No.	Test Case	Steps	Expected Result	Test Type	Result	Status
1	User Login with Valid Credentials	Enter valid username & password, click login	User is successfully logged in	Functional	Pass	Pass
3	Password Reset Functionality	Click 'Forgot Password', enter email, check inbox	Email with reset link is received	Functional	Pass	Pass
4	Add Item to Shopping Cart	Select item, click 'Add to Cart'	Item appears in cart	Functional	Pass	Pass
5	Checkout Process	Enter shipping & payment details, confirm order	Order confirmation received	Functional	Pass	Pass
12	Email Notification System	Perform action triggering an email notification		Functional	Pass	Pass
15	Search Functionality	Enter search query, click 'Search'	Relevant results displayed	Functional	Pass	Pass
16	Logout Functionality	Click 'Logout' button	User is redirected to login page	Functional	Pass	Pass
20	Error Handling	Enter incorrect details, observe error message	System displays appropriate error message	Functional	Pass	Pass
21	Order History Retrieval	Navigate to 'Order History', verify past orders	Order details load correctly	Functional	Pass	Pass
22	Discount Code Application	Enter valid discount code at checkout	Discount is applied	Functional	Pass	Pass
28	User Registration	Complete registration form, check email	Confirmation email received	Functional	Pass	Pass

Testing Feedback

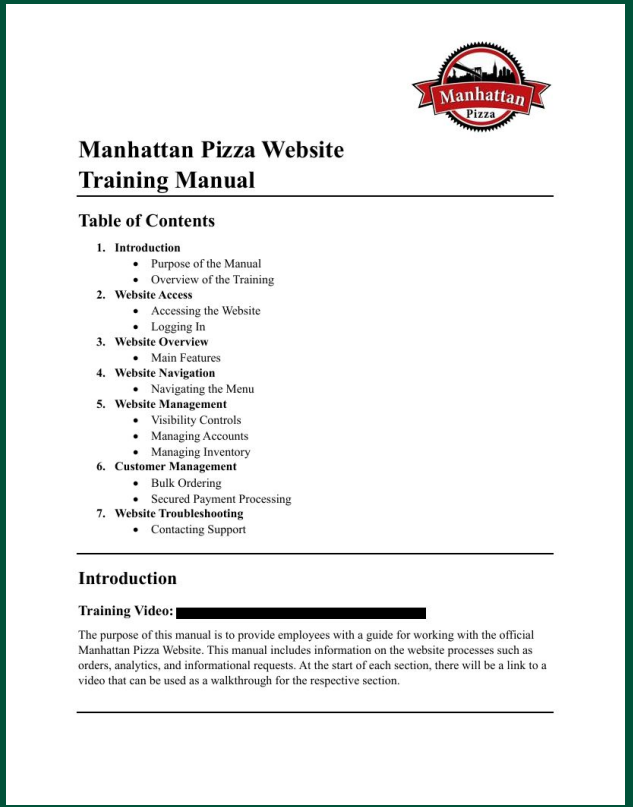
Sponsor Feedback:

- Pleased with the product progress and testing methodology
- Acknowledged the importance of uncovering performance bottlenecks and usability challenges before deployment
- Emphasized the importance of security for all of the parties involved in the business transactions

Product Training

Training:

- Date: 4/1/2025 6:00 PM–7:00 PM
- Meeting: Zoom Video Meeting
- Trainers: Steven Montgomery
- Trainees: Jacob Azar and Chris Tanous
- Materials: Training Manual and Videos
- Feedback: Positive



