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| **Princess Nourah Bint Abdulrahman University**  **College of Computer & Information Science**  **Information Systems Department**  **Second Semester 1446 - 2025**        **IS340T: Enterprise Architecture**  **Enterprise: Noon**  **Project: "Reducing Delivery Time"**            **Supervised By: Dr. Hend Alkahtani**     |  |  | | --- | --- | | **NAME** | **ID** | | Lama Alshaiban | 444009259 | | Reema Almogren | 444009232 | | Aleen Alotaibi | 444009057 | | Reham Alqahtani | 444009060 | | Reem Alshammari | 444009137 |   1 |
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| 1. **Introduction**     Noon is a top e-commerce site in the Middle East. Despite its robust infrastructure, it confronts substantial challenges in shortening delivery times, which affects customer satisfaction and operational efficiency. The DeliverEdge architecture team uses the TOGAF ADM framework to analyze, design, and offer solutions for reducing delivery time. The project will exclusively address delivery optimization, not other business challenges.      **1.1 Problem Statement & Significance**    Noon is now facing delivery delays due to inefficient routing, limited integration with logistical partners, and warehouse imbalances. These concerns cause longer delivery delays, unhappy customers, and higher operational costs. Reducing delivery times is crucial for improving customer experience, gaining a competitive edge, and increasing logistical efficiency. Our project focuses on a single problem: lowering delivery time.         1. **Proposed Solution (by establishing the EA)**     The approach involves employing the TOGAF ADM methodology from Preliminary to Phase F to examine present issues and offer architectural changes.   * Implement real-time tracking to optimize warehouse distribution. * Utilize AI for efficient routing - Enhance system interaction with logistics partners     Two diagrams will be included.   1. Value Chain Diagram - depicting Noon's core logistics procedures (Phase A). 2. Business Footprint Diagram - demonstrating organizational roles in delivery (Phase B).               4 |
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| **EA Framework**   1. **Preliminary phase**     Scope: This EA project focuses on Noon's logistics and delivery services.    Governance: DeliverEdge oversees all phases and documentation.    Maturity Assessment: Noon possesses advanced logistics technology (such as Noon Express), but it lacks dynamic collaboration with partners.    Gaps include: no real-time logistics integration, an imbalanced warehouse, and limited visibility.    Resolution Strategy: Use real-time APIs, increase warehouse locations, and improve route planning.           1. **Phase A**     Vision: A speedier, real-time, integrated delivery system that ensures efficiency: - Reduce delivery time in large cities.  Improve tracking accuracy and automate warehouse activities.      *Figure 1 Value Chain Diagram*              5 |
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**. Phase B**

Current State: Manual planning of delivery routes, centralized control of dispatch operations,

limited network of distribution hubs.

Target State: automated route planning, several regional distribution centers, real

-

time coordination

and updates.

Business Capabilities:

-

managing customer orders

-

Handling dispatch processes

-

Monitoring ship

ment status

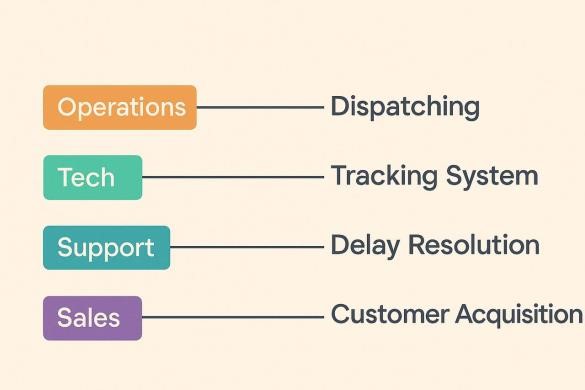
-

providing customer assistance

*Figure*

*2*

*Business Footprint Diagram*



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| **6.Gap Analysis phase A&B**     |  |  |  |  |  | | --- | --- | --- | --- | --- | | **Phase** |  | **Issue** | **Gap** | **Suggested**  **Solution** | |  | A | Business  Direction | Absence of a common vision for the future. | With feedback from stakeholders, define the architecture vision. | |  | A | Delivery Focus | No KPIs specific to delivery. | Establish precise KPIs to cut down on delivery time. | |  | B | Route Planning | Not Effective and manual. | Put the AI route optimization engine into practice. | |  | B | Warehouse  Coverage | only a centralized framework. | Include regional centers in large cities. | |  | B | Real-Time  Tracking | Not established with partners. | Create API relationships with logistical providers. |       *Table 1 Gap analysis phase A&B*      7 |
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| **7.Phase C**    Current State:   * Operates with various internal systems (order management, tracking) * Updates done by 3rd party logistics are automatic/manual     Target State:   * Data silos unified into a single source of truth * Structural APIs for driver/logistics updates     Data Flow Description:    Data is moving from the order system to warehouse, to delivery app and then to customer app.    Live updates for Tracking are required      **8.Phase D**  Utilized Technologies:  The Noon Express app  Internal software for the warehouse  GPS tools for drivers  Upgrades that are required:  Updates on deliveries in real time (IoT or app-based) Scaling of servers for data loads    Order receipt, server processing, logic engine routing, driver assignment, and app confirmation are the steps involved in the processing process. Make use of the common architecture for cloud deployment.    8 |
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| **9.Gap Analysis phase C&D**     |  |  |  |  |  | | --- | --- | --- | --- | --- | | **Phase** |  | **Issue** | **Gap** | **Suggested**  **Solution** | |  | C | Data Integration | Real-time system synchronization. | Put APIs into place for centralized data sharing. | |  | C | Tracking  Accuracy | Manual logistics updates. | Drivers and realtime GPS synchronization. | |  | D | Infrastructure | Insufficient scalability at high load. | Auto-scaling backend in the cloud. | |  | D | GPS Tracking | Does not provide clients with realtime updates | Improve GPS systems by integrating them with mobile apps. |   *Table 2 Gap analysis phase C&D*  **10. Phase E: Opportunities and Solutions**    Work Packages:   * WP1: Develop logistics API * WP2: Establish two new warehouses in Riyadh and Jeddah * WP3: Implement an AI-based routing system Dependencies: * WP3 is contingent upon the completion of WP1 Benefits: * 25% faster average delivery times * Reduction in failed deliveries             9 |

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| **11. Phase F: Migration Planning**    Short-Term (1–2 months):   * Integrate real-time APIs with logistics systems Mid-Term (3–6 months): * Roll out the AI-based routing module Long-Term (6–12 months): * Expand warehouse capabilities and update infrastructure Risks: * Potential delays in API adoption * High initial investment costs     The plan will be executed using agile methodologies for each package.    **12.Gap Analysis phase E&F**     |  |  |  |  |  | | --- | --- | --- | --- | --- | | **Phase** |  | **Issue** | **Gap** | **Suggested**  **Solution** | |  | E | Roadmap | Absence of a staged delivery strategy | Clearly define your short- and longterm goals. | |  | E | Change Impact | Stakeholder engagement is unclear. | Make a communication and stakeholder engagement plan. | |  | F | Implementation Timeline | Absence of specific migratory phases. | Specify your short, mid-, and longterm goals. | |  | F | Risk Planning | Absence of a thorough risk mitigation strategy. | Make a risk matrix and include solutions for mitigating it. |   *Table 3 Gap analysis phase E&F*    10 |

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| 1. **Conclusion**     This project aims to reduce delivery times at Noon by employing Enterprise Architecture with the TOGAF ADM framework. We identified issues in routing, warehouse distribution, and system integration. Our proposed solutions include real-time APIs, AI-driven routing, and logistics network expansion. With a phased approach, Noon can significantly decrease delivery delays and improve customer satisfaction.       1. **References**      * TOGAF Standard v9.2 – The Open Group * Noon.com logistics pages      1. **Appendix**     1. **Team Meetings Summary**        * **Feb 10, 2025:** Project scope defined; Noon selected as the enterprise.       * **Feb 17, 2025:** Discussed current delivery issues and Phase A & B planning.       * **Mar 1, 2025:** Identified solutions using APIs and AI; worked on Phase C & D.       * **Mar 10, 2025:** Finalized migration plan and risk assessment for Phase F.      * 1. **Task Distribution**       + **Lama Alshaiban:** Contributed to Phase A, participated in Gap Analysis A&B, and co-wrote the introduction.      + **Reema Almogren:** Worked on Phase B and C, helped design the business footprint diagram, and reviewed content.      + **Aleen Alotaibi:** Helped with Phase A & D, supported diagram creation, and assisted in formatting the document.      + **Reham Alqahtani:** Contributed to Phase C and E, supported in identifying work packages and writing the conclusion.      + **Reem Alshammari:** Participated in Phase D & F, assisted with migration planning, and finalized proofreading.             11 |
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| **15.3 Brainstorming Highlights**   * Regional warehouses * Real-time tracking with logistics partners * AI-based route optimization * Scalable cloud infrastructure       12 |