**Online Multivendor Shopping Platform**

System Request and Feasibility Study / Planning Phase   
(Homework No.1B)

Project team: Team 09

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Submitted in partial fulfillment of the requirements of the INFT 2303: Systems Analysis and Design course project

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| --- | --- |
| GitHub repository | https://github.com/ADA-SITE-INFT2303-2023-Spring/sys-dev-project-team-09 |
| 02/27/2023 | Everything is finalized, we only need to review and if needed make updates. |
| 02/17/2023 | Initial draft |
| 0?/?/2023 | System Request |

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| --- | --- | --- |
| Team member | Contribution to this homework (NOT the project) | Estimated % |
| Manaf Aghazada | Definitions, Overall Description, User Characteristics. | 25% |
| Rauf Rasulzada | Definitions, Product Functions, Feasibility Analysis, References. | 25% |
| Sabina Veyisli | Introduction, Definitions, Product Perspective, Feasibility Analysis, References. | 25% |
| Zaur Khudiev | Definitions, Constraints, Assumptions and Dependencies, References. | 25% |

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1. **Introduction**

This is part of the System Proposal for a hypothetical project Online Multivendor Sales Platform submitted for partial fulfillment of the requirements of the Systems Analysis and Design course in the School of Information Technologies and Engineering at ADA University, Baku, Azerbaijan.

The chosen project is the initiation of Azerbaijan's Online Multivendor Sales Platform, which intends to provide residents of the nation with an easy and dependable way to shop online. The project was chosen by the team because of its potential to strengthen the regional economy, its size and scope, and its benefits for both customers and vendors.

The specific System Request Statements are as follows:

* Expand Azerbaijan's online shopping access.
* Time reduction, financial problems
* Create a platform for Azerbaijani consumers and sellers to transact online business.
* By encouraging trade, Azerbaijan can increase its economic value.

The decision to choose this project over all others was probably influenced by several factors. Some of these elements:

**Project scope:** This project intends to establish an end-to-end online retail platform in a nation with limited services.

**Economic value:** By promoting local manufacturing and trade, the initiative has the potential to increase the country's economic value. This might have a positive effect on both the national economy and the incomes of specific business employees.

**Risk:** The Online Multivendor Sales Platform system was thought to have a considerably lower risk level than the other project options. The team was worried that a parking solution could be more technically challenging and that an online healthcare system might run into regulatory issues.

**Impact Scope:** By providing an online purchasing platform, the Online Multivendor Sales Platform system has the potential to significantly impact Azerbaijan's population, whereas the other project options may only have a little influence.

Overall, it's likely that the project was chosen because it has the potential to meet a country's needs, spur economic expansion, improve people's lives, and be a financially feasible and wise investment.

**Definitions**

|  |  |
| --- | --- |
| Term | Definition |
| Plan subscription | The service offers subscriptions to support the vendors to set up their own businesses easily. |
| FAQs | Abbreviation for frequently asked questions. |
| User manual  Feasible investment  Scope  Impact Scope  API  Survey  User interface | A document that helps users to understand the system, service, or product (simply, instructions).  Feasible investment refers to an investment opportunity that is considered practical, realistic, and achievable.  Refers to the boundaries/ limits of a system, which defines what is included and excluded from the system.  Impact scope describes the potential results or effects that a system change proposal may have.  Application Programming Interface enables applications to communicate with each other.  a general view, examination, or description of someone or something  the means by which the user and a computer system interact, in  particular the use of input devices and software |

1. **Overall Description**

Based on the raw individual System Request Statement for the selected project, in this subsection:

