

Assignment No. 2: C3 CIO Consulting Team (Team Assignment)

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Part 1: Corporate Vision & Business Strategy

Executive Summary

In recent years, the distribution, logistics, and supply chain management industries have undergone significant changes and advancements in technology, including the widespread adoption of software and automation solutions. The COVID-19 pandemic has further accelerated the need for digitization and automation, as supply chains were disrupted and companies struggled to meet the demands of a changing market. The COVID-19 pandemic has highlighted the need for greater supply chain resilience and flexibility, as companies have had to adapt quickly to changing market conditions and disruptions in the global supply chain. This has led to an increased focus on visibility and transparency in supply chain operations, as well as the need for agile and flexible logistics solutions.

One of the key trends in the industry is the adoption of cloud-based software solutions, particularly in warehouse management systems (WMS). The benefits of cloud-based WMS include lower upfront costs, easier scalability, and the ability to access real-time data from anywhere with an internet connection. According to a report by Grand View Research, the global WMS market size is expected to reach \$5.9 billion by 2027, with cloud-based solutions expected to experience the highest growth rate. Another trend is the use of artificial intelligence (AI) and machine learning (ML) in supply chain management. AI and ML can help optimize supply chain operations by predicting demand, identifying patterns, and providing real-time insights. For example, DHL Supply Chain has implemented an AI-powered tool called "DELMIA Quintiq" to optimize its transportation network, while Amazon has developed its own machine learning algorithms to predict inventory demand.

The rise of e-commerce has also had a significant impact on the industry, as more and more companies are turning to online sales and home delivery. This has led to a greater need for last-mile delivery solutions, which are designed to optimize the final leg of the delivery

process, from the warehouse to the customer's doorstep. Companies such as FedEx, UPS, and Amazon have invested heavily in last-mile delivery solutions, including autonomous vehicles, drones, and robots. In addition to last-mile delivery, there has been a growing interest in robotics and automation in the industry. Robotics can help automate repetitive tasks and increase efficiency in warehouse operations. For example, companies like GreyOrange and Geek+ have developed robotic systems that can pick and pack items in warehouses, while Swisslog has implemented an autonomous pallet transport system in a distribution centre in China.

One of the significant trends in the Yard Management System (YMS) industry is the integration of IoT devices to improve yard visibility and real-time tracking. IoT devices such as sensors and RFID (Radio Frequency Identification) tags can provide real-time data on yard activities and inventory levels, which can help improve efficiency and reduce errors. In addition, IoT devices can be integrated with cloud-based YMS solutions to provide real-time visibility of yard operations, enhancing supply chain transparency.

In conclusion, the YMS and dock scheduling industry is undergoing rapid transformation, driven by technological advancements and changing market conditions. The integration of IoT devices, AI, and ML algorithms, mobile-based applications, cloud-based solutions, and the demand for contactless and automated solutions are some of the key trends that are shaping the industry. Overall, the distribution, logistics, and supply chain management industries are undergoing rapid transformation, driven by technological advancements, and changing market conditions. Cloud-based software, AI, and ML, last-mile delivery solutions, robotics and automation, and supply chain resilience and flexibility are some of the key trends that are shaping the industry.

Observations/Analysis

Market Analysis

C3 Solutions competes with several companies in the distribution, logistics, and supply chain management software industry, including Amazon's FBA, Manhattan Associates, Oracle Yard Management, SAP Yard Logistics, and Luminata Logistics. Each of these companies offers a range of products and services that overlap with C3 Solutions' offerings, but there are some differences in their approach and focus. Amazon's FBA is primarily focused on providing warehousing and fulfilment services for e-commerce sellers. While Amazon does offer some logistics and supply chain management software solutions, its main focus is on providing end-to-end logistics services. In contrast, C3 Solutions is focused on providing cloud-based yard management software (YMS) and dock scheduling solutions that are designed to optimize logistics operations for a range of industries.

In terms of competition, the logistics and supply chain management software industry is highly competitive, with many companies vying for market share. C3 Solutions' focus on providing customer-centric solutions and partnering with leading logistics and transportation companies has enabled it to differentiate itself from its competitors and gain a competitive advantage. C3 Solutions' cloud-based yard management software and dock scheduling solutions offer real-time visibility and automation of yard operations, helping clients optimize their logistics operations. Furthermore, C3 Solutions' software can be integrated with other supply chain management systems to provide end-to-end visibility of logistics operations. By focusing specifically on yard management and dock scheduling, C3 Solutions is able to offer a more targeted and specialized solution than some of its competitors, which may give it an advantage in the market.

