CONESTOGA
Connect Life and Learning

Final Report

Team	4 – Loblaws (alias used - Loblyst)
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Course	Information Technology Business Analysis Capstone Project
Section	08
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1. Executive Summary

Loblyst's proposal for the Loblyst E-commerce Platform Project focuses on improving Loblyst's e-commerce functionalities by solving various performance issues, scalability issues, and the overall user experience. This project is invaluable in addressing the constraints that negatively impact Loblyst's expansion, slow loading time, restrictive options for customer support, and the inadequate full integration of the PC Optimum reward program. For this, different solution strategies have been analyzed, one of which is to acquire a commercial application, and another is to outsource the solution or to build the system from scratch. By identifying the goals and challenges of Loblyst, the report outlines the best practices to consider creating scalability, raising performance, and augmenting customer satisfaction as a foundation for Loblyst's comprehensive digital plan.

2. Overview of the company selected

Loblyst store is a food and drug retailer founded in 1919, with its head office in Brampton, aiming to bring the latest self-serve, cash- -and carry concept to Canada. It operates more than 2,500 stores, making it the largest food and drug retailer (Bradburn,2019, para 1) & (Pouline, 2024, para 1). Currently it has become one of the main players in the Canadian Supermarket and grocery sectors. Loblyst reported a total revenue of **$59.5B** for the fiscal year 2023, with a gross margin of $18B**.** To continue investing in its store network and distribution centers, the company invested a total of $**2.1B** in capital expenditure in the year 2023. The company is currently worth $39B in total assets (Loblaw Companies Limited, 2023, p. 7-27).

Looking at the financial statement there was no value explicitly allocated to IT and Operations, but the Company continued to make investments in new IT systems to improve the operating effectiveness of the organization. E-commerce sales of **$ 3.3 billion,** and an increase of **10.7%, are** because of IT investment in improving the digital customer experience (Loblaw Companies Limited, 2023, p. 41).

Market Share: In the Canadian supermarket and grocery sector, Loblyst has **29%** of the market shares where other great players like Metro and Sobeys operate (Ozbun. T, 2024, para 1).

Brief Overview of Loblyst Financials for 2023 and 2022

Brief Overview of Loblyst Financials for 2023 and 2022		
Year	2023 ($m)	2022 ($m)
Revenue	59,529	56,504
Revenue Growth	5.4%	6.3%
Sales	58,345	53,492
Gross Margin	18,083	12,165
Gross Margin %	31.0%	30.90%
Total Assets Approximately	39,000	38,200

Loblyst Store declared a dividend per common share of **$1.74B** (Loblaw Companies Limited, 2023, p.75).

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3. List of team members and responsibilities

Team Member	Role	Responsibilities
Vaishnavi Gopal Wadhwa	Project Manager, Developer	- Oversee project planning and execution.
		- Manage team coordination and timelines.
		- Contribute to solution development, writing code, and implementing features.
Janviben Jayantibhai Patel	Associate Project Manager, Developer	- Assist the Project Manager with task delegation and status updates.
		- Ensure daily progress on milestones.
		- Support development by writing and testing code.
Ahmed Adhil Mohamed Muzahir	Research Lead, Business Analyst (BA)	- Lead research into the company's problem and solution options.
		- Analyse and document requirements.
		- Ensure the solution addresses business needs effectively.
Ota Adesina	Technical Lead, Business Analyst (BA)	- Lead the technical design and ensure the solution is technically feasible.

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		- Collaborate on requirements gathering and refine technical specifications.
		- Provide guidance on technology stack and architecture.
Simran Rattu	Documentation Lead, Business Analyst (BA)	- Prepare and maintain all project documentation.
		- Document meeting minutes, requirements, and project deliverables.
		- Assist with business analysis and process mapping.
Soji Koshy	Communication Lead, QA Tester	- Manage internal and external communications, including updates to stakeholders.
		- Lead quality assurance by developing and running test cases to ensure the solution functions as expected.

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4. Description of the problem to be solved

Loblyst struggles to implement its e-commerce platform and adapt to the rapidly changing retail environment powered by digital changes. Today, it is only offering this service within the GTA, which somehow reduces its customer base. Moreover, the website contains non-user-friendly interfaces, issues with the website functionality, and slow loading, which altogether make a poor customer experience. These limitations are really preventing Loblyst from enhancing operational efficiency and meeting growing customer expectations. Addressing these issues is vital to achieving growth, ensuring long-term profitability, and competing in the market.

5. Competitive analysis findings

For our competitive analysis of Loblyst Company, we conducted a comprehensive review utilizing three key frameworks: a SWOT analysis, a PESTEL analysis, and the Balanced Scorecard approach.

SWOT Analysis

SWOT Analysis   Loblyst

PURPOSE
The purpose of this analysis is to evaluate the company's strengths and weaknesses on the internal front as well as opportunities and threats on the external front to build strategies for a sustainable future.

S	INTERNAL **STRENGTHS**
1	Customer Loyalty
2	Operation Efficiency
3	Cost - Effective
4	Fast & Effective delivery
5	Brand Recognization

W	INTERNAL **WEAKNESSSES**
1	Regulatory changes
2	New or Rising Operation cost
3	Resource & Time Waste
4	Competitors offer better deals
5	Customer complaints on pricing

O	EXTERNAL **OPPORTUNITIES**
1	Growth in E - commerce
2	Grow of health-conscious consumers
3	Technological innovation
4	Environmental sustainability
5	Social responsibility trands

T	EXTERNAL **THREATS**
1	Regulatory Risks
2	Economic Pressure
3	Technological Disruption
4	Social Changes
5	Government Policies

ACTION ITEMS & GOALS	
1	There are opportunities in the **areas of e-commerce and the promotion of healthy products** by using the rapidly evolving technological space and consumers' desires for sustainability.
2	A way to mitigate the effect of inflation and other threats is to **increase operational efficiency and reduce costs by applying automation and artificial intelligence**.
3	**Increase the company's commitment to sustainability activities** to meet environmental objectives; this will help Loblaw to occupy a better position in the market and minimize the company's future risks.
4	The second strategy is to be **very alert to any new regulations** that may pose a threat to work on different ways to adapt.

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Conclusion:

The SWOT analysis of Loblyst Company reveals several internal strengths, such as strong customer loyalty driven by the PC Optimum program, operational efficiency through automated distribution centers, and brand recognition with popular private labels like President's Choice and No Name. However, the company faces internal weaknesses, including rising operational costs due to inflation, slow technology adoption, and customer complaints about pricing. Externally, Loblyst has opportunities for growth in e-commerce, tapping into health-conscious consumer trends, and adopting technological innovations like AI for supply chain improvements. Yet, it must navigate external threats such as regulatory risks, economic pressures, technological disruptions, and evolving government policies. These factors highlight both the competitive advantages and challenges Loblyst must address to maintain market leadership and adapt to changing industry dynamics.

6. Project Selected

The Loblyst E-commerce Platform Project is a strategic initiative aimed at enhancing the digital capabilities of Loblyst, a leading retail brand, to better meet the evolving demands of the modern e-commerce market. Currently, the platform is restricted to the Greater Toronto Area (GTA) and faces significant challenges, including low conversion rates, poor user interface (UI) and user experience (UX), performance issues, and limited geographic coverage. These limitations are hindering the company's ability to scale, compete in the broader market, and deliver exceptional customer experiences (Loblaw, 2018, para.1).