* Our system will be produced by Online Multivendor Sales Platform.
* The Online Multivendor Sales Platform system is an online shopping platform that is designed to increase people’s confidence in online shopping in Azerbaijan and it allows vendors and customers to transact online. On the system, both customers and vendors register for their category to get access to special functions such that vendors can list their products, on the other hand, customers can browse and purchase products online. Order management, payment processing, and tracking of order fulfillment will all be handled by the system. Furthermore, customer support, including email, phone calls, and live chat services will be provided to make better customer-vendor relations. In general, the main goal of the system is to provide both customers and vendors with a thorough online shopping experience in Azerbaijan.
* Our objective is to establish a reliable, practical, secure, and pleasurable purchasing experience for customers to gain their confidence in our platform. As a result, our platform will generate more buzz and draw in more users, which will lead to more sales. Also, as most of the products listed on the platform are local goods, production will rise as a result. Thus, consumers from all across the nation will be able to purchase the goods they need, which will significantly boost the nation's economy. As you can see, not only will the profit of customers, vendors, and us alter drastically, but also the profit of the entire nation.
* Business need: The Online Multivendor Sales Platform project aims to provide a complete e-commerce platform in Azerbaijan, which currently lacks such services. Because of the unavailability of such services, customers and vendors cannot take advantage of online transactions, which restricts economic progress.
* Business requirements: Product management, order management, search capabilities, product details and images, cart and checkout, payment processing, customer service, vendor management, advertising, marketing, reporting, analysis, feedback management, customer account management, privacy, and security—all must be supported by the Online Multivendor Sales Platform system.
* Business value: The Online Multivendor Sales Platform system can significantly improve Azerbaijan's economy by encouraging economic cooperation and manufacturing, creating new employment opportunities, and increasing the incomes of certain business personnel. By providing utilization of an extensive online shopping platform, which can greatly eliminate time and financial limits for customers and vendors, the system can also boost the national economy.
* Special issues or constraints: To guarantee that every transaction corresponds with appropriate laws and regulations, the Online Multivendor Sales Platform project must perform under certain legal and regulatory frameworks. Strong data protection measures must also be included in the system to guarantee the security and privacy of all user data. Finally, for the project to provide the best value to all stakeholders, it must be financially feasible and cost-effective.

**Product Perspective**

Similar services are provided by a few online shopping platforms to those that Online Multivendor Sales Platform is planning to establish. These online platforms enable customers to search for and buy a variety of products. For instance, two of the most well-known e-commerce sites that serve a global audience are Amazon and eBay[[1]](#footnote-1). The local platform that Online Multivendor Sales Platform seeks to establish, however, differs significantly from these worldwide platforms in a few important ways. Compared to worldwide systems, our local one can provide a more individualized and regional shopping experience. As a result, local firms that may find it challenging to contact customers through larger international platforms may find the system to be more accessible. Also, it can work as a significant role in boosting nearby companies, which will benefit the economy.

There are several types of research available in terms of conducting online shopping platforms[[2]](#footnote-2). Several studies have focused on the variables that affect consumer behavior, including website design, pricing tactics, social media usage, and others. There are also many studies that look at the prospects and difficulties of e-commerce in developing nations, including issues with logistics, infrastructure, and payment methods. Since our system is designed for the Azerbaijani market, learning about shopping behavior in Azerbaijan could provide valuable perspectives in terms of understanding customer needs.

* Main components of our online local shopping system

**Web Application:** Searching, filtering, sorting, product details, reviews, ratings, and other features are included in the main web application that users use to browse and buy things online.

**Payment Processing:** This part is in charge of safely processing customer payments for orders placed through the application.

**Vendor:** This component is a representation of the sellers who will utilize the Vendor Management component to manage their product listings, keep track of sales and inventory, and interact with customers. To put it another way, this element acts as a platform for the suppliers to run their online businesses.

**Customers:** The end-user of the system who will browse, search, and purchase products through the Web Application.



Customers



Asanshop Service

Vendor



Payment Gateway

**Product Functions[[3]](#footnote-3)[[4]](#footnote-4)**

1. Product Management:

* Displaying products.
* Managing inventory.

1. Order management:

* Placing orders.
* Tracking order status.
* Viewing order history.
* Fulfilling orders.
* Generating invoices.

1. Search:

* Search functionality for products.
* Browsing products by category and subcategory.
* Sorting and filtering.

1. Product details and images:

* Detailed product information, including description, specifications, and features.
* Product images
* Product reviews and ratings.

1. Cart and checkout:

* Adding items to cart.
* Modifying cart contents.
* Applying discounts.
* Shipping and billing address management.

1. Payment processing:

* Secure payment processing.
* Multiple payment methods.

1. Customer support:

* Email support.
* Live chat support.
* Phone support.

1. Vendor management:

* Vendor registration and approval.
* Product management.
* Order management.
* Payment and commission management.

1. Marketing and promotions:

* Discounts.
* Coupon codes.
* Special offers.
* Plan subscriptions.

1. Analytics and reporting:

* Sales tracking.
* Customer behavior analysis.
* Market trend analysis.

1. Support and training:

* FAQs.
* User manuals.

1. Feedback management:

* User ratings, reviews, and comments.
* Feedback moderation by the system administrator.
* System administrator responding to user feedback.
* User account information management & viewing of order history and feedback.

1. User account management:

* User registration and login.
* User profile management.
* Password reset and recovery.
* Payment method management.