IoT (Internet of Things) as a Niche Strategic Business Opportunity

C3 should focus on IoT as a strategic business opportunity niche due to the tremendous growth potential and the ability to create value for its customers. IoT technology is revolutionizing the way businesses operate and creating new opportunities for growth and innovation. One of the key factors driving the growth of IoT is the increasing adoption of connected devices across various industries (*Gartner Identifies Top 10 Strategic IoT Technologies and Trends, 2018*). This growth in connected devices is expected to create significant opportunities for businesses that can effectively leverage IoT to drive innovation, improve efficiency, and create new value for their customers.

The competitive landscape in the IoT market is complex, with many players vying for market share. Some of the major competitors include Amazon, Microsoft, Google, and IBM, who have all made significant investments in IoT technology (*Global Market Insights Inc., 2019*). However, C3 has a number of strengths that make it well-positioned to compete in this market. These include its expertise in developing and deploying complex software systems, its strong relationships with key customers, and its focus on creating value for customers through data analytics and machine learning. In order to succeed in the IoT market, C3 will need to carefully consider Porter's Five Forces model, which provides a framework for understanding the competitive dynamics of the industry. The Five Forces model includes the following components:

- **Threat of new entrants:** The IoT market is highly attractive, with significant growth potential and the ability to create value for customers. As a result, there is a high likelihood that new players will enter the market in the coming years, increasing competition and potentially reducing profitability. C3 will need to focus on building strong relationships with its existing customers and leveraging its expertise in developing complex software systems to create a competitive advantage.

- Bargaining power of suppliers: The IoT market is highly fragmented, with many different players providing hardware, software, and connectivity solutions. This fragmentation reduces the bargaining power of any individual supplier, providing opportunities for C3 to negotiate favorable terms and build strong partnerships with key suppliers.
- Bargaining power of buyers: The bargaining power of buyers is high in the IoT market, as customers have many different options to choose from and can easily switch between providers. C3 will need to focus on creating value for its customers through data analytics and machine learning, providing a compelling reason for customers to stay with the company over the long term.
- Threat of substitutes: The threat of substitutes is low in the IoT market, as the technology is becoming increasingly ubiquitous and essential to many businesses. However, C3 will need to remain vigilant and continue to innovate, in order to stay ahead of emerging technologies and provide value to its customers.
- Intensity of competitive rivalry: The IoT market is highly competitive, with many players vying for market share. C3 will need to differentiate itself from competitors by focusing on creating value for customers through data analytics and machine learning, building strong relationships with key customers, and leveraging its expertise in developing complex software systems.

In the IoT distribution space, C3 can leverage its solutions by investing and integrating IoT, considering its advantages. C3 can use IoT to create an innovative and dynamic supply chain by using sensors to track products, monitor inventory levels, and ensure timely delivery. C3 can leverage its expertise in the areas of logistics and supply chain management to provide value-added services to retailers looking to optimize their supply chain.

C3 can provide a Customer Value Proposition by focusing on reducing operational costs, increasing efficiency, and improving customer satisfaction (*Saman, 2022*). By using IoT, C3 can provide retailers with real-time information about their inventory levels, delivery schedules, and product quality. This information can be used to optimize the supply chain, reduce inventory costs, and ensure timely delivery. C3 can also use IoT to track product performance, monitor product quality, and identify areas for improvement. This information can be used to improve customer satisfaction by providing better quality products and services. C3 can also differentiate itself by providing a comprehensive solution that integrates all aspects of the supply chain (*Deutsche Telekom 2020: Leading the Digital Transformation, n.d.*). By providing a complete solution, C3 can reduce the complexity of the supply chain and provide a seamless experience for retailers. This will improve customer satisfaction and increase loyalty.