7. As-is process flow (Current state)

The As-is process flow for Loblyst's e-commerce platform outlines the customer's current journey when using the platform. It covers steps from signing in, browsing, and selecting products to choosing a fulfillment option like pickup or delivery. The flow also includes interactions with store employees, delivery drivers, and customer support for order fulfillment and issue resolution (Loblaws, 2024, p. 1).

Explanation of Actors and Their Roles:

- **Customer**: Initiates the journey by browsing, placing orders, and engaging with the fulfilment and delivery process.

- **Admin**: Manages the digital experience, processes order, handles payments, and communicates with customers.

- **Store Employees**: Fulfil orders, handle substitutions, and assist with curb side pickup or in-store pickups.

- **Fulfilment System**: Coordinates order processing, stock checks, and fulfilment preparation.

- **Delivery Drivers**: Transport and deliver orders to customers.

- **Customer Support**: Addresses post-purchase inquiries, handles issues, and provides refunds or replacements if necessary.

This **high-level summary** captures the core interactions for each actor involved in the customer journey:

1. Customer Browsing & Product Selection

- Browse products, Add to cart, Search/filter, Inventory check

2. Cart Review & Checkout

- Review cart, apply discounts, Choose fulfilment, Payment

3. Order Processing & Fulfilment Preparation

- Order sent, Item picking, Substitutions, Packing

4. Order Ready for Pickup or Delivery

- Arrival notification, Pickup time, Curbside/in-store, Order verification

- Driver assigned, Tracking, Delivery window, Order confirmation

5. Post-Order Feedback & Customer Support

- Feedback request, Rate experience, Support contact, Issue resolution

![Loblyst]

Loblyst E-commerce platform
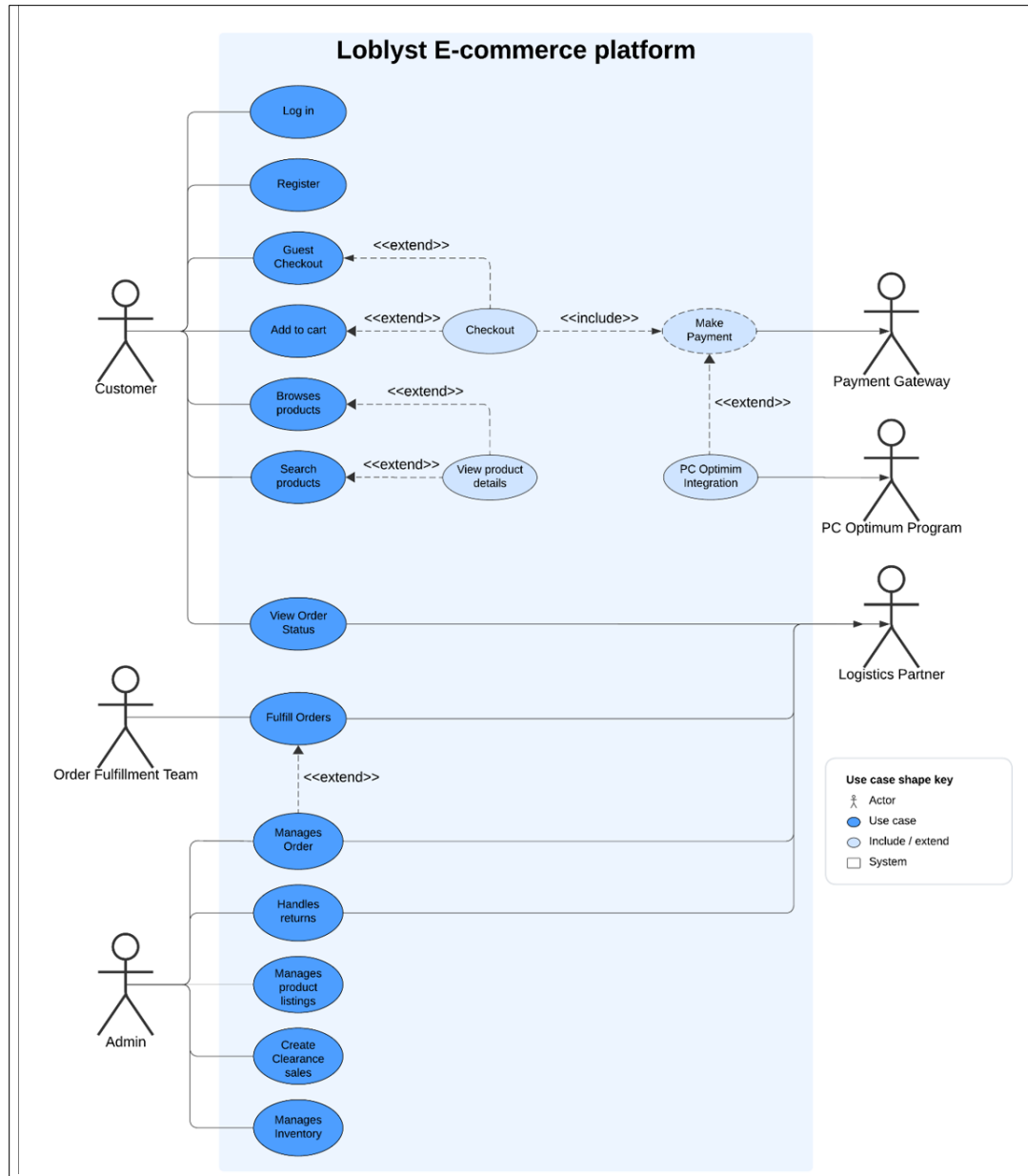
8. Business Requirements

Here is a complete set of business objectives for Loblyst's e-commerce platform following the **[Action] + [Measure] + [Timeframe]** format: (Conestoga College, 2024a, p. 18)

ID	Statement
BO-01	Increase the conversion rate by 15% within 6 months of launching the new e-commerce platform.
BO-02	Reduce cart abandonment rate by 20% within 8 months of implementing user-friendly checkout enhancements.
BO-03	Increase customer satisfaction by 25% within 12 months of improving the website's user interface and performance.
BO-04	Increase mobile transactions by 30% within 10 months by optimizing the mobile platform experience.
BO-05	Reduce support tickets related to checkout issues by 50% within 9 months of streamlining the payment process.
BO-06	Increase repeat purchase rate by 18% within 1 year by implementing personalized recommendations for returning users.
BO-07	Increase average order value (AOV) by 10% within 7 months through targeted upselling and cross-selling strategies.
BO-08	Achieve 40% growth in new user registrations within 6 months by launching an integrated marketing campaign.

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9. Solution requirements (functional and non-functional)

9.1 Functional Requirements

The functional requirements outline the system's need to integrate with PC Optimum for account access and points management, ensuring secure sign-in, and enabling pre-filled data during checkout to streamline the user experience. The platform must provide a smooth checkout, real-time delivery tracking, and seamless inventory management for efficient order processing and fulfilment. Additionally, the system should offer customer support channels, feedback collection, and maintain high performance and scalability to handle growth and traffic.

Requirement Identifying Number	Requirement Description	Requirement prioritization (H, M, L)	Traceability	Requirement Notes
FR001	The system must integrate with PC Optimum, allowing users to sign in using their PC Optimum account, points, and profile data.	H	BO-08	Integration with PC Optimum is crucial for user experience.
FR002	The system must allow account sign-in access using PC Optimum with one password recovery and two-step authentication.	H	BO-08	Ensures secure login processes for users.
FR003	After signing in with their PC Optimum, the system shall send a password change confirmation email. Then the user can go to their PC Optimum account and update their personal details like name, email address, and contact number.	M	BO-08	Enhances user control over account information.
FR004	The applied discounts must be seen, items in the cart must be reviewed, and the user can check out using multiple payment options.	H	BO-02 BO-07	Improves user experience during checkout.
FR005	The system must provide a smooth and prompt checkout process where user information from their PC Optimum account must be prefilled wherever possible.	H	BO-02 BO-05	Enhances checkout efficiency.