1. Privacy and security:

* Ensuring privacy and security.
* Implementation of data protection measurements.
* Secure transmission of user information.[[5]](#footnote-5)

**User Characteristics**

The potential audience of Online Multivendor Sales Platform is probably people familiar with using computers, surfing the web, and engaging in online transactions. They must have a fundamental level of technical knowledge and experience with online shopping, including the ability to complete online forms, surveys, and product purchases. As a result, to promote acceptance and utilization, the user interface needs to be clear and simple to use.

The intended customers' educational backgrounds may vary, but it is appropriate to presume that they have at least a fundamental education because this is required for them to participate in online transactions. The platform should also be made accessible to people with impairments and others who may face other difficulties that limit their ability to use technology.

The system's internal design might need to be scalable to account for anticipated increases in user numbers and transaction volumes. To protect user credentials and financial information, security and privacy issues must also be taken into mind.

When it comes to online purchasing, the targeted customers of Online Multivendor Sales Platform might have different expectations and preferences regarding the types of payment methods accepted, the delivery time, and the quality of customer service provided. To maintain that the platform matches the needs and expectations of its users, these preferences will need to be taken into consideration when creating the platform.

## Constraints

There are some constraints for the Online Multivendor Sales Platform:

* Availability - The system should be available 24/7, and there should not be system interruption.
* Performance - The system is needed to have high-speed page loading, there will be many vendors and a lot of products so, the website may load the pages slowly. The website should be optimized for data access, caching, and content delivery to improve user experience.
* Scalability - The system should accept a high number of customers and support concurrent user sessions. The website is an e-commerce multi-vendor website so, there will be many customers on special days such as Black Friday, Christmas, and so on. This requires a scalable architecture and load-balancing techniques.
* Compatibility - Mainly, people use mobile phones during online shopping, so the system should be compatible with mobile phones.

## Assumptions and Dependencies

There are many assumptions:

* Data management - assumptions about the data management and analysis capabilities such as the data storage and analysis tools may affect the requirements for the system.
* Messaging(emailing) system - the system can provide messaging service for the vendors and customers to discuss the order.
* Payment system - the system may support international payment gateways.
* Dispute Chargeback - if the item has not been delivered or the customer does not like the item then the customer will be able to open a case which is related to the order(items).

There are many dependencies:

* The system should be integrated with some third-party APIs such as payment gateways, shipping services, email services, and so on.
* The platform’s security depends on some factors such as secure coding practices, data privacy regulations, and so on
* The user experience of the system is related to(depends) the usability of the user interface and the responsiveness of the system.

**3. Feasibility Analysis**

The creation of Online Multivendor Sales Platform is technically feasible based on the specified product functions. The necessary hardware and software are well-known and widely utilized in the e-commerce sector. However, some potential technical challenges may include ensuring system security, scalability, and compatibility with existing technologies.

* **Familiarity with application(s) or technology:**

Having less familiarity with the application can increase the risk of errors, delays, and other issues. It's important to ensure that the development team working on the software has the extensive skills and knowledge to successfully implement the system. This may involve training or hiring additional team members with relevant experience, conducting research to learn more about the technology being used, or seeking the assistance of outside experts or consultants. By taking steps to mitigate risk and ensure that the team has the necessary skills and knowledge, we can increase the probability of a successful project outcome. Hiring additional developers or looking for experts and consultants are possible steps.

* **Project size:**

It is an undeniable fact that larger projects generally have more risk than smaller projects. Because larger projects typically involve more people, more resources, and more complexity, which can increase delays. Our system Online Multivendor Sales Platform also involves multiple functionalities. However, the size of the project also offers a chance for economic advantages.

* **Compatibility:**

The risk associated with the integration of the Online Multivendor Sales Platform system with the existing technology may increase the risk. To avoid this risk, it is important to be careful about the analysis of the system infrastructure. As a result, it can help to find potential risks early and make a plan to solve them.

**Economic feasibility: We should build it!**

* **Development costs:**

It might be expensive to create an e-commerce platform like Online Multivendor Sales Platform. The expenses cover paying the salaries of the programmers and designers, buying the software that is required, and marketing expenses. The entire cost of development would be around 240,000 AZN if a team of 10 developers worked for 12 months at an average monthly wage of 2000 AZN.

* **Annual operating costs:**

After the platform is created, there will be continuing expenses for hosting, payment processing, and platform maintenance and updating. To guarantee that the platform continues to be successful, these costs will need to be closely watched over and handled. The entire annual operating expense would be about 60,000 AZN if a team of 5 support personnel worked for 12 months at an average monthly wage of 1000 AZN. Extra expenses, estimated at 25,000 AZN annually, would be incurred for hosting and maintaining the platform.

