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Mobile Customer Service and Maintenance

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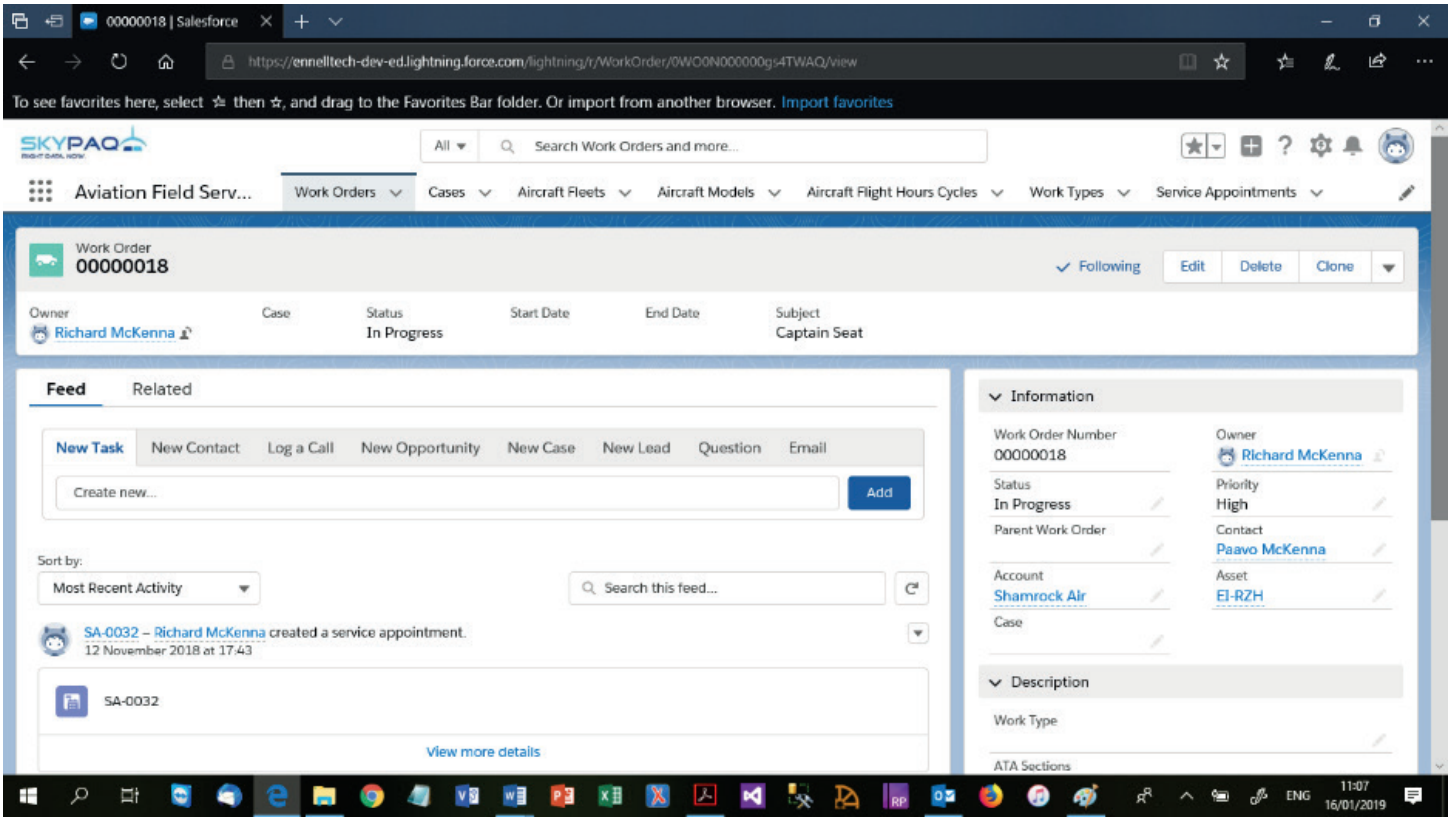
The first step to successfully tackle any new topic is to ask the right questions.
The purpose of this document is to enable you to address issues in the preparation phase of a mobile customer service or maintenance project and to enable the rest of the implementation to go more smoothly.
These questions serve as starting points to discuss mobile implementation goals, implementation planning, project scoping, and gap/fit analyses.