Manhattan Pizza Website
Training Manual

Table of Contents

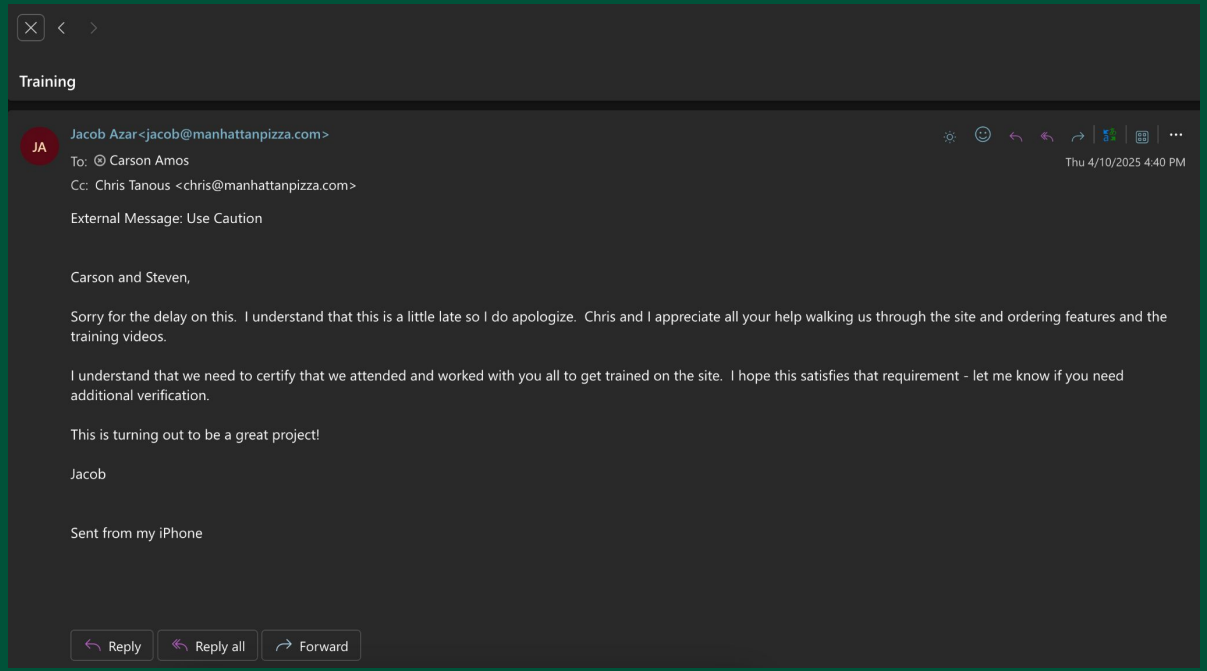
1. **Introduction**
   - Purpose of the Manual
   - Overview of the Training
2. **Website Access**
   - Accessing the Website
   - Logging In
3. **Website Overview**
   - Main Features
4. **Website Navigation**
   - Navigating the Menu
5. **Website Management**
   - Visibility Controls
   - Managing Accounts
   - Managing Inventory
6. **Customer Management**
   - Bulk Ordering
   - Secured Payment Processing
7. **Website Troubleshooting**
   - Contacting Support

Introduction

Training Video: [redacted]

The purpose of this manual is to provide employees with a guide for working with the official Manhattan Pizza Website. This manual includes information on the website processes such as orders, analytics, and informational requests. At the start of each section, there will be a link to a video that can be used as a walkthrough for the respective section.

Training Confirmation



Training

JA

Jacob Azar<jacob@manhattanpizza.com>

To: Carson Amos

Cc: Chris Tanous <chris@manhattanpizza.com>

Thu 4/10/2025 4:40 PM

External Message: Use Caution

Carson and Steven,

Sorry for the delay on this. I understand that this is a little late so I do apologize. Chris and I appreciate all your help walking us through the site and ordering features and the training videos.

I understand that we need to certify that we attended and worked with you all to get trained on the site. I hope this satisfies that requirement - let me know if you need additional verification.

This is turning out to be a great project!

Jacob

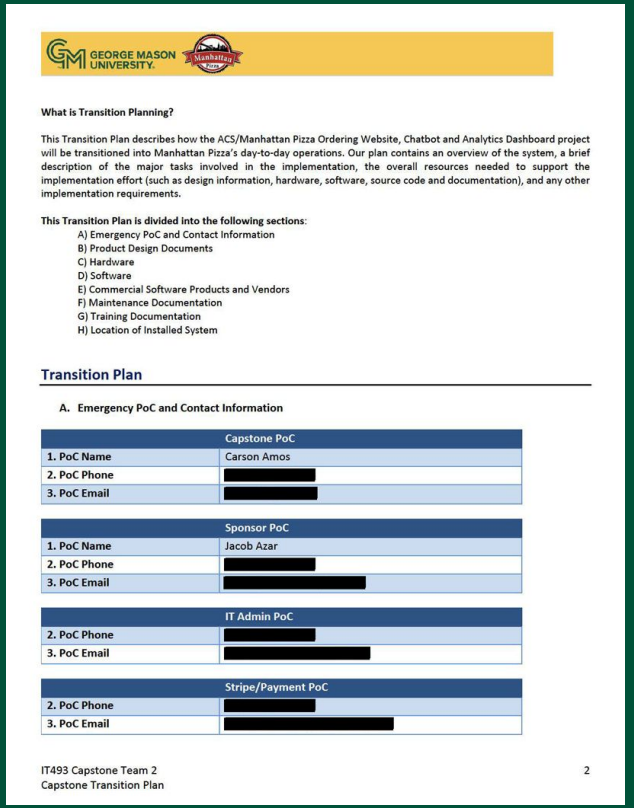
Sent from my iPhone

Reply | Reply all | Forward

Product Transition

Transition:

- Emergency PoC and Contact Information
- Product Design Documents
- Hardware
- Software
- Commercial Software Products and Vendors
- Maintenance Documentation
- Training Documentation
- Location of Installed System



What is Transition Planning?