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Requirement Identifying Number	Requirement Description	Requirement prioritization (H, M, L)	Traceability	Requirement Notes
FR006	Inventory interfaces must also be further connected to the platform to validate the inventory for stock presence and facilitate the picking and packing process.	H	BO-01 BO-07	Ensures seamless integration with inventory management.
FR007	It must be capable of making specific orders substituted by other products in case some are out of stock and inform buyers about that.	M	BO-01 BO-06	Enhances customer satisfaction by avoiding order delays.
FR008	The platform must provide customers with a message that their order is ready for pickup or delivery, including detailed instructions on how to proceed and timeframes.	M	BO-01 BO-04	Improve customer communication.
FR009	The system should make it more convenient for the users to follow their delivery status in real-time with the relevant estimated arrival time and the driver details if available.	H	BO-03 BO-04	Enhances transparency and user satisfaction.
FR010	The platform must require a survey form or advanced rating to understand users' experience after ordering the products.	M	BO-03	Facilitates service improvement through feedback.
FR011	After the order is completed, the clients should be given several means of communication (live chat, email, phone) and a ticket system for complaints.	H	BO-03 BO-05	Ensures timely issue resolution for customers.
FR012	Points earned should be instantly retrievable and usable from the PC Optimum account during checkout.	H	BO-01 BO-07	Critical for seamless loyalty program integration.
FR013	The system must address issues with incorrect points synchronization for example, during guest checkout, and offer a solution.	M	BO-01 BO-06	Ensures accurate points tracking for users.

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Requirement Identifying Number	Requirement Description	Requirement prioritization (H, M, L)	Traceability	Requirement Notes
FR014	The load time for the platform is to be 3-5 seconds, even under high traffic volume, for the platform's future growth beyond the GTA.	H	BO-03 BO-04	Essential for user experience during high traffic.
FR015	The system must be up running 99.9% of the time, with database enhancements for expanding visitor traffic and the number of orders.	H	BO-01 BO-04	Ensures reliability and scalability of the platform.

9.2 Nonfunctional Requirements

The non-functional requirements focus on ensuring system performance, security, usability, and scalability. Key performance goals include fast load times, responsive actions, and minimal downtime, with security measures like encryption and two-factor authentication safeguarding user data. The system must also maintain usability across devices, comply with regional data protection laws, and regularly track performance metrics, user satisfaction, and geographic order expansion for ongoing improvement and scalability.

Requirement Identifying Number	Requirement Description	Requirement prioritization (H, M, L)	Traceability	Requirement Notes
NFR001	The system will load each page within 2 seconds under standard conditions.	H	BO-03 BO-04	Essential for user satisfaction and retention, especially during peak periods.
NFR002	The system will respond within 1 second after a user initiates an action (e.g., adding items to the cart).	H	BO-02 BO-03	Key to maintaining smooth user experience in an e-commerce environment.
NFR003	The system will allow users to navigate from the homepage to the checkout within three clicks.	M	BO-02	Improves overall user journey and ease of use.

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Requirement Identifying Number	Requirement Description	Requirement prioritization (H, M, L)	Traceability	Requirement Notes
NFR004	The system will automatically adjust the layout to fit desktop, tablet, or mobile screens when it detects a screen resolution change.	H	BO-04	Ensure responsive design across devices.
NFR005	The system will allow users to search for products from the home page.	H	BO-01 BO-08	Important for user engagement and quick navigation.
NFR006	The system will encrypt all sensitive data, including user credentials and payment information, both in transit and at rest.	H	BO-05	Compliance with regulations and essentials for protecting user data.
NFR007	After a user log in, the system will prompt two-factor authentication before completing payments.	H	BO-05	Additional security for sensitive transactions.
NFR008	If the system detects an unusual login attempt, the system will trigger an alert and block the attempt until verified.	H	BO-05	Essential for security to prevent unauthorized access.
NFR009	The system will initiate load balancing to distribute traffic evenly across servers when it reaches 80% of server capacity.	H	BO-04 BO-01	Ensures system can handle high traffic without failures.
NFR010	The system will provide an intuitive administrative dashboard that reduces the time required for routine maintenance tasks by 25% within 6 months of launch.	M	BO-01 BO-05	Essential for long term scalability and system evolution.
NFR011	The Oracle database and CRM system will be updated quarterly, reducing system downtime by 5%	M	BO-01	Regular maintenance to ensure efficient operation.

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Requirement Identifying Number	Requirement Description	Requirement prioritization (H, M, L)	Traceability	Requirement Notes
	and improving query response times by 15% annually.		BO-05	
NFR012	The system will be compliant with regional data protection laws for customer data.	H	BO-05	Must comply with laws like GDPR and PIPEDA.
NFR013	Privacy measures will be audited quarterly with a compliance report achieving at least 90% adherence to data protection laws like GDPR and PIPEDA.	H	BO-05	Key for maintaining trust and legal compliance.
NFR014	The system will have less than 0.1% downtime during peak traffic every month.	H	BO-01 BO-04	Critical to maintaining operational efficiency during peak times.
NFR015	The system will have full operational functionality during times of high demand.	H	BO-01 BO-04	Ensures no loss of functionality even under heavy traffic.
NFR016	The system will track performance benchmarks on load times of 3-5 seconds and uptimes of 99.9%.	M	BO-01 BO-04	Tracking performance metrics to ensure system reliability.
NFR017	Customer satisfaction will be monitored via post-purchase surveys and NPS, with satisfaction increasing by 10% within 6 months.	M	BO-03	Provides ongoing feedback for system improvement.
NFR018	Geographic order dispersion and order volume will be tracked quarterly, with order volume increasing by 20% in newly expected regions within 12 months.	M	BO-01	Evaluates success based on order distribution and volume, contributing to growth tracking.

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10. Potential solution options (incl "do nothing")

Possible Solution 1

Product Implementation (COTS Platform)

Choose a proper commercial e-commerce solution (e.g., Shopify Plus, Magento, or BigCommerce) to extend services beyond the GTA. This alternative provides a straightforward way to implement solutions with the possibility of custom configurations for order management, payment integration, and mobile compatibility, along with various other options.

1. High-Level Design

The solution outlines the implementation of a commercial off-the-shelf (COTS) e-commerce platform like Shopify Plus, Magento, or BigCommerce to allow for quick deployment out of the GTA. These platforms provide the basic necessary functions for:

- **Order management:** Built-in order tracking, processing, and fulfillment features

- **Payment processing:** Supports multiple payment options, including credit, debit, and potentially PC Optimum rewards.

- **Mobile responsiveness:** User-friendly design that ensures a smooth experience across all devices.

- **Data Flow:** The design encompasses the API links for data synchronization with the already existing Loblyst systems, thus maintaining the consistency of inventory, order tracking, and user profiles.

2. Low-Level Design

The low-level design includes the integration of essential features that are specific to Loblyst's requirements.

- **User Authentication and Sign-In:** Which gives the customers the option to use their PC Optimum to sign in to Loblyst and they can manage their profile easily.

- **Inventory Management and checkout Processing:** With real-time inventory updates and efficient checkout with secure payment options.

- **Order Fulfillment:** Automatically processes orders, provides tracking updates, and connects with shipping services for smooth delivery.