The document is structured into the following topics:

- Implementation Planning
- Security
- Device Selection

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1. Implementation Planning

1. Who are your users? Are they Plant Maintenance/Customer Service Technicians?

2. How many total users? How many users will be in the pilot? How many phases of rollout? What is your time frame for implementation? When do you want to go live? We recommend that you roll out in phases rather than a big bang implementation.

3. Is the ERP (Enterprise Resource System) system fully customized for PM (Project Management) or CS (Customer Service) or is further customization required before starting the mobile implementation? It will take additional time to implement if backend customizing needs to be done.

4. What do you hope to achieve by implementing a mobile customer service or maintenance solution? Some possible benefits are increasing cash flow by generating invoices/receiving payments faster. Define metrics to measure the success of the implementation.

5. Are you replacing an existing mobile asset management solution? If so, what would you like to change about it? Do you need to capture additional data? What does the existing mobile solution interface to? Will you use the same devices or will you need to purchase new ones? Make sure that you do a gap/fit analysis, look at the limitations of the application and determine what enhancements will be necessary.

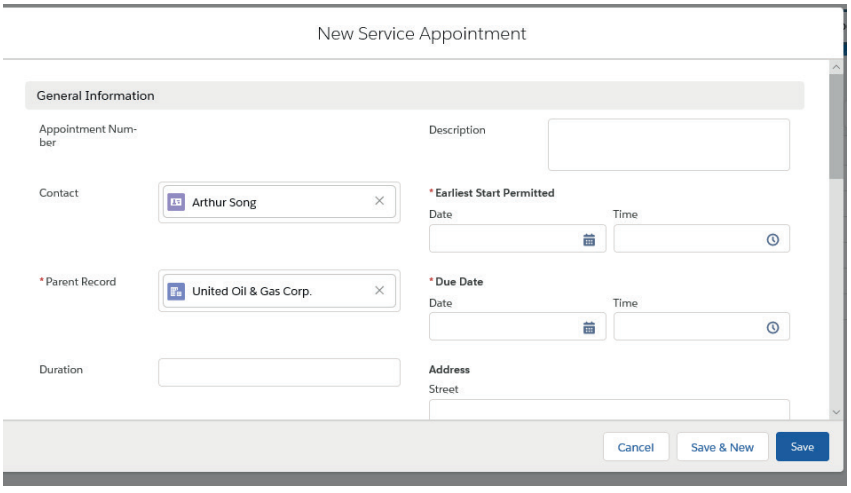
6. What are the system landscape requirements? Which ERP systems are in use? Be sure to check all component requirements, including middleware, backend and devices.

7. Which architecture is used in your ERP landscape? Do you use a typical 3-tier landscape consisting of development, test, production?

8. In which countries will you be implementing the new mobile solution? What languages will you need to support?

9. How will orders/notifications/stocks be assigned to users? Via Personnel number, work center, planner group, or some combination thereof? These are different ways of assigning information to your users, and you'll need to investigate these thoroughly to determine the impact of each alternative.