In conclusion, C3 should focus on IoT as a strategic business opportunity niche, as it has the potential to provide significant value to retailers by reducing operational costs, increasing efficiency, and improving customer satisfaction. While the IoT has not yet been fully adopted by the retail sector, there is significant potential for IoT to transform the supply chain and create a competitive advantage for retailers. By leveraging its expertise in logistics and supply chain management, C3 can provide value-added services to retailers looking to optimize their supply chain. C3 can also differentiate itself by providing an innovative and comprehensive solution that integrates all aspects of the supply chain, improving customer satisfaction and increasing loyalty.

Retail Industry.

C3 Solutions is a leading provider of innovative software solutions that optimize supply chain operations for companies worldwide. With the increasing demand for digital transformation in the retail industry, there is a significant opportunity for C3 Solutions to focus on the Retail Industry. The Retail industry is facing significant challenges such as high competition, margin pressure, and demand for an enhanced customer experience. C3 Solutions' Yard Management System (YMS) and Dock Scheduling System (DSS) can address some of the critical pain points of the retail industry by optimizing supply chain operations, reducing operational costs, and improving customer satisfaction. The integration of IoT in the retail industry presents a massive opportunity for C3 Solutions to leverage its expertise and provide customized solutions to retail customers, thereby opening a new revenue stream.

66% of retailers that were surveyed are already using at least one form of connected technology and this has led to significant improvements in customer experience and overall sales (*Research Report: The Impact of Emerging Technology on CX Excellence*, n.d.). IoT software facilitates the consumer journey, making it easier to shop for products and services. It even helps retailers gain better insight into the needs of their customers, which in turn, enables them to offer more personalized solutions.

The retail industry faces several global problems and pain points, some of which are:

Inventory Management

C3 Solutions can solve inventory management problems using IoT by implementing a smart yard management system (YMS) and dock scheduling system (DSS) that utilizes sensors, data analytics, and real-time monitoring to provide accurate inventory tracking and management. By utilizing IoT sensors and data analytics, C3 Solutions can provide retailers with real-time visibility into inventory levels and movement, enabling them to optimize inventory levels and reduce the risk of deadstock. With a YMS in place,

retailers can track the movement of inventory within the yard and ensure that goods are stored in the most efficient manner (*Columbus, 2023*). Additionally, with a DSS, retailers can optimize dock scheduling to ensure that inventory is moved in and out of the warehouse as efficiently as possible, reducing the risk of delays or bottlenecks in the supply chain. Customers will choose C3 Solutions for inventory management over others because of their extensive experience and expertise in providing YMS and DSS solutions. C3 Solutions has a proven track record of helping retailers improve inventory management and reduce costs by optimizing yard and dock operations. C3 Solutions can provide value proposition to customers by offering a comprehensive YMS and DSS solution that integrates with existing warehouse management systems and provides real-time data and analytics. This allows retailers to make informed decisions about inventory levels and movement, leading to improved efficiency and cost savings. End customers will benefit from IoT in inventory management as it can lead to better inventory accuracy, faster order fulfillment, and improved customer service. With real-time visibility into inventory levels, retailers can ensure that products are in stock and available for customers to purchase, leading to increased customer satisfaction and loyalty.

Customer Engagement

C3 Solutions can use IoT to help retailers enhance customer engagement by providing a personalized and seamless shopping experience. By leveraging IoT devices, retailers can collect data on customer preferences, behaviour, and purchase history, which can be used to offer tailored recommendations and promotions. IoT devices can also be used to create a more interactive and engaging in-store experience, such as providing customers with personalized product information and offers on their mobile devices as

they walk through the store. C3 Solutions' Yard Management System (YMS) and Dock Scheduling System (DSS) can be integrated with IoT devices such as beacons, sensors, and smart shelves to help retailers better understand customer behaviour and preferences. For example, sensors can be used to track foot traffic in-store, while beacons can send personalized offers and promotions to customers' mobile devices based on their location in the store. This can help retailers drive sales and build brand loyalty by providing a more personalized and engaging shopping experience. Customers may choose C3 Solutions for their IoT-powered customer engagement solutions due to their experience in the yard management and dock scheduling systems industry, as well as their expertise in IoT integration. Additionally, C3's YMS and DSS solutions have been proven to help retailers improve efficiency, reduce costs, and enhance customer satisfaction. C3 can provide value proposition to customers by offering a comprehensive suite of IoT-powered customer engagement solutions that can be customized to meet their specific needs. Additionally, C3 can offer implementation and support services to ensure that retailers can quickly and easily integrate IoT devices into their operations. End customers can benefit from IoT in retail customer engagement by enjoying a more personalized and engaging shopping experience. By leveraging IoT devices and data, retailers can offer tailored recommendations and promotions, making the shopping experience more efficient and enjoyable. Additionally, IoT devices can be used to provide real-time inventory information, reducing the likelihood of out-of-stock situations and ensuring that customers can find the products they are looking for.

