Streamlining IoT Sensor Data Analytics: A Case Study on Using Power BI for Dashboard Visualization
About the Client
Our client is a leading property management company that specializes in managing a diverse portfolio of properties such as business centres. Their experienced professionals provide top-notch property management services to clients across the nation, giving them complete visibility into the performance of their properties.

Business Situation
During the pandemic, our client struggled with the housekeeping, maintenance, and management of workstations’ occupancy across various business centres. Also, the lack of a centralized platform made it difficult to track the number of reserved and vacant workstations, and service issues in real time.

Solution
Softude developed a solution by integrating IoT sensors installed in existing building hardware, such as smart cameras, dustbins, tissue boxes, air quality sensors, power supply, diesel generators, and most of other devices. Real-time data on workstation occupancy, smart washrooms, power supply, and diesel generators are collected from the IoT sensors and visually presented through a Power BI dashboard.

The dashboard helped the client gain insights on
1. Total workstations and their occupancy status by day, campus, building, floor, and neighborhood
2. Smart washroom data such as air quality, average daily usage of washroom, number of service tickets by sensor type, open and/or closed tickets, etc
3. Daily checklist for in-house planned preventative maintenance (PPM) and vendor PPM for the systems and devices such as laptop, etc

Solution Impact
• Efficient management of multiple buildings
• Access to real-time data on workstations, smart washrooms, and power supply for informed decision-making
• Better management of occupancy in workstations
• Cost savings resulting from better facility utilization

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Solution Architecture

Dashboard for Workstation Occupancy Management

Workstation Reservation & Occupancy Analysis

<table>
<thead>
<tr>
<th>Building</th>
<th>Reservation</th>
<th>Occupancy</th>
<th>Availability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Building A</td>
<td>122</td>
<td>80%</td>
<td>Available</td>
</tr>
<tr>
<td>Building B</td>
<td>37</td>
<td>20%</td>
<td>Occupied</td>
</tr>
<tr>
<td>Building C</td>
<td>5</td>
<td>10%</td>
<td>Available</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Neighborhood</th>
<th>Reservation</th>
<th>Occupancy</th>
<th>Availability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Green</td>
<td>221</td>
<td>70%</td>
<td>Available</td>
</tr>
<tr>
<td>Orange</td>
<td>93</td>
<td>20%</td>
<td>Available</td>
</tr>
<tr>
<td>Blue</td>
<td>20</td>
<td>10%</td>
<td>Available</td>
</tr>
</tbody>
</table>
Smart Washroom Dashboard

Monthly & Daily Usage Trend

Days Trend vs Work Order by Sensor Type (Air Quality Trend/Bin Level/Tissue Level/Usage)

Average Reading Log & Total Number of Work Order by Sensor Type
Facility Maintenance Dashboard
About Us

Incorporated in 2005, Softude is a global IT consulting and services company with expertise in rchitecting digital transformation solutions and providing software product engineering services. We are dedicated to creating innovative and interactive digital experiences that connect people to the brand. These software solutions that are used across 32+ countries are engaging audiences in-venue, on the web, and personal mobile devices. Our highly competent and trusted team delivers digital brilliance that accelerates our client’s digital-first journey.

Softude is a CMMI Level 5 appraised, ISO 27001:2013, ISO 9000:2015, and a Great Place to Work For certified company.

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