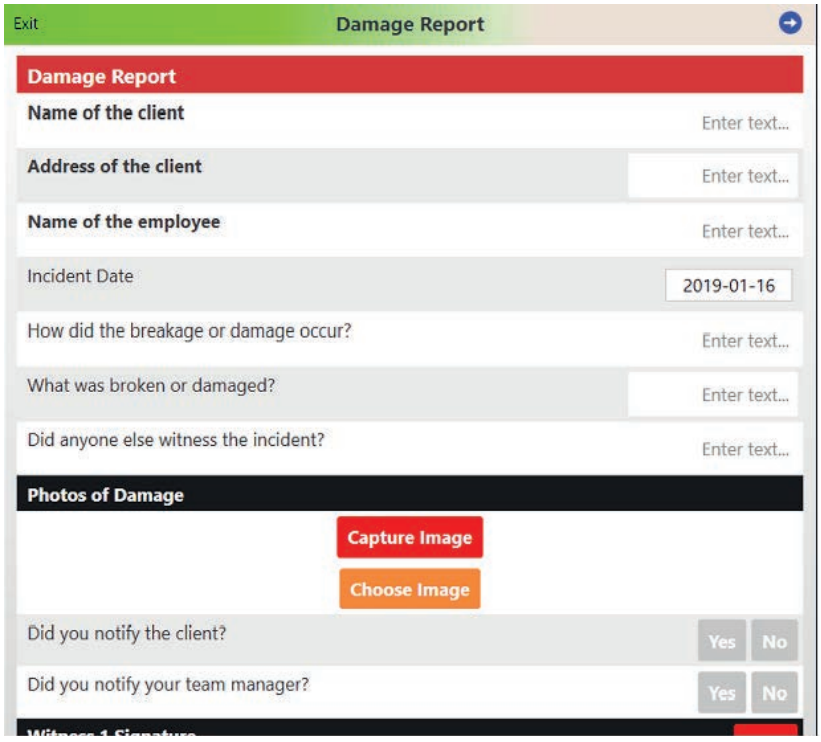
10. Do you plan to use a planning/scheduling software in order to dispatch service orders?



11. What are your data requirements per user? Do you need to define equipment/functional location variants per user? Remember that mobile devices are small and have little memory. You want to limit the amount of data downloaded to just what the user needs for that synchronization period. You have the option of creating specific variants per user.

12. How fast do your synchronization response times need to be? How critical is system availability? For example, do you need to make sure that technicians can synchronize at peak times to meet service levels of agreement? These factors need to be considered when sizing your system.

13. What does your daily data volume look like? How many orders, notifications need to be downloaded to the device on a daily basis? Because mobile devices have limited memory available, downloaded data should be limited to the data required for one synchronization period. How many total equipments, functional locations, business partners, and measurement points need to be replicated to the middleware?



14. How will you operate your mobile environment? How will patches and upgrades be deployed to your users? How will you administer the environment? Mobile users are usually distributed, which offers special challenges for supporting these users. You should define this process and procedures as a part of the mobile implementation.

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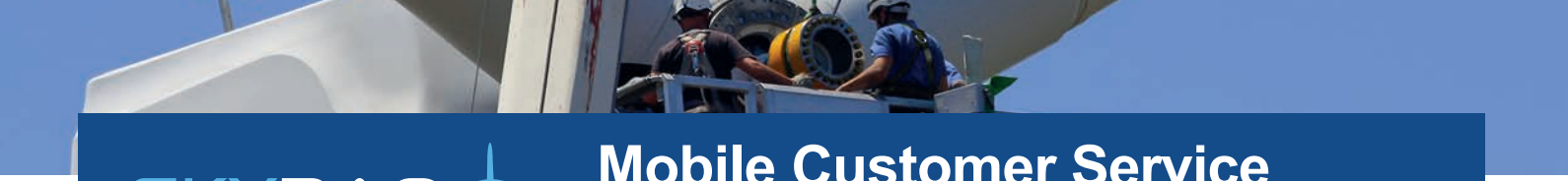
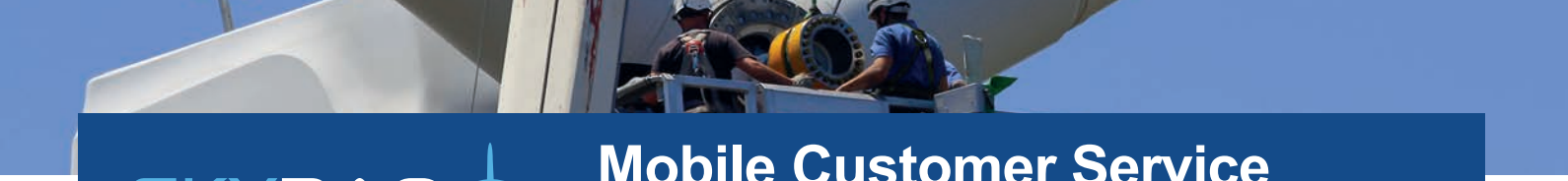
15. Which of the functionality is necessary in order to run your business and to meet your requirements:

		Read	Create	Change	Delete (local)
Order		X	X	X	X
	Details	X		X	
	Operations	X	X	X	X
	Components	X	X	X	X
	Object List	X			
	Attachments	X	X		X
Notification		X	X	X	X
	Details	X		X	
	Items	X	X	X	X
	Tasks	X	X	X	X
	Activities	X	X	X	X
	Attachments	X	X		X
Time Confirmation		X	X	X	X
Material Confirmation		X	X	X	X
Functional Location		X	X	X	X
	Details	X		X	
	Classifications	X			
	Measuring Points	X			
	Attachments	X	X		X
Equipment		X	X	X	X
	Details	X		X	
	Classifications	X			
	Measuring Points	X			
	Attachments	X	X		X
Measurement Documents		X	X	X	X
Service Report / Customer Signature		X	X	X	X
Checklist		X	X	X	X



16. Order Management:
    a) Which order types are used?
    b) Which information should be displayed to the technician?
    c) Should the technician be able to create local orders (e.g. when back office is not available during weekend)?
    d) How do you manage the assignment of several technicians to a work order? Do you assign an operation to each technician? Do you use operation splits?
    e) Which kind of orders do you have? Do you always plan them for a fixed date and time or do you also have orders (e.g. maintenance orders) which are not planned on a fixed basis and just have to be executed within a specific time frame?
    f) Do you plan to have a kind of status handling in order to enable the technician to report their current status (e.g. accepted, enroute, onsite, etc.)?
    g) Does the technician require any historical information? If yes, which information is needed?
    h) How do you handle when a technician needs to re-visit the customer? For instance, do you create a new operation?

17. Notification Management
    a) Which notification types are used?
    b) Which information should be displayed to the technician?
    c) For which purpose do you use notifications?
    d) Is a notification always assigned to an order?
    e) How do you assign a technician to a notification?
    f) Should the technician be able to create local notifications (e.g. in case extra damage is noticed?)



18. Time Confirmation
    a) Which times should be confirmed by the technician (e.g. travel time, labor/work time)?
    b) Which type of activity types do you use?
    c) Which kind of information should be captured by the technician while creating time confirmations?

19. Material Confirmation
    a) Is the technician´s van built as storage location in ERP System?
    b) Do you plan to use planned material confirmations (e.g. via order components)?
    c) Do you plan to use unplanned material confirmations (e.g. technician checks current damage and exchanges spare parts based on material available in his van)?
    d) Is it possible that the technician needs to consume material residing in different storage locations?
    e) Is it possible that the technician confirms “bought material” (e.g. technician visits a hardware store and buys the needed material)?
    f) Does the technician need a possibility to order material?

20. Functional Locations
    a) Which information should be displayed to the technician?
    b) Which functional locations should be available on the technician´s mobile device? For instance, only functional locations which are assigned to an order or all functional locations of his service region?
    c) Should the technician be able to create or change functional locations?

21. Equipment
    a) Which information should be displayed to the technician?
    b) Which equipments should be available on the technician´s mobile device? For instance, only equipments which are assigned to an order or all equipments of his service region?
    c) Should the technician be able to create or change equipments?

22. Service Report
    a) Which kind of information should be displayed on the service report?
    b) Is there any specific rule when the technician should be able to create the service report (e.g. validation that everything is completed)?
    c) Is there any current template (e.g. today´s service report) which could be used as basis for the mobile service report?
    d) Is customer´s signature required?
    e) How should the service report be handed over to the customer (e.g. via email, USB stick, printing)?
    f) Should the service report be available in ERP for further reference?