This Transition Plan describes how the ACS/Manhattan Pizza Ordering Website, Chatbot and Analytics Dashboard project will be transitioned into Manhattan Pizza's day-to-day operations. Our plan contains an overview of the system, a brief description of the major tasks involved in the implementation, the overall resources needed to support the implementation effort (such as design information, hardware, software, source code and documentation), and any other implementation requirements.

This Transition Plan is divided into the following sections:

A) Emergency PoC and Contact Information
B) Product Design Documents
C) Hardware
D) Software
E) Commercial Software Products and Vendors
F) Maintenance Documentation
G) Training Documentation
H) Location of Installed System

Transition Plan

A. Emergency PoC and Contact Information

	Capstone PoC
1. PoC Name	Carson Amos
2. PoC Phone	[redacted]
3. PoC Email	[redacted]

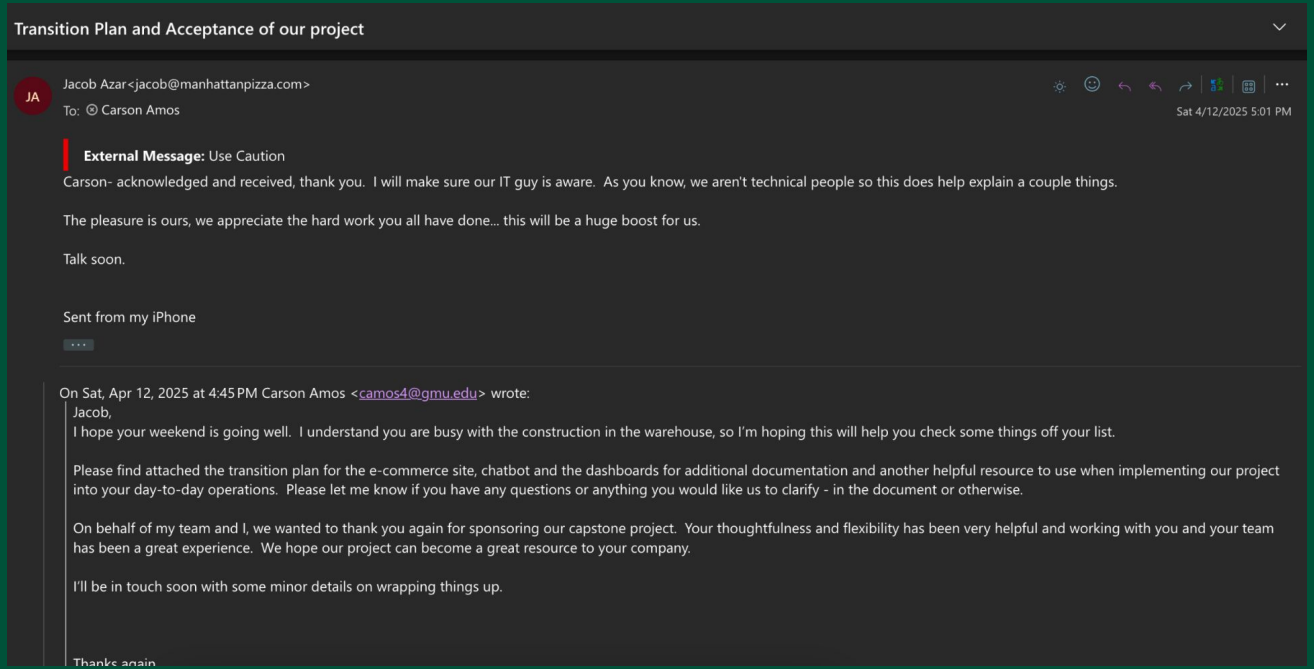
	Sponsor PoC
1. PoC Name	Jacob Azar
2. PoC Phone	[redacted]
3. PoC Email	[redacted]

	IT Admin PoC
2. PoC Phone	[redacted]
3. PoC Email	[redacted]

	Stripe/Payment PoC
2. PoC Phone	[redacted]
3. PoC Email	[redacted]

IT493 Capstone Team 2
Capstone Transition Plan
2

Transition Confirmation



Transition Plan and Acceptance of our project

JA

Jacob Azar<jacob@manhattanpizza.com>

To: Carson Amos

Sat 4/12/2025 5:01 PM

External Message: Use Caution

Carson- acknowledged and received, thank you. I will make sure our IT guy is aware. As you know, we aren't technical people so this does help explain a couple things.