Supply Chain Optimization

C3 Solutions can use IoT to solve supply chain optimization problems in the retail industry by providing real-time visibility and control over the entire supply chain. IoT

sensors can be placed on products, vehicles, and warehouses to collect data that can be analyzed to optimize the supply chain, reduce costs, and improve efficiency.

By using IoT, C3 Solutions can offer several benefits to customers, such as:

1. Improved visibility: IoT sensors can provide real-time visibility into the location and condition of products and vehicles, allowing retailers to track inventory levels and identify any issues in the supply chain.
2. Predictive maintenance: IoT sensors can also be used to monitor the condition of equipment and vehicles, enabling predictive maintenance and reducing downtime.
3. Optimization of routes and schedules: IoT data can be analyzed to optimize routes and schedules, reducing transit times and improving delivery accuracy.
4. Reduced costs: By optimizing the supply chain, retailers can reduce costs associated with inventory management, transportation, and warehousing.

C3 Solutions can provide a value proposition by offering a comprehensive supply chain management solution that includes IoT sensors, analytics, and real-time visibility. This solution can help retailers reduce costs, improve efficiency, and deliver a better customer experience. Customers may choose C3 Solutions over others because of the company's experience in providing supply chain management solutions, as well as its expertise in IoT technology. C3 Solutions has been in the business of providing yard management systems (YMS) and dock scheduling systems (DSS) for over 20 years, and has a proven track record of delivering innovative solutions to its customers. In addition, C3 Solutions offers a flexible and scalable solution that can be tailored to meet the unique needs of each customer. By working closely with customers, C3 Solutions can provide a customized solution that addresses their specific pain points and helps them achieve their business goals. End customers will benefit from IoT in supply chain optimization by receiving their products more quickly and efficiently, with

reduced risk of delays or errors. This can help to improve customer satisfaction and loyalty, ultimately leading to increased revenue and profitability for retailers.

Manufacturing & Logistics.

With the Internet of Things (IoT), the world is undergoing a technological revolution. BlueWeave Consulting, a leading strategic consulting and market research firm, in its recent study, estimated that the size of Global Internet of Things (IoT) in Logistics Market was worth USD 37.41 billion in 2021. Global IoT in logistics market size is projected to grow at a significant CAGR of 14.0%, reaching a value of USD 93.85 billion by 2028. IoT in logistics market across the globe is booming because of the technology advancements that assist the logistics industry in seeing rapid transformation and growth.

C3 Solutions should consider IoT in Logistics and Manufacturing as another business strategy as it can provide immense benefits to the company and its clients. The logistics industry is experiencing a rapid change with the advancement of technology, and the implementation of IoT in logistics and manufacturing can help solve problems like supply chain optimization, asset tracking, and maintenance. C3 Solutions can use IoT to enhance its existing Yard Management Systems (YMS) and Dock Scheduling Systems (DSS) products to provide better tracking and management of assets, reduce downtime, improve safety, and ultimately, increase efficiency in logistics and manufacturing operations. Moreover, with the rising demand for e-commerce and same-day delivery, implementing IoT in logistics and manufacturing can help C3 Solutions stay competitive in the market by offering innovative solutions to their clients. By investing in IoT, C3 Solutions can also explore new revenue streams and expand its customer base beyond the retail industry. The challenges faced by IoT implementation in logistics and manufacturing can be overcome by working closely with clients to understand their specific needs, providing personalized solutions, and ensuring data

privacy and security. Therefore, C3 Solutions should consider IoT in logistics and manufacturing as a strategic opportunity to stay ahead of the competition and provide better value to their clients.

