



End User empowerment for improved Asset Maintenance



Industrial equipment and consumer appliances need to be maintained at scheduled intervals in order to ensure efficiency and longevity of these assets. In this new age of digitization, it becomes important to leverage the benefits of technology around us to manage reporting of incidents with the help of users of these assets by empowering them with easy-to-use technology and processes. Let's find out how common smartphones can be used to improve service management and improve response turnaround time of multi-user assets.



How many times have we found ourselves walking away from a dysfunctional elevator, a printer, an ATM or any other multi-user device? Contrastingly, how many times have we found ourselves reporting the matter back to the company in charge of maintenance of the device? The ratio would be too lop-sided to give the Service Company any opportunity to bring the device back to life, earlier than usual.

Most Original Equipment Manufacturers (OEM) or Service Companies will agree that their response time (and hence the customer satisfaction index) would be higher if only they knew when their widely spread and widely (multi) used equipment had started to fail. An early report could mean a faster response from the Service team and eventually a shorter downtime. In this era of digitalization, users are surrounded with more devices than ever in the history of mankind and that number is only going to increase in the future. Given that hardware will be hardware, companies are constantly focusing on improving their Service Management capabilities to increase customer satisfaction. As we all know, downtime on any device can have disastrous results on the image of a service oriented product company.

So how can technology help here? Smartphone applications in conjunction with Enterprise Applications can vastly influence a company's Service Management capabilities.

The existing Service Management Process

OEMs and Service Companies have, over the last few decades, understood the power of adopting robust Enterprise Applications available in the Customer Relationship Management (CRM) space to cater to their Service Management needs. There are quite a few strong products in the market viz. Siebel (Oracle), Salesforce, etc. that cater to the various Service Management needs of enterprises. The below pictorial image describes how an equipment failure that is identified at a customer site location is reported back to the Service Company.

As you can see on Figure 1, the end users are left out of the whole loop of reporting

directly to the Service Company though they are the most aggrieved party.

An end user would typically report the failure to the Equipment Owner, who in turn would contact the Service Company Call Center and log the service complaint. The Call Center Agent would create a Service Request in the CRM application and assign the same to the right skilled regional Service Engineer to fix the equipment based on the target SLAs. What follows next is standard Service Management procedure.

The reason for the end user being out of the reporting loop was due to the lengthy and cumbersome mechanism involved in

reporting a downtime. End users are not expected to know the Asset Number of the equipment nor would they have the patience to endure a long winding call with the Call Center Agent or IVR to report the failure. Though Service Companies have put their best CRM foot forward to improve end user experience, engaging the consumer community has always been a difficult task.

The advent of Smartphones and the applications that run on these Smartphones changes all that and more. It brings the end users right into the CRM circle but at the same time keeps them as uninvolved as possible.