The pleasure is ours, we appreciate the hard work you all have done... this will be a huge boost for us.

Talk soon.

Sent from my iPhone

On Sat, Apr 12, 2025 at 4:45 PM Carson Amos <camos4@gmu.edu> wrote:

Jacob,

I hope your weekend is going well. I understand you are busy with the construction in the warehouse, so I'm hoping this will help you check some things off your list.

Please find attached the transition plan for the e-commerce site, chatbot and the dashboards for additional documentation and another helpful resource to use when implementing our project into your day-to-day operations. Please let me know if you have any questions or anything you would like us to clarify - in the document or otherwise.

On behalf of my team and I, we wanted to thank you again for sponsoring our capstone project. Your thoughtfulness and flexibility has been very helpful and working with you and your team has been a great experience. We hope our project can become a great resource to your company.

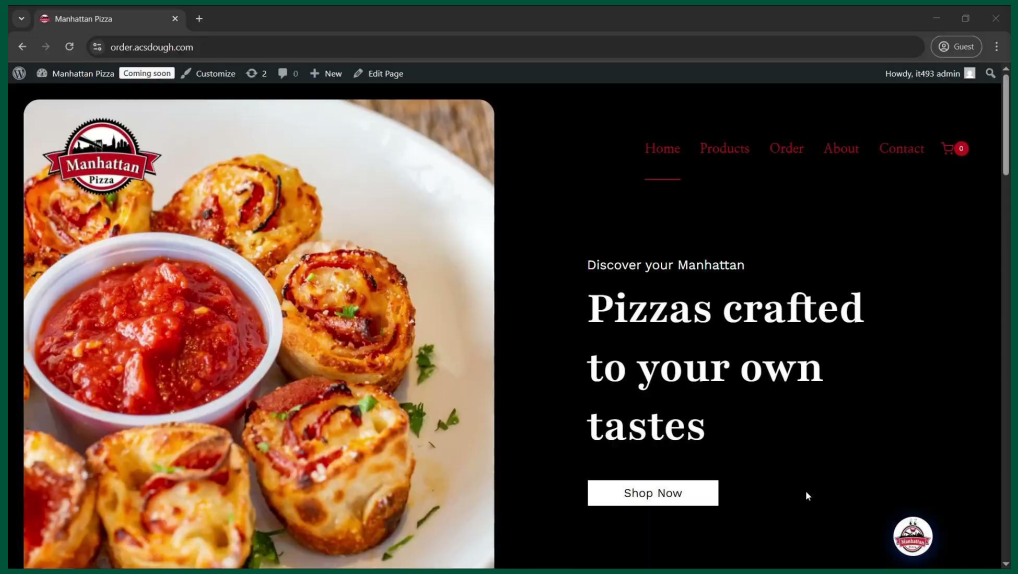
I'll be in touch soon with some minor details on wrapping things up.

Thanks again

Live Demonstration

Demonstration:

- POS Online Ordering System
- Analytics Dashboard
- AI Chatbot



Business Story Impact on Business

POS Online Ordering System:

- Saved **~$120 per ordering event; $60,000 saved annually**.
- **69.5% time reduction**—reduced from 210 minutes to 64 minutes
- Not including cooking and delivery time since we cannot automate that

Analytics Dashboard:

- Saved **~$600 per analytics event**—manual entry 100% automated
- **~90.38% time reduction**—reduced from 1040 minutes to 100 minutes

AI Chatbot:

- Saved **~$260 per informational request event; $26,000 saved annually**
- **~99% time reduction**—reduced from 390 minutes to 2 minutes

Cost Summary

Pre-Solution:

Time	Cost	People	Equipment
Ordering	$339 per event—hourly rates for labor	Client	None—done manually
Analytics	$708 per event—hourly rates for labor	Client	None—done manually
Informational Requests	$260 per event—hourly rates for labor	Client	None—done manually

