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Climate Equipment Monitoring and Predictive Maintenance System

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| Industry | Food Retail/Supply Chain Management | Client | Large Retail Chain |
| Role | Solution Architect, Enterprise Architect | | |
| Key Result | The client received a chosen architectural solution and a clear roadmap, laying the foundation for significant savings. | | |

| Situation | Task | Action | Result |
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| X5 Retail Group (a large retail chain) faced the challenge of ineffective temperature control in refrigerators and rooms across its numerous retail locations. This led to significant product losses due to thawing and high electricity costs. There was also an absence of a system for predictive analysis of equipment failures and maintenance planning, resulting in unscheduled repairs and downtime. | In my dual role as Enterprise Architect and Solution Architect, my task was to develop a comprehensive solution for X5 Retail Group that would enable temperature control in refrigerators and retail store premises, predict climate equipment failures, and plan maintenance and repairs based on predictive analysis. A key metric was to achieve a 10% reduction in electricity costs. My work was to conclude with the preparation of all necessary documentation for launching a tender for the project's implementation. | In-depth Stakeholder Requirements Gathering: I conducted numerous meetings with diverse stakeholders from various departments within X5 Retail Group, overcoming the challenge of heterogeneous opinions and requirements to form a unified project vision. Market Research and Vendor Analysis: I researched and evaluated offerings from various suppliers (such as Danfoss, Fender, and others) specializing in monitoring and predictive maintenance systems. Development of Vendor Evaluation System: I created a structured methodology for objectively assessing potential suppliers and their products. Development of Two Architectural Solution Options: Based on the requirements analysis and vendor offerings, two alternative, yet fully detailed, architectural solutions were designed, including sensors, hubs, a centralized control panel, data storage, and a business intelligence system. Economic Justification and Presentation: I presented the developed solution options to the client, providing a detailed rationale that included projected economic benefits and strategies to achieve a 10% reduction in energy consumption. Roadmap Formulation: I developed a clear roadmap for the phased implementation of the chosen solution and prepared all necessary materials for the subsequent tendering process. | Two Fully Developed Architectural Solutions and Detailed Vendor Analysis: The client received a comprehensive overview of potential implementation paths and objective information for decision-making. A Clear Project Roadmap: A concrete, step-by-step roadmap was established, providing the company with certainty and the ability to proceed to the practical step of launching a tender for the project's execution. Justification of Potential Economic Efficiency: The client received confirmation of significant projected savings, including up to a 10% reduction in electricity costs, minimization of product losses due to thawing, and optimization of maintenance and repair costs through predictive planning. My work successfully concluded at the stage of preparing the company for the tender announcement, providing a complete and clear foundation for the project's subsequent implementation. |