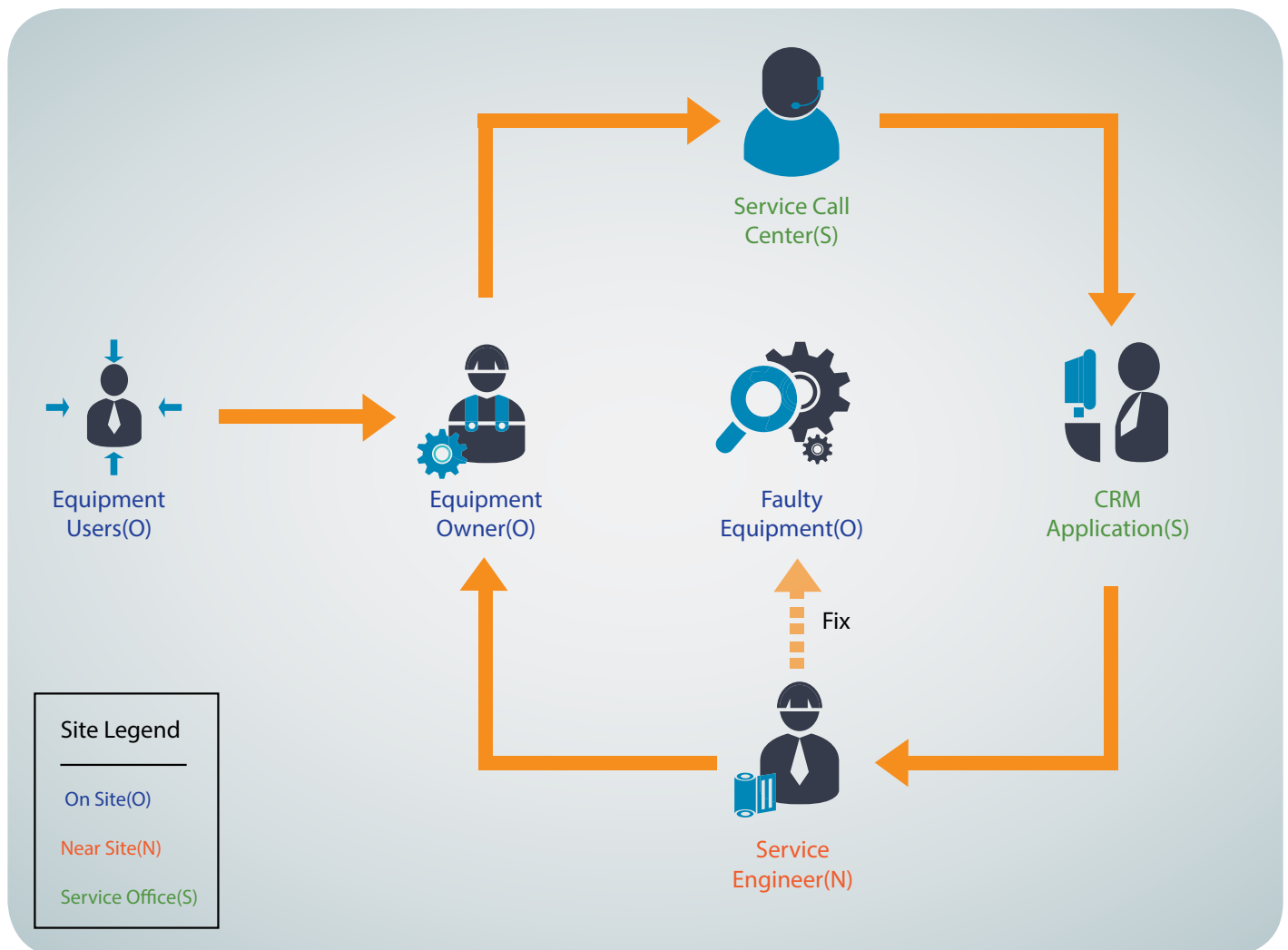
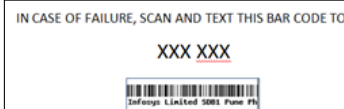


Figure 1: The current reporting mechanism

The Solution: *Real-time CRM Service Management using QR/Barcoding technology*

Android and iOS based devices are one of the most pervasive devices that help bridge this gap. Most of these devices can download a bar code or QR code reader application that can scan and send the code details (usually asset details) to the Service Company. These bar/QR codes can be made unique for an asset, based on international standards, and can contain details such as OEM name, model no., client name, asset location, etc. The same details can be mapped into the CRM application on the Service Company side for ease of tracking on the system side. Once the end user comes across faulty equipment, he can scan the bar/QR code available on the equipment (see sample instruction panel below for bar code) and send the same to the Service Company using Short Messaging Services (SMS) or any other form of transmission.



These details, once received by the Service Company's enterprise CRM system, will create an activity for a Call Center Agent within the CRM system for a follow-up call with the equipment owner. The Call Center Agent will place the call to the owner and seek a confirmation on the equipment status. The Equipment Owner will then check the equipment and report the status back to the Service Company. Once confirmed of an equipment problem, the Call Center Agent will create a Service Request in the CRM application and assign the same to the appropriately skilled regional Service Engineer to fix the equipment based on the target SLAs.

As you can see, the end user is now influential in reporting an equipment failure to the Service Company in an active manner, rather than passive and the Service Company need not refer back or involve the end user for any information once the bar/QR code details are received – thus increasing end user participation in this reporting mechanism. The entire validation process is done through the Equipment Owner.