- **PC Optimum Integration:** Applies loyalty points to eligible purchases, making it easy for customers to use their rewards.

3. Impact Analysis

Positive Impacts:

- **Rapid Deployment:** With the help of faster implementation compared to custom developing, Loblyst might successfully penetrate new market in a short period.

- **Enhanced User Experience:** Customer satisfaction and engagement can be improved by Mobile-friendly design and multiple payment options.

- **Scalability:** The platform can handle increased traffic and support multiple locations as Loblyst expands beyond the GTA.

Potential Negative Impacts:

- **Customization Limitations:** Limited ability to fully tailor features to Loblyst's unique needs, as the platform is pre-built.

- **Dependency on Vendor:** Loblyst may rely on the platform provider for system updates, security patches, and new feature releases.

- **Ongoing Costs:** Subscription fees and potential transaction costs increase long-term operational expenses.

4. Out of Scope

The project scope does not include certain elements that need extra development or tools that go beyond the present implementation. These elements include:

- **Advanced Analytics:** External tools for deeper data insights are not covered.

- **Custom Features:** Custom-built features which are specific to Loblyst's business needs.

- **Non-E-Commerce Systems:** Integration with complex ERP systems

- **Offline retail integration:** Combining in-store and online data would require separate development outside of the current deployment.

5. Risk and Mitigation

Key risks include platform limitations in terms of unique needs, vendor reliance for upgrades, issues of data security, and subscription costs. Such risks can only be minimized if there is a careful assessment of the capability of the platforms and the trustworthiness of the vendors. High concern with protection laws related to data such as GDPR and PIPEDA, and the need to budget for long-term costs are major issues to consider for the effective management of regular operational expenses.

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Possible Solution 2

Outsourcing Development & Maintenance

1. High-Level Design

It outlines how the outsourcing option can be done effectively with some high-level design strategies.

- **Strategic Partner Selection:** Conduct specific market research and involve a proven established third-party provider of website design services, order fulfilment, and customer relations.

- **Service Agreement:** Sign a Service Level Agreement (SLA) detailing the terms of performance requirements, expected behaviour and the contract.

- **Integration Plan:** Enumerate the role and function of how the vendor establishes structures and system designs that can link up with the systems of Loblyst to power the latter's e-commerce pipelines and have comfortable data transfer between these platforms and other organisational databases.

- **Performance Monitoring:** To evaluate performance, measures such as the loading rate and the order accuracy rate shall be tracked continuously and can be utilised to provide frequent updates on the KPIs.

2. Low-Level Design

The low-level design of the solution includes the technical aspects and specific components that need to be addressed in the outsourcing solution. Those are detailed below:

- **Security Measures:** To protect customer data, specific measures of security such as data encryption, multi-factor user authentication, and compliance checks must be implemented during the data exchange.

- **Data Integration or scalability:** The system should design such APIs that should allow effective and secure transfer of data between Loblyst and the vendor's systems.

- **Order Processing Workflow:** The vendor shall state and evaluate how orders are placed and what happens in the order processing process on the vendor end.

- **Customer Support Framework:** Evaluate how Loblyst' support channels (e.g., chat, email, phone) should be integrated with the vendor's support system.

- **Website Maintenance Plan:** Create a timeline for content updates, improvement of the website's performance, and solving issues on both sides: internal employees and the vendor.

3. Impact Analysis

The potential benefits and challenges of outsourcing for Loblyst are analysed below:

Positive Impacts

- **Cost Savings:** Outsourcing; the development and maintenance of those services are done internally at lower costs.

- **Focus on Core Business:** Loblyst can shelter other competencies from value chain as fundamental business strategies such as marketing and supply chain.

- **Scalability:** Experiences to expand services as the business expands, and there is no necessity for additional internal structures.

- **Improved Performance:** Take advantage of vendors' help to increase website efficiency and improve customers' service.

Negative Impacts:

- **Dependency on Vendor:** Lack of diversification that comes with relying heavily on the vendor; it may lead to a total stagnation of operations by the organization in case the vendor is unwilling or unable to supply satisfactorily.

- **Data Security Concerns:** Outsourcing brings the possibility of the data breach, which in turn limits compliance with the laws of privacy.

- **Potential for Misalignment:** Lack of organizational culture or weak communication channels may cause a misfit in services being offered

4. Out of Scope

The activities and services that are not part of this outsourcing arrangement are as follows:

- **In-House Marketing:** Never will social media marketing, major advertising, or corporate communication initiatives go beyond Loblyst.

- **Logistics & Supply Chain:** Logistics and supply chain management shall remain a central function as is the case currently; the vendor shall not be involved in this aspect.

- **Non-E-Commerce IT Systems:** Legacy IT systems not directly associated with the e-commerce site, including stores' systems and applications for employees' management, are not considered.

- **Data Ownership:** All customers' and transactions' information will be owned by Loblyst; the vendor will not be entitled to use data for purposes other than offering services.

5. Risk and Mitigation

We have identified the following risks associated with outsourcing and strategies to mitigate them.

- **Vendor Reliability and Non performance**

Mitigation: Before choosing the vendor, conduct thorough research on them and find alternate ways to handle them in case of non -performance. Some clauses need to be added to the SLA.

- **Data Security**

Mitigation: Employ high-standard data security measures like encryption to the endpoint and undertake frequent security check-ups in compliance with the data protection laws.

- **Service Misalignment**

Mitigation: Conduct performance reviews regularly with the vendor with the aid of clear documentation and proper communication channels.

- **Hidden/ Additional Costs**

Mitigation: Some additional costs that might be incurred ought to be addressed in the contract. A contingency reserve budget is to be allocated to handle these unprecedented costs.

- **Customer Experience Impact**

Mitigation: The transition should be made gradually phase by phase to reduce the impact on customers. Allow for feedback and continuous improvement based on user reviews.

Possible Solution 3

Custom Development Solution

The option for custom development is to improve the existing Loblyst e-commerce website, which will allow new features in collaboration with the existing system to give our customers a better experience.

1. High-level design

Goal: The goal is to develop a seamless checkout process for new and existing Loblyst customers, which will be designed in line with user requirements to ensure needs are met.

- Create unique functionalities like customized product suggestions, smooth payment procedures, and improved user interaction explicitly designed for client requirements.

- Simplify the user interface (UI) in front-end development to enhance the shopping experience.

- Improve the backend to include a better database structure for quicker product searches and more secure payment gateways.

- Linking other fulfilment centers, logistics partners and financial institutions.

- Implementing IT frameworks that ensure the backend database is secure.

2. Low-Level design

- Integrate artificial intelligence to help promote new products, sales and new locations when available.

- Provide multiple payment options with strong security features to authenticate payment and user.

- Customer profiles should be customized so they can view previous purchases, track orders and suggestions for new products using the algorithm of their experience on the site

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Stages of Growth:

Phase 1: involves gathering requirements and creating an initial design.

Phase 2: Creation and first round of testing.

Phase 3: involves thorough user acceptance testing (UAT) and deployment.

3. Impact Analysis

Business Benefits

- Increased customer interaction on the site through personalized experience.

- Visitor-to-customer conversion rate will increase due to a simpler experience while shopping.

Challenges

- Cost

- Extended Timelines

- Post-deployment support

4. Out of Scope.

- Unnecessary additions such as specialized marketing tools are unnecessary in the beginning stage.

- Migration to a cloud platform, unless explicitly required as an integrated necessity.