IoT can also assist businesses in maintaining regulatory compliance by providing a digital audit trail with precise timestamps and quick and accurate reports. This can help companies adhere to local legal and regulatory obligations and minimize litigation risks. Furthermore, C3 Solutions can explore the potential of IoT in fleet management to optimize resources and space utilization. IoT-based tools for fleet management can assist businesses in streamlining their overall workflow by gathering real-time data on the availability and condition of each vehicle. C3 Solutions can use this data to make informed decisions and predictions about future inventory requirements for the company, monitor product physical characteristics, and update asset information automatically without manual effort.

C3 Solutions can also leverage IoT to automate warehouse operations and optimize resource and space utilization. By using accumulated analytics data, smart warehouses and logistics centers can improve forecasting and inventory management. C3 Solutions can also incorporate augmented reality (AR) technology, which can provide real-time information and guidance to logistics workers, reducing errors and improving inventory accuracy.

Dock Scheduling Operations

Dock scheduling is a critical component of logistics operations, and any inefficiency in the process can lead to significant costs and delays for businesses. With the emergence of the Internet of Things (IoT), there are several opportunities for companies like C3 to improve their dock scheduling operations and increase efficiency. Following are four actionable recommendations for C3 to explore IoT in their dock scheduling operations.

1. Real-Time Tracking and Analytics

One of the biggest advantages of IoT technology in logistics is the ability to collect real-time data and analytics. C3 can leverage IoT-enabled sensors and tracking devices to monitor the location and status of shipments and trucks. By collecting this data, C3 can analyze historical trends and make informed decisions about scheduling, resource allocation, and other logistics operations. Additionally, C3 can use this data to identify areas of improvement in their dock scheduling operations and optimize their processes to minimize wait times and increase efficiency.

2. Mobile Technology and Automation

C3 can also explore mobile technology and automation to improve their dock scheduling operations. By providing mobile devices to drivers and other logistics personnel, C3 can streamline communication and improve the flow of information between different parties involved in the logistics process. Additionally, C3 can leverage automation to reduce manual processes and increase efficiency. For example, C3 can use IoT-enabled sensors and robotics to automate loading and unloading processes, reducing wait times and increasing productivity.

3. Predictive Maintenance

Another area where C3 can leverage IoT technology is predictive maintenance. By installing IoT-enabled sensors on trucks and other equipment, C3 can monitor the condition of their assets in real-time and predict maintenance needs before they become critical issues. This can help C3 minimize downtime and reduce maintenance costs, ensuring that their assets are always in optimal condition.

4. Improved Customer Experience

Finally, C3 can use IoT technology to improve the customer experience. By providing real-time tracking information to customers, C3 can improve transparency and build trust

with their customers. Additionally, C3 can use IoT-enabled sensors and analytics to optimize delivery routes and reduce wait times, ensuring that their customers receive their shipments as quickly and efficiently as possible.

Timeline

As C3 plans to release its IoT products in the retail industry, manufacturers & logistics, and dock scheduling, it is essential to consider the timeline for each sector's product launch. The release timeline may vary based on various factors such as market trends, customer needs, and competition. Here is a proposed timeline for each sector's product launch:

Retail Industry: C3 should prioritize releasing IoT products for the retail industry as it is the sector that is expected to grow the fastest in the coming years. As per a report by Grand View Research, the global retail IoT market size is expected to reach \$94.4 billion by 2025, growing at a CAGR of 18.8%. Thus, C3 should launch its retail IoT products in the first phase of its product launch. C3 can initially release IoT products like RFID tags and sensors that can help retailers monitor their inventory levels in real-time. Retailers can use this data to track inventory movement, optimize store layouts, and improve customer experience. As C3 is already working with a major retail chain, they can leverage their existing relationship and pilot their IoT products with a few stores before rolling them out on a larger scale.

Manufacturers & Logistics: The manufacturing and logistics sector is the backbone of the supply chain, and C3 can gain a competitive advantage by offering IoT products that can help manufacturers and logistics companies optimize their operations. According to a report by Market Research Future, the global IoT in the manufacturing market size is expected to reach \$45.3 billion by 2025, growing at a CAGR of 28.4%. To start, C3 can focus on providing IoT products for warehouse and inventory management. C3 can provide sensors that monitor the temperature and humidity of the warehouse, ensuring that the products are stored under the

right conditions. Additionally, C3 can provide IoT products that track the location of the products in the warehouse and provide real-time updates to logistics companies regarding the status of their shipments.