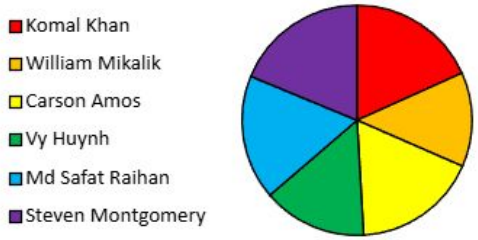
Post-Solution:

Time	Cost	People	Equipment
Ordering	$219 per event—hourly rates for labor	Client	POS on website
Analytics	$81.67 per event—hourly rates for labor	Client	Analytical dashboard on website
Informational Requests	$0 per event—hourly rates for labor	Client	AI chatbot on website

Team Timesheet

Person	Total Hours	% Total	Avg %
Komal Khan	37.50	18%	110%
William Mikalik	27.25	13%	80%
Carson Amos	36.00	18%	105%
Vy Huynh	30.00	15%	88%
Md Safat Raihan	36.00	18%	105%
Steven Montgomery	38.50	19%	113%
TOTAL	205.25		
Average Per Person			
	34.21		
75% Requirement			
	25.66		

Assignment ID	Total Time (Hours)
1 - Finalize Solution	5.50
3 - Product Development Plan	10.00
11 - GoLive Demo	9.00
14 - Lessons Learned	2.00
Dress Rehearsal	16.50
Sponsor Meetings	49.00
Team Meetings	42.50
Presentation Prep	35.92
Team Management	2.33
Product Development	32.50
	205.25



Personal Impact from Capstone Program

Komal Khan: Confident in my abilities in IT, business, project management, and leadership

William Mikalik: Now knowledgeable in the world of applying IT to business

Carson Amos: Confident in entering the IT workforce with both IT and business skills

Vy Huynh: Gained practical experience in applying security principles

Safat Raihan: Developed teamwork and project management abilities

Steven Montgomery: Prepared to enter the workforce with practical, applied IT skills

References

Association for Information Systems. (2023). *The benefits of automated data systems in modern business.* https://www.aisnet.org/automated-data-systems

Blanchard, P. N., & Thacker, J. W. (2023). *Effective training*. Google Books. https://books.google.com/books?hl=en&lr=&id=70HVEAAAQBAJ&oi=fnd&pg=PT16&dq=training+programs+for+businesses&ots=kRGkbypiqt&sig=bl1i0BoPfkdoeI_an0fCFHhzcik#v=onepage&q&f=false

McKenzie, D. (2021). Small business training to improve management practices in developing countries: re-assessing the evidence for 'training doesn't work.' *Oxford Review of Economic Policy*, 37(2), 276–301. https://doi.org/10.1093/oxrep/grab002

Object Management Group. (2014). *Business Process Model and Notation Specification.* Object Management Group. https://www.omg.org/spec/BPMN

References

Richardson, C., Nucci, R., & Sevilla, D. (2024, February 21). What is Knowledge Management? Definitions, Types & Examples. *GetGuru*. https://www.getguru.com/reference/what-is-knowledge-management

Robertson, S., & Robertson, J. (2012). *Mastering the requirements process*. *Addison-Wesley*.

Sangil, Albert A. "Exploratory Data Analysis of Government Procurement Data to Influence Bidding Decision and Strategy in Albay, Philippines." *International Conference on Computing and Communication Systems (ICCCS)*, IEEE, 2020, pp. 2-4.

Schwalbe, K. (2019). *Information Technology Project Management.* Cengage Learning.

Smith, J. K., & Brown, T. L. (2021). The impact of automation on business process management. *Journal of Business and Technology*, 34(2), 145-162. https://doi.org/10.1234/jbt.2021.145

References

Taju, Semmy Wellem, et al. "Al-powered Chatbot for Information Service at Klabat University by Integrating OpenAI GPT-3 with Intent Recognition and Semantic Search." *International Conference on Cybernetics and Intelligent Systems*, IEEE, 2023, p. 12.

Turban, E., Pollard, C., & Wood, G. (2018). *Information technology for management on-demand strategies for performance, growth and sustainability*. *Wiley*.

Vijayakumar, Harsha. "Revolutionizing Customer Experience with Al: A Path to Increase Revenue Growth Rate." *15th International Conference on Computer and Automation Engineering (ICCAE)*, IEEE, 2023, pp. 97-112. DOI: 10.1109/ECAI58194.2023.10194016.

Wang, Yan. "Al and Data-Driven Business Models for Industry 4.0." *IEEE Transactions on Industrial Informatics*, vol. 20, no. 2, 2024, pp. 130-145.

Thank You!

GEORGE MASON UNIVERSITY

Manhattan Pizza