Case Study Assignment   
SAP Customer Analysis: Royal Greenland

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# Part 1: Review Royal Greenland customer story materials

**Activity 1: Identify key stakeholders and explain their roles**

**Key Stakeholders:**

1. SAP Project Team:
   * Project Manager: Oversees the entire project, ensuring it stays on schedule and within budget. Acts as the main point of contact between SAP and Royal Greenland.
   * SAP BTP Specialist: Responsible for the technical aspects related to SAP Business Technology Platform (BTP), ensuring proper integration and functionality.
   * SAP Extension Suite Developer: Involved in creating consumer-grade apps using SAP Extension Suite.
   * SAP BTP SDK for iOS Developer: Focuses on developing native mobile apps for iOS using the SAP BTP SDK, providing features like offline capabilities and push notifications.
2. SAP Ecosystem Partner (Trifork Smart Enterprise A/S):
   * AppHaus Network Member: Collaborates with SAP in co-innovation and co-development, contributing expertise in design thinking and app development.
   * Design Thinking Expert: Utilizes a design thinking approach to create user-friendly and intuitive apps in collaboration with SAP.
   * App Developers (iOS and Web): Actively involved in the development of the native iPhone app, iPad app, and Web-based app.
3. Royal Greenland Stakeholders:
   * Corporate IT Manager (Lars Bo Hassinggaard Jensen): Plays a crucial role in overseeing the entire digital transformation project and ensuring alignment with the company's goals.
   * Fishermen: End users of the mobile apps, submitting catch data through the native iPhone app.
   * Procurement Staff: Utilizes the iPad app and Web-based app for entering additional information, approving procurements, and managing the back-office processes.
   * Back-Office Staff: Involved in the approval of fish procurements and handling further processing and storage of data.
4. Other Stakeholders Identified in Customer Story:
   * Authorities: Mentioned in the future plans, where apps could be used to help authorities find boats that are lost at sea.
   * Customers: Indirectly impacted as the digitalization process enhances product transparency, meeting customer quality control and product-traceability requirements.
   * Additional Scenarios for Development: Includes building an e-commerce platform for buying fishing equipment, financial tools for fishermen, and an information portal for fishermen to connect with the company

**Activity 2: Identify digital transformation goals**

Royal Greenland’s digital transformation goals are:

* Automate Processes:
  + Objective: Streamline and automate manual processes such as catch registration, procurement, and supply chain management to improve overall operational efficiency.
  + Expected Outcome: Reduction in processing time, elimination of paperwork, and increased accuracy in data entry.
* Reduce Errors or Waste:
  + Objective: Minimize errors and reduce waste in procurement data entry and supply chain processes.
  + Expected Outcome: Improved data accuracy, lower risk of noncompliance, and efficient utilization of resources.
* Enhance Sustainability and Compliance:
  + Objective: Ensure compliance with legal and customer quality control requirements, particularly related to Marine Stewardship Council (MSC) certification for sustainable fishing.
  + Expected Outcome: Strengthened commitment to sustainability, transparent documentation of goods, and adherence to certification standards.
* Optimize Procurement Operations:
  + Objective: Optimize the catch registration process and better allocate procurement staff to handle incoming loads, improving procurement efficiency.
  + Expected Outcome: Faster time to market, optimized resource allocation, and streamlined procurement operations.
* Simplify Accounting and Tax Review:
  + Objective: Simplify accounting processes and facilitate tax reviews for both fishermen and the company.
  + Expected Outcome: Reduced complexity in financial processes, minimized errors in accounting, and improved tax compliance.
* Strengthen Market Position and Competitiveness:
  + Objective: Enhance Royal Greenland's market position and gain a competitive advantage among the region's fishermen.
  + Expected Outcome: Improved supplier loyalty, increased catch data accuracy, and a competitive edge in the seafood industry.
* Explore Additional Scenarios for Development:
  + Objective: Innovate and explore additional scenarios for development, such as building an e-commerce platform, helping authorities find lost boats at sea, and providing financial tools for fishermen.
  + Expected Outcome: Diversification of services, increased support to fishing communities, and further alignment with sustainability goals.

**Activity 3: Explain which digital transformation component is impacted**

The following digital transformation component is impacted: Business Process Transformation. An example of this is Impact on Business Process Transformation:

Description: The implementation of mobile apps and digitalization of catch registration, procurement, and supply chain processes significantly transforms the traditional manual workflows into streamlined, automated processes.