* **Annual benefits (cost savings and/or increased revenues):**

More commissions on sales, improved economic value in Azerbaijan, and a more convenient shopping experience for customers are just a few of the possible advantages of Online Multivendor Sales Platform. The platform's adoption rate, however, will determine the real money generated. The monthly revenue would be 500,000 AZN if there were 10,000 transactions per month with an average transaction value of 50 AZN. The monthly profit would be 50,000 AZN if the profit margin were 10%. The consequence would be a benefit of 600,000 AZN per year.

* **Intangible benefits and costs**

The platform may provide intangible advantages including better consumer satisfaction, more brand loyalty, and elevated business trust. Yet, there might be intangible costs, such as poor customer reviews.

* **Necessary calculations:**
* Total Investment = 240,000 AZN + (60,000 AZN + 25,000 AZN) = 325,000 AZN
* Net Profit = 600,000 AZN - (60,000 AZN + 25,000 AZN) = 515,000 AZN
* ROI = (515,000 / 325,000) x 100% = 158.46%

This means that for every 1 AZN invested in the Online Multivendor Sales Platform, we will expect to earn a return of 1.58 AZN over a one-year period.

Defining break-even point with a formula:

X(P-V) = F

Where X is the number of transaction per month, P is the average transaction value, V is the variable cost per transaction, and F is fixed costs.

Utilizing the values provided above, we obtain:

P = 50 AZN, V = 5 AZN, F = 300,000 AZN. So, we have the calculations:

* X = F / (P-V)
* X = 300,000 / (50-5)
* X = 6,667

Thus, Online Multivendor Shopping Platform has break-even point of 6,667 transactions per month. These estimates suggest that the project is economically viable and has the potential to generate a sizable amount of money and profit. However, the costs of development are high in comparison to the country's economy and the average pay, and there can be extra expenses or difficulties with vendor and user adoption, marketing, and ongoing maintenance and support.

**Organizational feasibility: They will!**

The Online Multivendor Sales Platform project appears to have good organizational viability because it supports the government's objective of boosting e-commerce and boosting the economy. To make sure that the platform satisfies the needs and expectations of potential customers, it is crucial to undertake market research and collect feedback from them.

* **Is the project strategically aligned with the business?**

The Online Multivendor Sales Platform project looks to be strategically in line with the objectives of the Republic of Azerbaijan's Ministry of Economy, which aims to advance e-commerce and stimulate economic expansion through digital transformation.

* **Project champion(s)?**

Being the organization driving the initiative ahead and providing resources and support for its development and implementation, the Ministry of Economy of the Republic of Azerbaijan can be seen as the primary project advocate and sponsor.

* **Senior management?**

The Republic of Azerbaijan's senior management at the Ministry of Economy appears to be in favor of the Online Multivendor Sales Platform project and is aware of its potential advantages for the economy and the whole nation.

* **Users and other stakeholders?**

The success of the Online Multivendor Sales Platform platform depends heavily on users and other stakeholders, including local businesses, internet shoppers, and logistical providers. To make sure the platform fulfills its needs and expectations, it is critical to include them in the design and testing process. It is also crucial to offer continuous support and engagement to promote adoption and usage.

**4. References**

1. Hamilton, G.G., Senauer, B. and Petrovic, M. (2012). *The market makers: How retailers are reshaping the global economy*. Oxford: Oxford University Press.
2. *A focus on consumer behaviours and experiences in an online shopping environment*. First edition (2015). Bingley, UK: Emerald Group Publishing Limited.
3. Hines, K. (2022, June 9). *21 Must-Have Features For Ecommerce Sites.* SearchEngineJournal. <https://www.searchenginejournal.com/ecommerce-guide/must-have-website-features/>
4. *72 Online Store Features to Start & Scale in 2022*. (2022). Technosquare. <https://www.techosquare.com/blog/online-store-features-list>

1. Hamilton, G.G., Senauer, B. and Petrovic, M. (2012). *The market makers: How retailers are reshaping the global economy*. Oxford: Oxford University Press.  [↑](#footnote-ref-1)
2. *A focus on consumer behaviours and experiences in an online shopping environment*. First edition (2015). Bingley, UK: Emerald Group Publishing Limited. [↑](#footnote-ref-2)
3. Hines, K. (2022, June 9). *21 Must-Have Features For Ecommerce Sites.* SearchEngineJournal. [↑](#footnote-ref-3)
4. *72 Online Store Features to Start & Scale in 2022*. (2022). Technosquare. [↑](#footnote-ref-4)
5. [↑](#footnote-ref-5)