CONESTOGA

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Assignment – 8

Team	4 – Loblaws (alias used - Loblyst)
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Section	08
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1. 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:

1. **Performance and Reliability [20]:** 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.
2. **Scalability [15]:** 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.
3. **User Experience (UX) [20]:** Evaluate how each solution can improve user engagement with features like responsive design, easy navigation, and a streamlined checkout process, aiming to boost conversion rates and minimize cart abandonment.
4. **Cost Effectiveness [15]:** 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.
5. **Security and Compliance [10]:** 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.
6. **Integration Capabilities [10]:** 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.
7. **Time to Market [5]:** Consider the estimated implementation timeline to ensure the platform is operational promptly, enabling Loblyst to reach new customers and capitalize on market opportunities sooner.
8. **Maintenance and Vendor Support [5]:** Analyse the ongoing support and maintenance needs of each solution, including vendor support if applicable, to ensure long-term stability and performance.
9. **Customization and Flexibility [10]:** Assess each solution's ability to accommodate Loblyst's unique business requirements, including custom features and future modifications as business needs evolve.
10. **Customer Satisfaction Impact [10]:** 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.

1.1 Comparative table

Here's a comparative table for all four solutions (Product Implementation, Outsourcing, Custom Development, Do Nothing) using the evaluation criteria, with Product Implementation selected as the best option.

Criteria	Product Implementation	Outsourcing	Custom Development	Do Nothing
Performance and Reliability	High performance with built-in optimization for e-commerce, ensuring load times of under 3 seconds.	Moderate reliability, depends on vendor's system and performance consistency.	High performance if developed effectively, but longer time to achieve and optimize.	Low; current system performance remains sluggish and unreliable.
Scalability	Highly scalable with cloud integration options, ideal for expansion beyond GTA.	Scalable depending on vendor capabilities, though integration may be limited by third-party service limitations.	Highly scalable, but more complex and costly to design for future growth.	Very limited; cannot support expansion beyond current capabilities.
User Experience (UX)	Improved UX with mobile-responsive design, faster checkout, and customizable templates.	UX improvements possible through vendor customization, but limited flexibility and control.	Customizable UX tailored to Loblyst's needs, but high effort and cost for effective results.	Low; current UX limitations would persist, leading to customer dissatisfaction.
Cost Effectiveness	Cost-effective with a subscription-based model and predictable expenses.	Potentially lower upfront cost, but long-term vendor fees may accumulate and increase operational costs.	High initial and maintenance costs due to custom development; ROI may take longer.	No new costs, but potential for revenue loss due to inadequate service quality.
Security and Compliance	Strong security and compliance features built-in, meeting GDPR and PIPEDA standards.	Depends on vendor's security measures, potential risk with data handling by third-party.	High security can be customized, though requires significant resources to implement fully.	Low; current security vulnerabilities would remain unaddressed.
Integration Capabilities	Supports integration with PC Optimum, payment gateways, and inventory management through APIs.	Limited control over integrations, dependent on vendor's capability to meet Loblyst's specific needs.	Customizable integration options, allowing close alignment with Loblyst's existing systems, but requires more development.	Limited integration options; existing PC Optimum integration issues persist.
Time to Market	Fast deployment due to pre-built platform, allowing Loblyst to launch quickly and capture new markets.	Moderate; dependent on vendor's project timeline, onboarding, and SLA.	Longer time due to extensive custom development, delaying entry to new markets.	Immediate, but no improvements mean missed opportunities for customer expansion.
Maintenance and Support	Regular updates, maintenance, and vendor support	Vendor-managed support, though dependence on third-	In-house support required, demanding	Minimal maintenance, but current support

Criteria	Product Implementation	Outsourcing	Custom Development	Do Nothing
	included in the subscription model.	party responsiveness can affect stability.	additional resources for long-term stability.	limitations continue to impact performance.
Customization and Flexibility	Moderately customizable with templates and add-ons, fitting most of Loblyst's unique needs.	Limited flexibility; vendor's customization offerings may not fully align with Loblyst's requirements.	Highly flexible, fully tailored to Loblyst's specifications, but high costs for custom features.	None; current platform cannot be customized for improved performance.
Customer Satisfaction Impact	Significant; improved UX, security, and reliability enhance overall satisfaction, boosting brand value.	Moderate; improvements possible but dependent on vendor's UX focus and support quality.	High potential for satisfaction due to tailored features, though risk of delayed satisfaction if development is prolonged.	Low; current system issues persist, leading to reduced customer satisfaction.

Criteria	Weight	1- Product Implementation	1- Weighted Score	2- Outsourcing	3- Weighted Score	3- Custom Development	4- Weighted Score	4- Do Nothing	4- Weighted Score
Performance and Reliability	20	90	1800	70	1400	85	1700	40	800
Scalability	15	90	1350	60	900	80	1200	30	450
User Experience (UX)	20	85	1700	70	1400	90	1800	50	1000
Cost Effectiveness	15	80	1200	70	1050	60	900	95	1425
Security and Compliance	10	85	850	65	650	80	800	40	400
Integration Capabilities	10	90	900	70	700	85	850	30	300
Time to Market	5	95	475	70	350	40	200	100	500
Maintenance and Support	5	90	450	60	300	70	350	50	250
Customization and Flexibility	10	80	800	60	600	90	900	30	300
Customer Satisfaction Impact	10	90	900	70	700	85	850	40	400
TOTAL			**10425**		**8050**		**9550**		**5825**

Selected Solution: Product Implementation

Justification: Product Implementation provides a balance of scalability, performance, and cost-effectiveness, enabling Loblyst to quickly enhance its platform, improve customer experience, and expand beyond GTA without high upfront costs.

2. Return On Investment

2.1 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**

2.2 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**

2.3 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**

2.4 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 relative 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.

3. Risk Log

Introduction

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.

4. Implementation Strategy (COTS Platform)

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.

4.1 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).

4.2 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.

4.3 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.

4.4 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.

4.5 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.

5. Test Strategy

5.0 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.

5.1 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.

5.2 Test Approach

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

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.

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.

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.

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.

5.3 Test Environment

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.

Resources:

- Test devices for mobile and desktop responsiveness testing.
- Access to necessary third-party tools (e.g., for API validation).

5.4 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

5.5 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.

5.6 Risk Analysis

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

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.

5.7 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.

6. References

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