Example: The shift from manual, paper-based catch registration to a digital process using mobile apps (native iPhone and iPad apps) has revolutionized how fishermen submit catch data. Previously, the process involved filling out paperwork in freezing conditions and walking long distances to procurement offices. With the mobile app, fishermen can now quickly and digitally submit catch data, including legally required signatures, from the convenience of their location. This not only automates the catch registration process but also eliminates the physical paperwork and associated challenges.

**Activity 4: Identify key metrics to demonstrate SAP solution value**

Key metrics that could demonstrate the value or success of the SAP implementation are:

* Digitalization of Purchase Orders:
  + Metric: 70,000 purchase orders processed digitally instead of on paper.
  + Rationale: This metric showcases the successful transition from manual, paper-based procurement processes to digital processing. It reflects efficiency gains, reduced paperwork, and a more streamlined procurement operation.
* Time-to-Market Optimization:
  + Metric: Reduced time taken for catch registration and procurement processes.
  + Rationale: Measure the time saved in processing catch data and procurement, highlighting the efficiency improvements achieved through the digitalization of these processes.
* Accuracy in Catch Data Entry:
  + Metric: Percentage reduction in errors related to catch data entry.
  + Rationale: Demonstrates the improvement in data accuracy by moving from manual entry to digital submission, reducing the risk of errors and noncompliance.
* Supplier Loyalty and Satisfaction:
  + Metric: Supplier loyalty index or feedback ratings.
  + Rationale: Gauges the impact of the SAP solution on strengthening relationships with local fishermen, providing insight into supplier satisfaction and loyalty.
* Cost Reduction in Accounting Processes:
  + Metric: Reduction in accounting and tax review processing costs.
  + Rationale: Quantifies the financial benefits realized through simplified accounting processes, showcasing cost reduction and increased efficiency.
* Number of Fishermen Using Mobile Apps:
  + Metric: Adoption rate - number of fishermen using the mobile apps.
  + Rationale: Indicates the success of the solution in engaging end-users (fishermen) and demonstrates the user-friendly nature of the mobile apps.

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# Part 2: Understand SAP BTP capabilities

**Activity 1: Identify SAP BTP technology capabilities**

**SAP BTP technology capabilities:**

* Application Development:
  + SAP BTP provides tools and services for developing custom applications, including both native and web applications. It supports various programming languages and frameworks, allowing developers to create innovative and scalable solutions.
* Integration:
  + SAP BTP facilitates seamless integration between different applications, systems, and data sources. It offers integration services to connect diverse components within an organization's IT landscape, enabling a unified and connected environment.
* Database and Data Management:
  + SAP BTP includes robust database and data management capabilities. It supports SAP HANA as a powerful in-memory database, allowing organizations to manage and analyze large volumes of data in real-time. The platform also provides data warehousing and analytics services.
* Analytics and Business Intelligence:
  + SAP BTP offers advanced analytics and business intelligence tools to derive insights from data. It includes services for data visualization, reporting, and predictive analytics, empowering organizations to make informed decisions based on data-driven intelligence.

**Activity 2: Identify the SAP BTP capabilities needed to achieve customer goals**

Royal Greenland will utilize the following SAP BTP capabilities to achieve their digital transformation goals:

* Integration, as this will be crucial in connecting various components of the solution. It will enable the seamless integration of data from the mobile apps (native iPhone and iPad apps) with SAP HANA®, SAP Integrated Business Planning for Supply Chain, and the SAP ERP application. This integration ensures a unified flow of information across the organization, from catch registration to back-office processing.
* Application Development (SAP BTP SDK for iOS), as this will be employed to create native mobile apps for iPhone and iPad. These apps allow fishermen to submit catch data, validate licenses, and provide required signatures. The SDK provides essential features such as offline capabilities, push notifications, and device registration, enhancing the user experience for fishermen.
* Database and Data Management (SAP HANA), as this will be used to store and manage the large volumes of data generated through catch registration, procurement, and supply chain processes. SAP HANA's in-memory database technology ensures real-time processing and analysis of data.
* Analytics and Business Intelligence, as this will be utilized for reporting and deriving meaningful insights from the collected data. This includes analyzing catch data, procurement trends, and other relevant information. The platform's analytics tools contribute to informed decision-making and strategic planning.