5. Risk And Mitigation.

- **Timeline:** Adopting the Agile approach, a clear roadmap of project milestones will mitigate delays in timelines.

- **Exceeded Budget:** Strict project scope management will ensure the expense aligns with the budget.

- **Scope Creep:** Clear-defined goals and regular communication will mitigate any form of scope creep.

- **Mitigation plan:** Regular review sessions will be held to keep stakeholders updated and ensure everything stays aligned with the project plan.

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Possible Solution 4

Do Nothing Method

Inert strategy is the benchmark against the other choices since no changes or enhancements are made to the current Loblyst e-commerce platform. As such, it offers an answer to the different options, telling what may happen if nothing is done to change the current system.

1. High-Level Design

- **Current State:** This design assumes that the platform shall remain this way, and no more resources shall be invested in performance, scalability, or even the user experience.

- **Fundamental Components:** Customer identification, a straightforward kind of product discovery, where options include searching, purchasing, payment, and order delivery, and a minimal connection with the PC Optimum rewards program.

- **System Performance Expected:** Lacks current infrastructure, is expected to run regularly and less often faster, may slow down when usage is high, and may need help with the scalability of traffic load.

2. Low-Level Design

- **User Authentication:** The accounts can be reset using basic password recovery hacking techniques, which usually only require one form of identification. It lacked the features such as two-factor authentication and improved security.

- **Database Management:** Set an Oracle-based system for the database and homegrown CRM for customer records; no extra place for expansion.

- **Customer Experience:** Lack of mobile responsiveness, slow checkout section. I am still struggling to ensure the synchronizing of the PC Optimum points at the time of payment.

- **Order Fulfillment:** customers still expect overnight logistics and delivery processes to remain the same. It can only process orders mainly with the GTA and has little utility in terms of client notification and order status tracking.

- **Customer Support:** No application for instant support, such as ticket support and/or live chat; thus, users may only contact through email and phone.

3. Impact Analysis

- **Performance Impact:** There is no change in load time or response time; they will most likely continue to get slow performance as soon as the site gains much traffic.

- **Scalability Impact:** Being unable to manage the expansion plan outside the GTA easily and being restricted in terms of volume orders.

- **Customer Satisfaction Impact:** Performance issues that customers constantly complain about, incorporation of PC Optimum that needs to be better incorporated, and the absence of mobile optimization are likely to reduce the satisfaction and the number of customers.

- **Security Impact:** There's more risk since there is no two-factor authentication and no rigorously encrypted secure customer information.

4. Out of Scope

- **Core Functionality Enhancement:** They must strengthen many common attributes of most user-friendly online shopping websites, such as the actual feel, check-out process, and stock.

- **Scaling**: Any increase of operation volume beyond GTA that maintains, increases, or expands warehousing, server, or logistics requirements is prohibited.

- **Integration of New Systems:** Built-in with no third-party tool compatibility, improved PC Optimum loyalty program, and more payment gateways.

- **Marketing and Customer Support Improvements**: It remains the same with customer support channels, marketing communications, and any other strategy to increase capture.

5. Risk and Mitigation

- **Reduced Customers' Satisfaction**

Mitigation: Once again, it shall be accepted that there will be an effect on customer satisfaction, which may result in customer attrition and, consequently, low customer loyalty.

- **Scalability Limitations**

Mitigation: Set up a contingency should there be slow operation in processing orders or organizing the stocks during specific peak periods within the GTA.

- **Security Vulnerabilities**

Mitigation: Some requirements include monitoring the message and keeping minimal security standards for the prevention of data leaks or theft.

- **Competitive Disadvantage**

Mitigation: Understand that competitors with a more robust platform may take market share recognition of emerging markets to come and design a plan for enhancements that could be required at some point down the line.

This "Do Nothing" option gives the customers/citizens the potential negative consequences of staying on the same course and, therefore, provides a basis for comparison of improvement options to be implemented.

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11. Evaluation criteria

Based on the solution design report and project details, here is a refined set of evaluation criteria to guide the selection of the most suitable solution for Loblyst's e-commerce platform:

- **Performance and Reliability**: Evaluate how well each solution meets the platform's performance goals, including load times of less than 3-5 seconds, high responsiveness, and consistent uptime (99.9%) under increased traffic demands.

- **Scalability**: Assess the solution's capacity to support Loblyst's expansion beyond the GTA, with the flexibility to handle more users, increased traffic, and additional product and service offerings as the company grows.

- **User Experience (UX)**: Review each solution's potential to enhance user interaction through responsive design, intuitive navigation, and a seamless checkout process, which will improve the conversion rate and reduce cart abandonment.

- **Cost Effectiveness**: Examine the initial and ongoing costs, including development, subscription fees, maintenance, and potential hidden expenses. The chosen solution should fit within Loblyst's budget constraints while delivering a reasonable ROI.

- **Security and Compliance**: Ensure that the solution complies with data protection regulations such as GDPR and PIPEDA and provides robust security features (e.g., data encryption, two-factor authentication) to safeguard customer information.

- **Integration Capabilities**: Evaluate each option's ability to integrate smoothly with Loblyst's existing systems, including PC Optimum for loyalty points, inventory management, and multiple payment gateways.

- **Time to Market**: Consider the estimated implementation timeline to ensure the platform is operational promptly, enabling Loblyst to reach new customers and capitalize on market opportunities sooner.

- **Maintenance and Vendor Support**: Analyse the ongoing support and maintenance needs of each solution, including vendor support if applicable, to ensure long-term stability and performance.

- **Customization and Flexibility**: Assess each solution's ability to accommodate Loblyst's unique business requirements, including custom features and future modifications as business needs evolve.

- **Customer Satisfaction Impact**: Measure the potential impact on customer satisfaction, with a focus on providing a seamless, reliable, and secure shopping experience that aligns with Loblyst's brand goals.

12. Solution Recommendation (the "why")

Based on thorough evaluation, the recommendation for the Loblyst e-commerce platform project is Product Implementation (COTS Platform). The recommendation is based on the following:

Higher ROI: Product Implementation gives the highest ROI at 52.67%, making it the most financially viable option. This is way higher compared to other alternatives such as custom development at 49.25% or outsourcing at 45.03% (Team 4, 2024).

Rapid Deployment: COTS platforms, such as Shopify Plus or Magento, offer pre-built functionalities, allowing quicker implementation compared to custom solutions. This enables Loblyst to address its current challenges and capture new markets faster (Brahmachary, 2018).