Dock Scheduling: The dock scheduling process is a critical part of the supply chain, and any delays or inefficiencies in this process can lead to significant losses for logistics companies. C3 can offer IoT products that can help logistics companies optimize their dock scheduling process. C3 can offer sensors that monitor the arrival time of the truck and provide real-time updates to logistics companies regarding the status of their shipments. Additionally, C3 can provide mobile apps linked to the central scheduling system, enabling the companies to locate and notify their personnel of where they need to be and when. With IoT-enabled dock scheduling, logistics companies can reduce waiting times for trucks, optimize the scheduling process, and improve the overall efficiency of their operations.

Overall, the timeline for launching IoT products in each sector should be based on market trends, customer needs, and competition. C3 can start by prioritizing the retail industry, followed by manufacturers & logistics, and finally, dock scheduling. C3 can leverage its existing relationships with customers and pilot its IoT products before rolling them out on a larger scale. By adopting a phased approach to product launch, C3 can ensure that its IoT products are well-received by customers and provide maximum value to their operations.

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Part 2 Product /Service Portfolio

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Product/service portfolio

[10]The goal of C3 should be to create a fully automated reservation and access control system. [11]Both c3 and Deutsche Telekom are dedicated to helping their clients succeed, which means they offer complementary products and services. Logistics companies can benefit from the combined expertise of C3 Solutions, which assists with yard capacity optimization and gate congestion, and Deutsche Telekom, which offers its customers dependable and high-speed telecommunications services to help them stay connected and manage their businesses smoothly. C3 can achieve increased automation. This can be done by the implementation of IOT edge devices.

Benefits/Justification of using edge IOT devices: -

[12][13] There are several ways in which edge IoT devices might aid C3 bookings. Edge IoT devices can collect data in real time on C3 reservation metrics including occupancy and usage patterns. This information can be utilized to better allocate resources and provide a better service to customers. Equipment monitoring and early detection of potential maintenance issues using Edge IoT devices constitutes predictive maintenance. This has the potential to improve dependability and decrease downtime. Using Edge IoT devices, the check-in process may be automated, removing the need for human intervention and enabling clients immediate access to reserved resources. Edge IoT devices can be operated and monitored remotely, lowering overhead costs and maximizing productivity. C3 reservations can save money with the help of edge IoT devices by minimizing the expenses of maintenance, manpower, and equipment replacement through more efficient use of available resources and less downtime. The main IOT implementation we can focus on are: IOT edge temperature control device

IOT edge temperature devices:

Schneider Electric's EcoStruxure IT is an Internet of Things-enabled product for managing the climate of server rooms and data centers in real time. It monitors environmental conditions with the use of sensors and machine learning algorithms to keep temperatures and humidity at ideal levels while minimizing energy use.

Integration of Schneider Electric's EcoStruxure IT with C3 Reservations: -

[7][8][9] Application Programming Interfaces (APIs) or other integration methods can be used to connect Schneider Electric EcoStruxure IT to the C3 Reservations platform. The following are the procedures required to integrate C3 Reservations with Schneider Electric's EcoStruxure IT:

First, you should figure out what you hope to achieve by integrating these systems. Which environmental parameters are you interested in tracking? What sorts of bookings do you need to handle? Which methods of improvement are you hoping to put into play? The success of the integration depends on your ability to define its scope in a way that reflects your needs. To put the integration into action, it is necessary to acquire API credentials from EcoStruxure IT. To accomplish this, one first sign up for an EcoStruxure IT account and then implement the API instructions provided by the company. You can set up

the API connection between EcoStruxure IT and C3 Reservations once you have the API credentials. Setting up the API connection parameters include entering information such as the API endpoint URL, authorisation token, and other credentials.

Step Two, connect EcoStruxure IT and C3 Reservations by Mapping Data Fields. The first step is to identify the data fields that must be shared between the two systems, and then to assign values to those fields. After the data fields have been mapped, environmental elements including temperature, humidity, and energy consumption can be monitored in real time. Administrators can be made aware of any potentially dangerous situations through the use of triggers and alerts.

Finally, you can maximize resource use and save operational expenses by implementing optimization measures. EcoStruxure IT's analytic and machine learning features will be put to use to better regulate temperature and cut down on power use. Make sure the integration is working properly by testing and validating it after it has been implemented. This includes making sure the two platforms are in sync with one another, keeping an eye on the environment in real time, and checking to see if optimization techniques are producing the desired results.

