Project Plan Presentation
Electronic Data Interchange (EDI) Monitoring

The Capstone Experience

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Project Sponsor Overview

- Stryker Corporation is a Fortune 500 medical technology company with specialties in orthopedics, neurotechnology, and surgical equipment
- Based in Kalamazoo, Michigan, Stryker was founded in 1941 by Dr. Homer Stryker
- Stryker has a history of rapid expansion and acquisitions
Project Functional Specifications

• Unify Dashboard Display of Data Across Various Middleware Solutions
• Add Analytical Features for Close Scrutiny of Transactional Metrics
• Enable Scheduled and Customizable Reporting
• To Provide Stakeholders with a Consolidated System for Enhanced Decision-Making
Project Design Specifications

• Search page: allows users to execute filtered searches on EDI transaction data with results displayed in tabular format
  ▪ Users can view payload and error trace files for individual transactions as pop-ups

• Report Page: displays default and custom graphical visualizations of transaction data

• Alerts Page: users can create and schedule custom email alerts

• Admin Page: allows admins to customize search, table, and report options
Screen Mockup: Search Page
Screen Mockup: Search (Filtered)

### Search:
- **Message Type:**
- **From Date:** 9/14/2023 00:00:00
- **To Date:** 9/14/2023 23:59:59
- **Sender:** -- Select Sender --
- **Receiver:** -- Select Receiver --
- **Status:**
- **DVM Response:**
  - is less than 7

### Table:
<table>
<thead>
<tr>
<th>Event Type</th>
<th>Message Type</th>
<th>Compromised</th>
<th>GOOS</th>
<th>From ID</th>
<th>Date/Time</th>
<th>Event Message</th>
<th>DVM Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>827735</td>
<td>Blue</td>
<td>3</td>
<td>1/12/23 12:00 AM</td>
<td>1</td>
<td>N/A</td>
<td>5</td>
</tr>
<tr>
<td>6</td>
<td>723487</td>
<td>Pink</td>
<td>12</td>
<td>1/20/23 12:00 AM</td>
<td>1</td>
<td>N/A</td>
<td>13</td>
</tr>
<tr>
<td>7</td>
<td>850934</td>
<td>Red</td>
<td>4</td>
<td>1/26/23 12:00 AM</td>
<td>1</td>
<td>N/A</td>
<td>3</td>
</tr>
<tr>
<td>8</td>
<td>904015</td>
<td>Yellow</td>
<td>135</td>
<td>2/27/23 12:00 AM</td>
<td>1</td>
<td>N/A</td>
<td>19</td>
</tr>
<tr>
<td>9</td>
<td>988051</td>
<td>Green</td>
<td>25</td>
<td>3/13/23 12:00 AM</td>
<td>1</td>
<td>N/A</td>
<td>3</td>
</tr>
<tr>
<td>10</td>
<td>561236</td>
<td>White</td>
<td>8</td>
<td>4/15/23 12:00 AM</td>
<td>1</td>
<td>N/A</td>
<td>19</td>
</tr>
</tbody>
</table>

**Page:** 1
Screen Mockup: Search (Trace Pop-up)
Screen Mockup: Search (Payload Pop-up)
Screen Mockup: Payload Search
Screen Mockup: Reports Page
Screen Mockup: Alerts Page
Screen Mockup: Alerts (Create Alert)
Screen Mockup: Admin Page (Default Search Layouts)
Screen Mockup: Admin Page (Result Table Layout)
Screen Mockup: Admin Page (Report options)
Project Technical Specifications

• Backend Infrastructure
  ▪ The system uses Python and the Flask framework, hosted on Azure Web Server
• Data Storage and Management
  ▪ Azure SQL Server serves as the central data repository, capturing and storing events from various ERP platforms.
• Frontend User Interface
  ▪ Developed using ReactJS, the frontend dynamically communicates with Flask's API endpoints to fetch and render data.
• Table Functionalities
  ▪ DataTables is integrated into the ReactJS framework to provide enhanced table features such as sorting, searching, and pagination.
• Analytics and Visualization
  ▪ PowerBI is embedded within the ReactJS framework for real-time analytics, capable of sourcing data directly from the Azure SQL Server or via Flask APIs.
Project System Architecture

- ERP System
- Azure Web App
- Central Data Repository
- Azure DevOps (Task Coordination)
- SQL

- Hosted on
- pyodbc
- Flask
- DataTables
- React
- Power BI

- UI / UX
- Graphs

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Project System Components

- Software Platforms / Technologies
  - Microsoft Azure
    - SQL Server – Central Data Repository
    - Web App – Hosting Platform
    - Dev Ops – Project Management
  - Web Application
    - Flask – backend framework
    - pyodbc – connect to Azure SQL
    - PowerBI – graphing and reporting
    - Datatables – creating dynamic table for large dataset
    - ReactJS – frontend framework
Project Risks

• Implementing Dynamic Tables and Graphs (High Priority)
  ▪ Mitigation: Embed PowerBI reports for customizable graphs and utilize DataTables jQuery for flexible table displays.

• Database Schema for Storing EDI Data (High Priority)
  ▪ Mitigation: Design the schema in Azure SQL Server with atomic data types like "varchar," "datetime," and "float."

• Optimizing Searching, Filtering, and Displaying Large Amounts of Data (High Priority)
  ▪ Mitigation: Implement server-side data processing and pagination through Flask endpoints to improve latency and user experience.

• Generate and Send Custom Queries at Predefined Intervals (Medium Priority)
  ▪ Mitigation: Store custom SQL queries in Azure SQL Server and automate email dispatch at specified intervals using Azure's built-in mailing capabilities.
Questions?