Scalability: These platforms are designed to handle increased traffic and geographic expansion seamlessly. Features like mobile responsiveness and multiple payment gateways ensure Loblyst's platform grows alongside its operations (Loblaw Companies Limited, 2023).
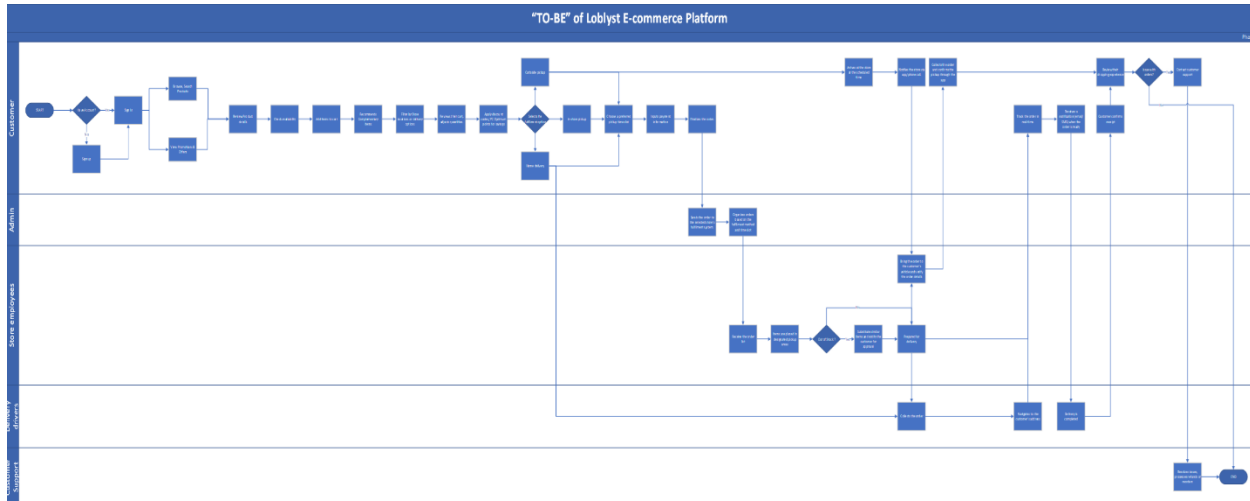
Improved User Experience: The website will tackle user pain points directly through the incorporation of loyalty program integrations, personalized recommendations, and seamless checkout, thus improving user satisfaction and reducing cart abandonment rates (pcoptimum, n.d.).

Risk Mitigation: Established platforms come with robust vendor support for updates, security patches, and compliance with regulations such as GDPR and PIPEDA, minimizing operational risks (News, 2024).

Other options involve a host of challenges ranging from high costs, extended timelines to dependency on third-party vendors. The "do nothing" option presents the risk that Loblyst will fall behind their competitors. COTS balances cost, speed, and scalability best, befitting the strategic intents of Loblyst perfectly.

13. To-be process flows (Future State)

The As-is process flow for Loblyst's e-commerce platform outlines the customer's current journey when using the platform. It covers steps from signing in, browsing, and selecting products to choosing a fulfillment option like pickup or delivery. The flow also includes interactions with store employees, delivery drivers, and customer support for order fulfillment and issue resolution (Loblaws, 2024, p. 1).

Explanation of Actors and Their Roles:

- **Customer**: Initiates the journey by browsing, placing orders, and engaging with the fulfilment and delivery process.

- **Admin**: Manages the digital experience, processes order, handles payments, and communicates with customers.

- **Store Employees**: Fulfil orders, handle substitutions, and assist with curb side pickup or in-store pickups.

- **Fulfilment System**: Coordinates order processing, stock checks, and fulfilment preparation.

- **Delivery Drivers**: Transport and deliver orders to customers.

- **Customer Support**: Addresses post-purchase inquiries, handles issues, and provides refunds or replacements if necessary.

14. Implementation/deployment Strategy/approach

To ensure a smooth rollout of the commercial off-the-shelf (COTS) e-commerce platform, the following high-level strategy will be implemented. The strategy will be developed to mitigate risk, ensure business continuity, and engage appropriate stakeholders throughout.

Deployment Approach

Phased Approach

- Implementation Rollout will be done in phases to avoid risk and disruptions to the existing operations.

- The first implementation will be for a pilot market outside the GTA to gauge overall performance and bug issues before full rollout.

- Further rollouts shall be in phases, each phase expanding into new regions as feedback and performance metrics are recorded (Brahmachary, 2018, p. 1).

Migration Strategy

I.   **Pilot Phase**

- Implementing the platform for a handful of users and SKUs

- Monitoring system performance and user feedback coupled with order processing accuracy

II. **Full Rollout**

- Staged deployment across all target geographies.

- Onboard additional product lines and whole PC Optimum functionality in stages.

III. **Data Migration**

- Migrate all required data (e.g., product catalogs, inventory, user accounts) into phases.

- Verify integrity at each phase.

Backout Strategy

Rollback Plan:

- Maintain existing Loblyst systems in parallel through the initial phases.

- In the case of showstoppers, revert operations to the existing system while problems are worked through in the COTS platform.

Contingency Plan:

- Backup all data migrated before switching.

- There should be clear logs of changes made for easy roll-back in case the need arises.

Client Involvement and Training

Stakeholder Engagement:

- Meet with Loblyst's in-house IT and Business teams to ensure the solution fits the overall aims of the organization

- Feedback loops and updates would be in place at every deployment stage.

Training Methodology:

- Train-the-Trainer model: Train a few of Loblyst's in-house IT and operational employees who would, in turn, give the knowledge to the end users.

- Users' manuals, quick-start guides, and continuing support that are available both during and after deployment

End User Onboarding:

- Online workshops and web-based training to help the employees as well as customers adapt themselves to the new system.

Key Considerations

- **Testing of the System:**

Stress tests each phase of the deployment, including functional, performance, and security testing.

- **Compliance and Security:**

The system shall meet the standards of PIPEDA and GDPR.

Deploy high-grade data encryption strategies and security measures for protecting sensitive customers' information.

- **Customer Support Plan:**

To ensure a seamless transition, establish a round-the-clock customer support desk to address any technical or operational issues.

- **Change Management:**

Communicate changes clearly to internal teams and customers, highlighting benefits and setting expectations for the transition.

This phased and risk-managed approach for Loblyst will help the company deploy the COTS platform successfully. This will enable the company to use e-commerce capabilities and spread its market reach beyond GTA. The focus here would be on business continuity; stakeholder involvement; user satisfaction to support the long-term goal.

15. Transition Requirements

A properly developed transition plan will ensure that the new COTS e-commerce platform is smoothly integrated with existing systems, with minimum operational disruption and seamless user experience. The following section details the major requirements of transition, including assumptions, organization, work to be performed, and the transition schedule.

Assumptions

- The new platform will be integrated with the existing back-end systems, inventory, and order management amongst others (Collins, 2023).
- For the initial rollout phases, the existing platform will still be up and running to ensure there are no service disruptions (Grocerybusiness, 2023).
- Accurate data migration with no loss or corruption of existing customer and transaction data would be carried out (Toneguzzi, 2022).

Organization

The transition involves several internal and external stakeholders to ensure that it is well implemented:

- **IT Team:** Technical implementation will be done by them. They will also do data migration and system integration.
- **Business Analysts and Project Managers:** Ensuring project management at each milestone and communication with stakeholders.
- **External Vendors:** To assist in software integrations and troubleshooting during a transition period (Kestenbaum, 2021).
- **End-users (Staff & Customers):** Their training and support will be engaged in the new platform to ensure its effective usage.

Work Required

The main work required to support the products/services developed from this project includes:

- **System Integration:** Ensuring smooth integration between the new e-commerce platform and existing systems (Toneguzzi, 2022).
- **Data Migration:** Migrating product data, customer information, and order histories while maintaining data integrity.
- **Stakeholder Communication:** Ensuring all stakeholders, from internal teams to external vendors, are regularly updated on the project's progress and key developments (Kestenbaum, 2021).
- **Training:** Providing training sessions for the internal staff as well as online resources to the customers to get accustomed to the new system(Collins, 2023).
- **Risk Management:** Strategies for a rollback in case of disruption, and contingency planning for challenges that may arise during deployment(Grocery business, 2023).

Schedule

Deployment will be done in stages to minimize risk and ensure a smooth transition:

I. **Phase 1 -** Pilot Rollout (Month 1): A small-scale implementation outside the GTA will allow for testing, gathering feedback, and adjusting as necessary.