23. Checklist
    a) Which kind of checklists do you have?
    b) Can you provide the current templates as reference?
    c) Do you plan to make analysis on the checklist results in ERP?
    d) When should the technician fill out the checklists? Are there any specific rules? For instance, is it dependent on the order type or the equipment?
    e) Should the customer receive the checklist results?
    f) Where should the checklist results be saved in ERP?

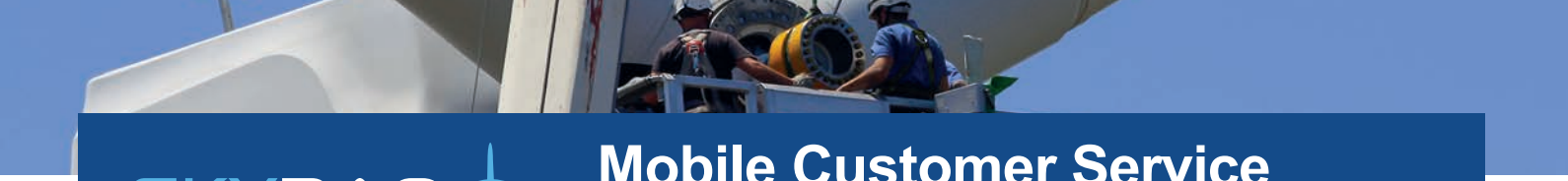
1. How will the users connect? (Wireless LAN, GPRS, VPN, etc.). Different connections will deliver different connection speeds. If you plan to give your users access outside your firewall, you need investigate security measures such as a VPN. Make sure that you provide adequate testing time in your project plan to test actual data volumes and synchronization over the chosen network.

2. What type of security measures will be implemented? (proxy server, VPN, etc.). These measures need to be tested thoroughly. You need to define procedures for security breaches, such as what happens when a device is lost.
3. Is a encryption of the database on the mobile device required?

3. Device Selection

Hardware procurement can be a bottleneck in the implementation. Try to identify the appropriate mobile devices early on in the process, to ensure that they can be delivered in time.

1. Will more than one user use the same device? If so,please evaluate the data load required for all users to determine the load required on the device.
2. What level of data input is required on the device? Is full keyboard entry required? Will touch be suffice? What are the user requirements with regard to data entry?
3. How will the devices to be used? If the devices are going to be used in a plant production environment, you will want to look at more rugged devices capable of surviving this environment.



4. How will the devices be synchronized? Will a wireless LAN be used? Will users need to synchronize off- site? If so, the device will need to have telecommunications access to connect to your Intranet. The landscape will affect the effort required to set up the architecture, i.e. inside/outside the firewall. This can also influence the amount of data required (bandwidth).

5. How often will they synchronize? If a near online connection is desired (i.e. 20 synchronizations per day), you will need to have an higher spec of Server hardware, depending on the number of users synchronizing at one time.

6. In what areas of the world will the solution be used? Is it a global implementation? If so, make sure that the solution will work in all needed areas.

7. How long does the device need to be functional in the user's day? Battery life is a factor in choosing a device. If the battery life is insufficient, the user will need to have a mechanism to charge the device throughout the day, or have a back up battery to exchange.

8. What peripherals will be needed? Do you need barcode or RFID scanners?

SKYPAQ in a nutshell

RIGHT DATA. NOW.

Experts in Enterprise Mobility

salesforce | ISV PARTNER

APSYS AUGMENTED TRUST

Bring data to the point of work.

SKYPAQ – specialist consultants in designing and implementing process and mobility solutions for enterprises.

accenture High performance. Delivered.

IBM

The way we make the life of people easier is by providing easy to use solutions for the mobile world and the desktop. We implement standard ERP Mobile solutions and develop custom applications.

FINNAIR

SR Technics

Customer Reference

Microsoft

Preventative Maintenance

"The potential of synchronizing maintenance data with actual sensor data is for sure a key element supporting the development of PdM analytics and pattern recognition models. The fact that the SKYPAQ eLog system is already synchronized with one of the leading airline ERP tools is a big plus in terms of electronic availability"

SR TECHNICS

SWISS AviationSoftware

Canon

intel

SITA