# Part 3: Review the end-to-end SAP Solution

**Activity 1: Describe the end-to-end SAP solution**

The end solution has the following components:

* The end-to-end SAP solution for Royal Greenland involves a comprehensive set of components that seamlessly integrate to streamline seafood procurement and supply chain processes. At the front-end, the solution includes three key mobile applications:
  + App 1 (Native iPhone App): This application is designed for fishermen, allowing them to quickly and digitally submit catch data, validate licenses, and provide required signatures, all from the convenience of their location.
  + App 2 (Native iPad App): Tailored for staff at procurement stations, this app enables the entry of additional information such as catch texture, quality, temperature, and weight. The data is automatically delivered to back-end systems for further processing.
  + App 3 (Web-Based App): Back-office staff use this web-based app to approve fish procurements based on the data collected from the mobile apps. It serves as the interface for processing and validating the information received.
* The back-end of the solution is powered by SAP Business Technology Platform (SAP BTP), which acts as the underlying foundation connecting all elements. SAP BTP provides essential capabilities, including:
  + Integration: SAP BTP's integration capabilities link the mobile apps with SAP HANA®, SAP Integrated Business Planning for Supply Chain, and the SAP ERP application. This ensures a cohesive flow of information throughout the seafood procurement and supply chain processes.
  + Application Development (SAP BTP SDK for iOS): The platform's application development tools, specifically the SAP BTP SDK for iOS, facilitate the creation of native mobile apps for iPhone and iPad, enhancing the user experience for fishermen.
  + Database and Data Management (SAP HANA): SAP HANA, as part of SAP BTP, serves as the robust database and data management system, handling the storage and real-time processing of large volumes of catch data, procurement information, and supply chain data.

**Activity 2: Describe considerations for system design and development**

The project team will need to consider the following when building the end-to-end solution:

* Computing Models – consider that the team must assess the computing models based on how end-user interaction and data flow through the solution. This involves deciding on the optimal combination of Compute, Network, and Storage resources. The choice between OnPrem, Cloud, or a Hybrid model will depend on factors such as scalability, accessibility, and data processing requirements.
* Architecture – consider that the deployment architecture is a critical decision. The team needs to determine whether to opt for a Private, Public, Hybrid, or Multi-Cloud architecture. The choice should align with the scalability needs, data security requirements, and the accessibility of the solution.
* Operating Systems and Platforms – consider that compatibility across the solution is vital. The team needs to ensure that all components, including SAP BTP, operate seamlessly together. Compatibility considerations should extend to both the front-end applications and the back-end systems, fostering a cohesive and integrated environment.
* Application Development – consider that the nature of the application development should align with end-user conditions and data requirements. Mobile applications (native iPhone and iPad apps) should be optimized for usability in various conditions, including potential offline scenarios for fishermen in remote locations. The Web-based app should provide a user-friendly interface for back-office staff.
* Programming Languages – consider that The project team must decide on the programming languages for app development. Given that native iPhone and iPad apps are mentioned, languages like Swift might be considered for iOS development. The Web-based app may involve languages such as HTML, CSS, and JavaScript. Consistency in programming languages ensures a streamlined development process.
* Data Analytics – consider that understanding the type of data that needs to be captured and analyzed is crucial. The team should define data analytics requirements for deriving insights from catch data, procurement trends, and supply chain processes. This involves selecting appropriate tools and techniques within SAP BTP for effective data analysis.
* Security – consider that security considerations should cover users and data at multiple layers. Assessing which of the five information security layers (environment, system, application, process, and organization) will be impacted most by the proposed solution is essential. Implementing robust authentication, authorization, and data encryption measures is imperative to ensure the confidentiality and integrity of user data and sensitive information.

**Activity 3: Draw a diagram to show how data flows through solution**

**Data flow through the solution**

**A diagram of a software flow

Description automatically generated**

**Activity 4:** **Describe technology areas impacted by further solution development**

The technology areas impacted by further development include:

* E-Commerce Platform for Fishing Equipment – because
  + Data Utilization: The data captured through the existing applications can be leveraged to personalize the e-commerce experience. Fishermen preferences, past purchases, and catch data could inform product recommendations. Additionally, integrating real-time inventory data with the procurement and catch data can ensure accurate stock levels and timely deliveries.
  + Additional Data: The e-commerce platform may require additional data, such as inventory status, supplier information, and product details. Integration with financial data can streamline payment processes. Security considerations become critical due to the sensitive nature of financial transactions.
  + Technology Considerations: Integration between the e-commerce platform and existing systems (ERP, procurement) is crucial. Security measures, including secure payment gateways and data encryption, need careful implementation. Consideration of user authentication for secure transactions is essential.
* Apps to Help Authorities Find Lost Boats at Sea – because
  + Data Utilization: The existing location data captured through the mobile apps can be repurposed for real-time tracking of fishing vessels. Historical location data can aid in creating predictive models for search and rescue operations. Integration with weather and sea condition data could enhance the accuracy of locating lost boats.
  + Additional Data: Incorporating additional data sources such as satellite imagery, weather reports, and maritime traffic data can enhance the effectiveness of the app. Security measures must be stringent to prevent unauthorized access to vessel tracking information.
  + Technology Considerations: Integration with external data sources is critical. Secure APIs for data exchange and ensuring compliance with maritime regulations are essential. Geospatial technology for precise tracking and coordination with maritime authorities require careful implementation.
* Financial Literacy Tools for Fishers – because
  + Data Utilization: The financial data captured through the apps can be used to provide fishers with insights into their earnings, expenses, and savings patterns. Predictive analytics could assist in forecasting future financial scenarios based on catch data and market trends.
  + Additional Data: Integration with banking and financial institutions for real-time transaction data can provide a comprehensive financial overview. Security measures need to be robust to protect sensitive financial information.
  + Technology Considerations: Integration with financial institutions requires secure APIs and compliance with financial regulations. Implementing user-friendly financial tools within the existing mobile apps may involve enhancements in app architecture and user interface design.
* Overall Technology Considerations – because
  + Security: With the inclusion of financial data and e-commerce transactions, enhancing security measures across the entire system is paramount. This includes secure authentication, data encryption, and compliance with industry-specific regulations.
  + Integration: Ensuring seamless integration between new components (e-commerce, boat tracking, financial tools) and existing systems is crucial for a unified and efficient technology landscape.
  + Scalability: As new functionalities are introduced, the technology infrastructure must be scalable to accommodate increased data volume and user interactions.
  + User Training and Support: Introducing new features necessitates user training and ongoing support to ensure a smooth transition and optimal utilization of the technology by fishermen and other stakeholders.

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# Part 4: Assess how the SAP solution supports digital transformation

**Activity 1: Describe how SAP BTP supports customer digital transformation goals**

SAP BTP plays a pivotal role in supporting Royal Greenland’s digital transformation goals by providing a unified environment that simplifies app development, integration, and data management. The platform enables the seamless development of consumer-grade mobile and web apps, as showcased in the customer story, allowing for efficient digitization of critical processes such as catch registration and procurement. The use of SAP BTP facilitates co-innovation and collaboration with partners like Trifork, enabling the creation of intuitive, user-friendly applications. Additionally, SAP BTP's capabilities, including integration with SAP HANA® and other back-end systems, ensure a connected and streamlined data flow, optimizing the catch registration process. By leveraging SAP BTP, Royal Greenland can achieve the simplicity, agility, and connectivity required for its digital transformation journey.

**Activity 2: Identify how the SAP solution contributes to the Quadruple bottom line**

|  |  |  |  |
| --- | --- | --- | --- |
| **People** | **Planet** | **Profit** | **Purpose** |
| Impact on Fishermen: The mobile apps developed with SAP BTP simplify the catch registration process for fishermen, reducing paperwork and manual efforts. The intuitive user interface requires zero hours of training, making it accessible to all skill levels. This directly enhances the well-being of local fishermen by providing them with a convenient tool to submit catch data and fulfill sustainability requirements. | Sustainable Business Model: Royal Greenland's commitment to a sustainable business model, as evidenced by the Marine Stewardship Council (MSC) certification, is facilitated by the digital transformation enabled by SAP. The efficient catch registration process ensures accurate documentation, supporting transparency in the supply chain. This sustainable approach aligns with the company's responsibility in the sensitive marine environment of the Arctic Ocean. | Financial Benefits: The digitalization of procurement processes, from catch registration to purchase orders, brings about significant cost savings and efficiency improvements. The streamlined operations and optimized staff allocation result in quicker time to market. Moreover, the ability to capture and utilize data digitally enhances the company's competitive advantage, contributing to increased profits. | Support for Local Fishing Communities: The digital tools developed with SAP BTP not only benefit the company but also contribute to the purpose of supporting local fishing communities. By providing solutions that enhance fishermen's income, streamline processes, and ensure compliance with sustainability requirements, Royal Greenland reinforces its commitment to the well-being of local communities. |