II. **Phase 2 -** Full Rollout (Month 2-3): The platform will be rolled out to additional regions, incorporating enhancements based on pilot feedback (Toneguzzi, 2022).

III. **Phase 3 -** Post-Deployment Support (Month 4 onwards): Ongoing monitoring and continuous customer support to address technical or operational issues.

16. Test Strategy

Revision History

Date	Version	Author	Description
2024-11-12	1.0	Adhil	Initial draft of the test strategy document.
2024-11-14	1.1	Janvi	Updated with detailed test tools and approach.
2024-11-18	1.2	Ota	Incorporated feedback from QA lead and reviewers.

Scope

 The testing strategy will make sure that the selected COTS platform (for example, Shopify Plus, Magento, or BigCommerce) satisfies the functional and non-functional requirements of Loblyst. Some of the important aspects are verifying the order management, payment processing, and PC Optimum integration for smooth operation. This disciplined method makes sure the platform not only meets the business goals but also provides a delightful experience for the users.

- **Reviewers**: The Business Team, Development Team, and Project Sponsors will give final approval to the project and confirm that it is ready for deployment.

- **Approvers**: The Business Team, Development Team, and Project Sponsors will be the ones who give the final project approval and confirm that the project is ready for deployment.

- **Testing Timeline**: Testing will involve important steps like unit testing, integration testing, system testing, and user acceptance testing (UAT). Each phase will have clear entry and exit criteria.

Test Approach

 The testing approach refers to an organized process that follows the testing of the platform's operational efficiency and performance.

1. Testing Levels:

- **Unit Testing**: Focused on specific modules, such as PC Optimum login and payment system integration.

- **Integration Testing**: Verifying flow of data between the modules (e.g., API connections for inventory updates).

- **System Testing**: Thorough testing of all parts of the platform to detect errors and problems and to ensure proper operation and high performance.

- **User Acceptance Testing (UAT)**: Engaging the end-users so that they can test the platform against the business requirements.

2. Testing Types:

- **Functional Testing**: To test that the essential functions, such as order management, payment processing, and checkout, are working correctly.

- **Load Testing:** To verify that the platform can cope with the highest traffic anticipated at peak hours.

- **Security Testing**: To validate data encryption, secure payment options, and compliance with GDPR/PIPEDA.

- **Regression Testing**: Checks existing features over and over to make sure that the recent updates or changes do not interrupt the platform's functionality.

3. Defect Management:

- Defects will be tracked in a common tool (like JIRA) and divided into categories according to their level of importance.

- All defects will be triaged to assess their impact and then retested once they are fixed.

- Finding out about defects and bugs on the site is part of the process to make sure that it is made user-friendly, and all the elements of its operation are functioning properly. The defect log will be distributed to the team to keep the entire process visible and track the defects.

4. Signoffs:

- **Unit Testing Signoff**: Provided by the Development Team after the individual module testing has been successfully completed.

- **Integration Testing Signoff**: It is allowed by the Integration Lead when all the modules that are interconnected show smooth performance.

- **UAT Signoff**: Verified by business stakeholders and project sponsors so that the platform is ready for deployment.

Test Environment

1. Environment Setup:

- A staging area that resembles the production environment with the same kind of data to make sure that the conditions are accurate for testing.

- Develop backup and restore procedures for test data in case of failures during re-tests.

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2. Resources:

- Test devices for mobile and desktop responsiveness testing.

- Access to necessary third-party tools (e.g., for API validation).

Testing Tools

- **Automation Tools**: Selenium for functional and regression testing.

- **Test Management Tools**: JIRA for defect tracking and test progress reporting.

- **Load Testing Tools**: Apache JMeter to simulate high traffic scenarios

Release Control

- All releases will follow a version control system to ensure traceability.

- A separate test release plan will verify platform modifications or updates for each iteration.

- Documentation of test results will be maintained for all releases.

Risk Analysis

1. Risks:

- **Platform Limitations**: There is a chance that the platform will not completely satisfy Loblyst's specific needs.

- **Vendor Dependency**: Any delay in the updates or patches provided by the vendor could affect the project timeline.

- **Data Security Concerns:** Customer data stored on external services not owned by the company must follow highly secure compliance requirement.

- **Performance Issues**: The platform might fail under heavy traffic conditions.

2. Mitigation:

- Perform integration testing early to find out compatibility problems.

- Perform rigorous load testing before go-live.

- Set up a communication plan with the vendor to deal with the delays as fast as possible.

Review and Approvals

- The QA Leads, Business Analysts, and Development Team will go through the test plans, cases, and results to ensure they are in line with the project goals.

- The Business Team and Project Sponsors will have the responsibility of issuing the last sign-off that will be the confirmation of the platform being ready for deployment and having all the mandatory requirements

- Any changes in the testing strategy will be documented, versioned, and approved by the stakeholders to stay in line with the project objectives.

This strategy ensures that we test from all angles, which means the COTS platform will meet Loblyst's business needs and it will also be able to handle potential risks as well as deliver a solid user-friendly e-commerce solution.

17. Database design

The entity relationship diagram for the Loblyst database is shown below using the Microsoft Visio Tool.
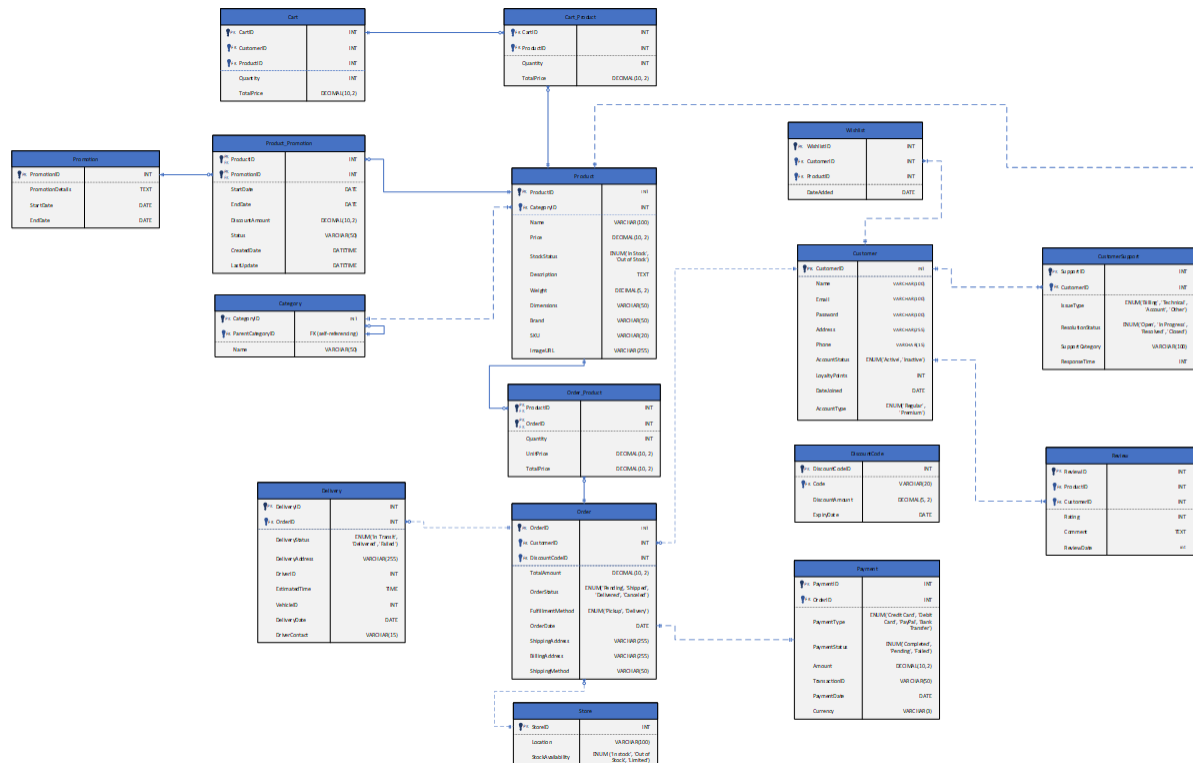
The Loblyst E-commerce platform's database is designed to be in the Third Normal Form (3NF), ensuring data is structured to reduce redundancy and improve data integrity. Each table is organized to ensure that non-key attributes are only dependent on primary keys, thereby eliminating transitive dependencies. This structure allows for efficient data retrieval and modification, minimizing anomalies during data updates. As a result, the database is optimized for scalability and consistency, essential for a robust and high-performance e-commerce system.