Overall, businesses who couple Schneider Electric's EcoStruxure IT with C3 Reservations have a robust tool at their disposal for handling reservation management and keeping tabs on the temperature and humidity of their data centers and other edge computing facilities. Efficiency is increased and downtime is decreased because to the integration's real-time monitoring, optimization, and cost reduction.

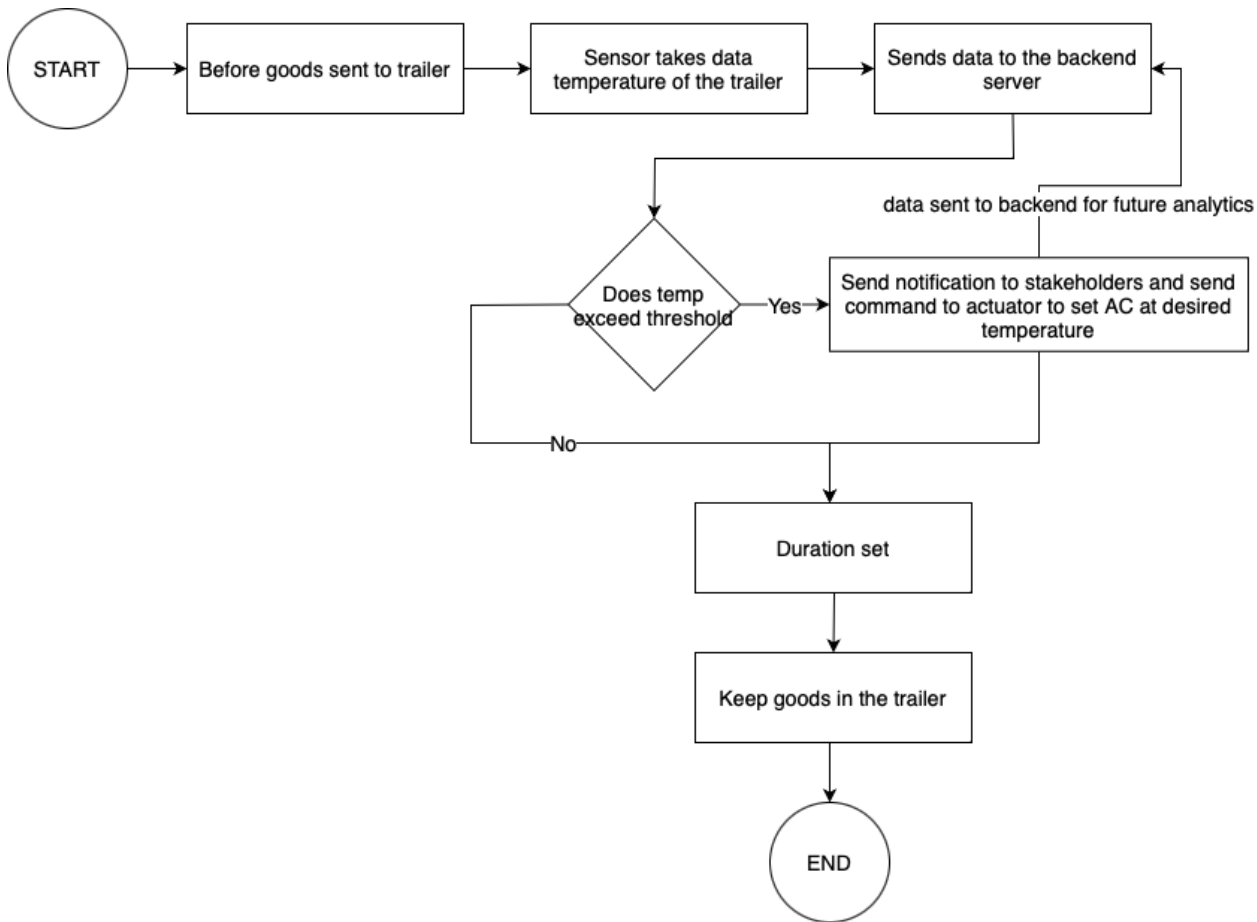
In more detail:-[5]

By connecting Schneider Electric's EcoStruxure IT to C3 Reservations, users can see their data center's capacity and efficiency in real time, as well as keep tabs on the status of their power and cooling systems. Here's a high-level look at several possible integration strategies: [6]EcoStruxure IT Gateway device installation: The EcoStruxure IT Gateway connects the on-premises network to the EcoStruxure IT cloud platform. The hardware can be set up on an appropriate server, linked to the network by Ethernet cable, and tweaked via USB and serial console connections.