18. Risks Log

This Risk Log outlines the key project-specific risks for Loblyst's Product (COTS Platform) implementation. Each one of the identified risks has been subjected to careful evaluation regarding its potential impact and probability of occurrence so that the approach towards risk management can be proactive. Besides, triggers for each of the risks are highlighted to enable early detection, and mitigation strategies have been defined to minimize disruptions. This structured approach has the goal of supporting an effective implementation process in which the chosen solution will meet the operational requirements and long-term goals of Loblyst.

Solution Option	Risk Description	Impact of the Risk	Probability of Risk Occurring	Owner	Triggers	Mitigation
Product Implementation	Limited Customization Capabilities	High	Medium	Project Manager	Feedback from users about unmet functional requirements	Select a platform with extensive API support; use middleware to address gaps.
Product Implementation	Vendors Dependence for Updates and Security	High	Medium	IT Security team	Delays in updates or patch release, security audit results	Evaluate vendor SLAs for update timelines; implement supplementary security tools
Product Implementation	Data Privacy Compliance	High	Medium	Compliance team	Legal reviews highlight non-compliance, customer complaints	Conduct a compliance assessment; use encryption and obtain customer consent; consult with legal experts.
Product Implementation	Scalability Challenges	Medium	High	Development team	Increase in traffic leads to slows load times or errors	Perform load testing; choose a platform with scalability options; integrate a CDN.
Product Implementation	Subscription and Long-term Operational Costs	High	Medium	Finance team	Monthly cost reviews show rising expenses	Conduct a TCO analysis; negotiate pricing discounts; eliminate unused
Product Implementation	Platform Integration Issues with Existing Systems	High	Medium	Integration team	Errors in data synchronization inventory mismatches	Test API Integrations in a staging environment; hire experienced developers; maintain fallback mechanisms for critical operations.

Conclusion

With proper risk identification and mitigation, Loblyst would be equally prepared for every kind of mishap that may be encountered during the Product implementation (COTS Platform). In-depth mitigation strategies present steps to avoid or limit disruptions so that the project stays on course and delivers the intended benefits. Proactive risk management further reinforces the ability of Loblyst to achieve such implementation, which would indeed meet both immediate needs and future scalability requirements.

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19. ROI- Return On Investment

19.1 Product Implementation (COTS Platform)

This product solution requires a proper commercial e-commerce solution (e.g., Shopify Plus, Magento, or BigCommerce) to enable the company to extend services beyond the GTA. This alternative provides an easy way to implement solutions with custom configurations for order management, payment integration, mobile compatibility, and various other options. We are assuming that Waterloo, Cambridge and Kitchener will add about 3.5% to the annual revenue based on the market size, thereby giving a return on investment of 52.67%

Assumptions:	PRODUCT IMPLEMENTATION
Revenue Contribution:	**Our assumption is that Waterloo, Cambridge and Kitchener will add about 3.5% to the annual revenue based on the market size**
Gross Margin	We assume the gross margin will also be by 3.5%
Projected Impact	
Current Sales	$58,345
Project sales increase	Current Sales * 3.5%
	2,042.08
Projected Sales	**$60,387**

PRODUCT IMPLEMENTATION	
Year	**2023 ($m)**
Sales	60,387
Gross Margin	20,834
Gross Margin %	34.50%
ROI	
COGS:	
SALES	60,387
Less:	
Gross Margin	(20,833.5)
Cost of Good Sold	**39,554**
ROI	(GROSS/COGS)*100
ROI	**52.67%**

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19.2 Outsourcing Development & Maintenance

The outsourcing development & maintenance solution majorly requires outsourcing with some high-level design strategy. We are assuming that Waterloo, Cambridge and Kitchener will add about 0.5% to the annual revenue based on the market size, thereby giving a return on investment of 45.03%.

Assumptions:	Outsourcing Development & Maintenance
Revenue Contribution:	**Our assumption is that Waterloo, Cambridge and Kitchener will add about 0.5% to the annual revenue based on the market size**
Gross Margin	We assume the gross margin will also be by 0.5%
Projected Impact	
Current Sales	$58,345
Project sales increase	Current Sales * 3.5%
	291.73
Projected Sales	**$58,637**

Outsourcing Development & Maintenance	
Year	**2023 ($m)**
Sales	58,637
Gross Margin	18,207
Gross Margin %	31.05%
ROI	
COGS:	
SALES	58,637
Less:	
Gross Margin	(18,206.7)
Cost of Good Sold	**40,430**
ROI	(GROSS/COGS)*100
ROI	**45.03%**

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19.3 Custom Development Solution

The custom development solution is to improve the existing Loblyst e-commerce website to allow new features to collaborate with the existing system. We are assuming that Waterloo, Cambridge and Kitchener will add about 1.5% to the annual revenue based on the market size, thereby giving a return on investment of 49.25%

Assumptions:	Custom Development Solution
Revenue Contribution:	**Our assumption is that Waterloo, Cambridge and Kitchner will add about 1.5% to the annual revenue based on the market size**
Gross Margin	We assume the gross margin will also be by 1.5%
Projected Impact	
Current Sales	$58,345
Project sales increase	Current Sales * 3.5%
	875.18
Projected Sales	**$59,220**

Custom Development Solution	
Year	**2023 ($m)**
Sales	59,220
Gross Margin	19,543
Gross Margin %	33.00%
ROI	
COGS:	
SALES	59,220
Less:	
Gross Margin	(19,542.7)
Cost of Good Sold	**39,678**
ROI	(GROSS/COGS)*100
ROI	**49.25%**

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19.4 Do Nothing (Current State)

This solution describes the revenue generated by the current Loblyst e-commerce platform as it stands today with the existing flaws.

DO NOTHING SOLUTION		
Year	**2023 ($m)**	**2022 ($m)**
Revenue	59,529	56,504
Revenue Growth	5.40%	6.30%
Sales	58,345	53,492
Gross Margin	18,083	12,165
Gross Margin %	31.00%	30.90%
Total Asset Approximately	39,000	38,200
ROI		
COGS:		
SALES	58,345	53,492
Less:		
Gross Margin	(18,083)	(12,165)
Cost of Good Sold	**40,262**	**41,327**
ROI	(GROSS/COGS)*100	(GROSS/COGS)*100
ROI	**44.91%**	**29.44%**

Based on the four options, Product Implementation (COTS Platform) gives the highest ROI of 54 %, which means the gross margin from this option is significantly related to the cost, indicating a healthy level of profitability compared to the rest of the options. This suggests that the resources Loblyst will employ in incorporating the three other regions and what it currently has will generate a return of 54% more than it spent.

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