Data center hardware such as Uninterruptible Power Supplies (UPS), power distribution units (PDUs), cooling units, and sensors can be connected to the EcoStruxure IT Gateway via compatible communication protocols such as SNMP or Modbus. Using a web browser or mobile app, users can set up the EcoStruxure IT platform to keep tabs on and manage their data center's infrastructure. The platform monitors and reports on data center environmental elements such as temperature, humidity, and power consumption in real time.

EcoStruxure IT's application programming interface (API) lets users build bespoke integrations with other software systems or platforms, such as C3 Reservations. With the EcoStruxure IT platform, users may manage their data center's capacity and energy efficiency by retrieving statistics on power consumption, temperature, and other environmental elements via the API.

Process Flowchart:



Before goods are stored in a trailer the temperature is checked. If the temperature exceeds the threshold a notification is sent to the stakeholders involved and the actuators are activated to set the temperature to the desired temperature. Then the duration is set and the goods are stored in the trailer for the given set duration.

Table for Functions and requirements [3][4]

Tech functions	Hardware Requirements	Software Requirements
Temperature Control	Schneider Electric EcoStruxure IT can work with a range of hardware products such as Uninterruptible Power Supplies (UPS), power distribution units (PDUs), cooling units, and sensors. The specific hardware requirements will depend on the size, complexity, and specific needs of the data center or edge computing environment being managed.	EcoStruxure IT is a cloud-based solution, which means that users need a reliable internet connection to access and use the platform. The minimum internet speed recommended is 1 Mbps upload and download speed.
	Schneider Electric provides a range of hardware solutions that are designed to	The platform can be accessed through a web browser or a mobile app, so users

	work seamlessly with EcoStruxure IT. These solutions include the Smart-UPS with APC SmartConnect, which provides cloud-based monitoring and management for UPS systems, and the NetShelter SX, which is a rack enclosure system that provides cooling, power distribution, and cable management solutions.	need a device that is compatible with the latest version of their preferred web browser or mobile operating system. For web browsers, EcoStruxure IT supports the latest versions of Google Chrome, Mozilla Firefox, Microsoft Edge, and Safari. For mobile devices, the EcoStruxure IT app is available on iOS and Android devices.
	Other third-party hardware solutions may also be compatible with EcoStruxure IT, as long as they meet the necessary requirements for integration.	To integrate Schneider Electric EcoStruxure IT with other platforms or applications, users may need to have some programming knowledge or access to software development resources. EcoStruxure IT provides a range of APIs that can be used to develop custom integrations with other software systems or platforms..

Security Features

[1]EcoStruxure IT's User Access Management features granular role and permission assignment, so administrators may tailor security to individual users' needs and duties. This restricts access to private information and settings to only those who need it.

[2]EcoStruxure IT has built-in network security capabilities that may ward off cyberattacks and keep sensitive information safe. Firewalls, Intrusion Detection and Prevention Systems, and Virtual Private Networks (VPNs) are all examples of such security measures.

EcoStruxure IT uses robust encryption techniques, including AES-256, to encrypt data at rest and in motion. The security of sensitive information is enhanced by this measure.

EcoStruxure IT's support for two-factor authentication (2FA) means that users can log in with a password and one other form of identification, like a security token or biometric data. This aids in preventing hackers from gaining access to the system.

EcoStruxure IT was built with compliance in mind, thus it adheres to guidelines like the GDPR and PCI DSS (Payment Card Industry Data Security Standard).

EcoStruxure IT's in-built monitoring and alerting features allow for instantaneous detection and mitigation of potential security issues.

In sum, the data center and edge computing environments are better protected from cyber attacks thanks to Schneider Electric's EcoStruxure IT. To counteract emerging vulnerabilities and threats, Schneider Electric also offers routine security upgrades and fixes.

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