Application Areas in the Industry

- Any service industry that services multi-user equipment
- Any country due to use of language independent bar/QR coding technology
- Private or Government (dysfunctional public equipment can be reported too)
- Equipment assets with least owner to user ratio will see biggest benefits. Few examples – Elevators, printers, ATMs, soft drink coolers, public utility services, vending machines, etc.
- Production shop floors where large number of equipment is managed by relatively small teams. Reporting of standalone and semi-critical equipment that are not linked to the monitoring dashboard can utilize this bar/QR coding technology
- Work areas where a diverse number of equipment is managed and serviced by a diverse number of vendors or support teams

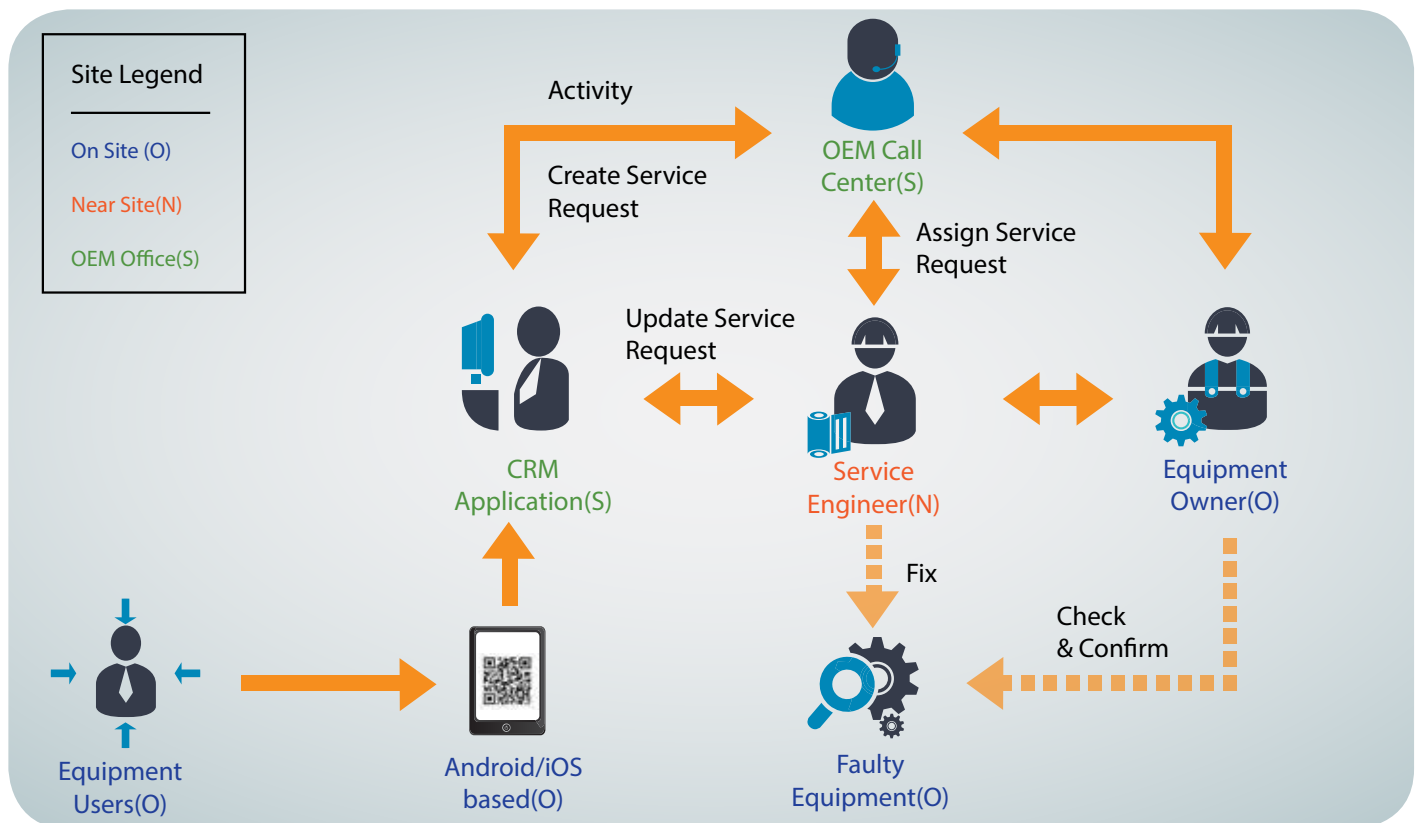


Figure 2: The proposed reporting mechanism

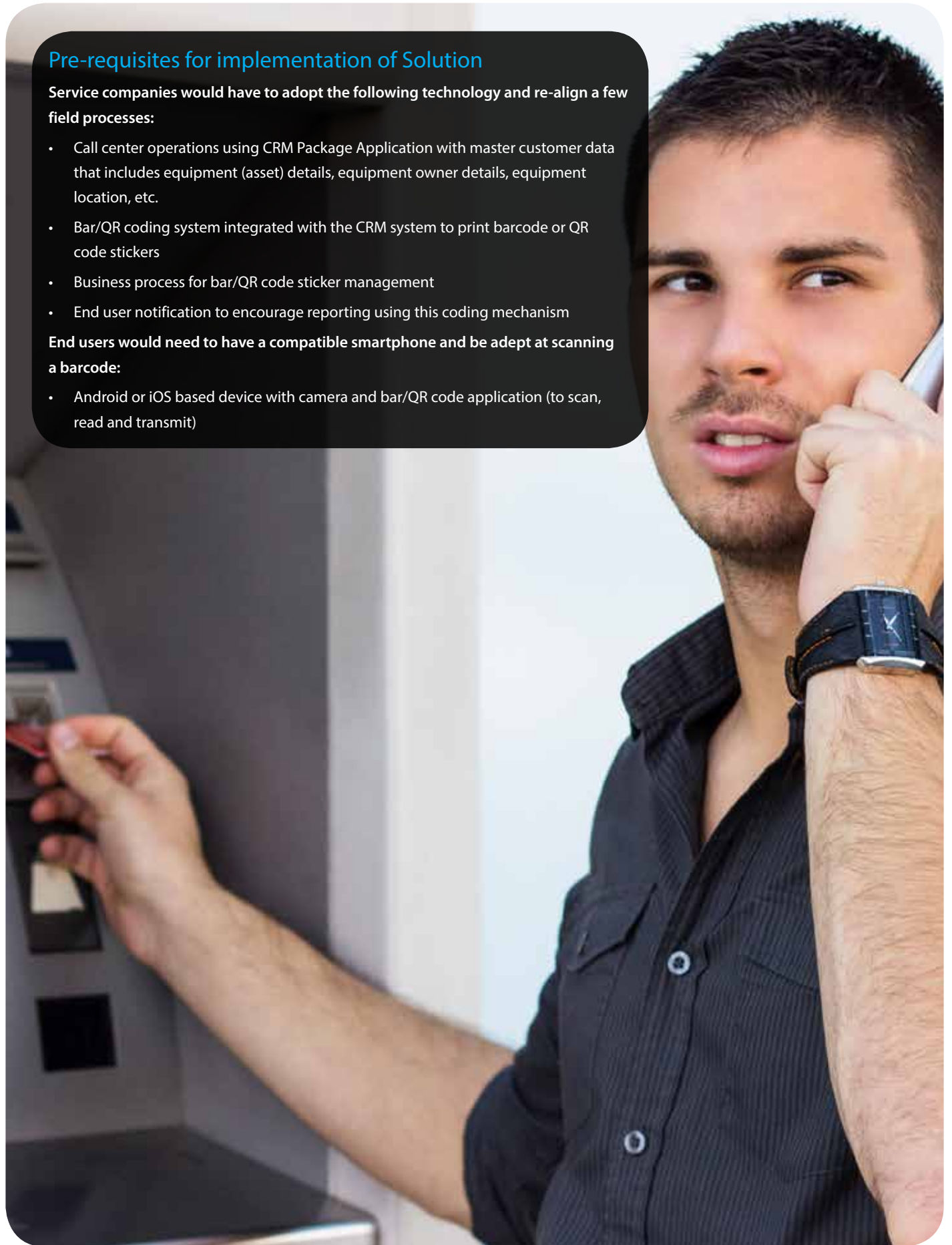
Pre-requisites for implementation of Solution

Service companies would have to adopt the following technology and re-align a few field processes:

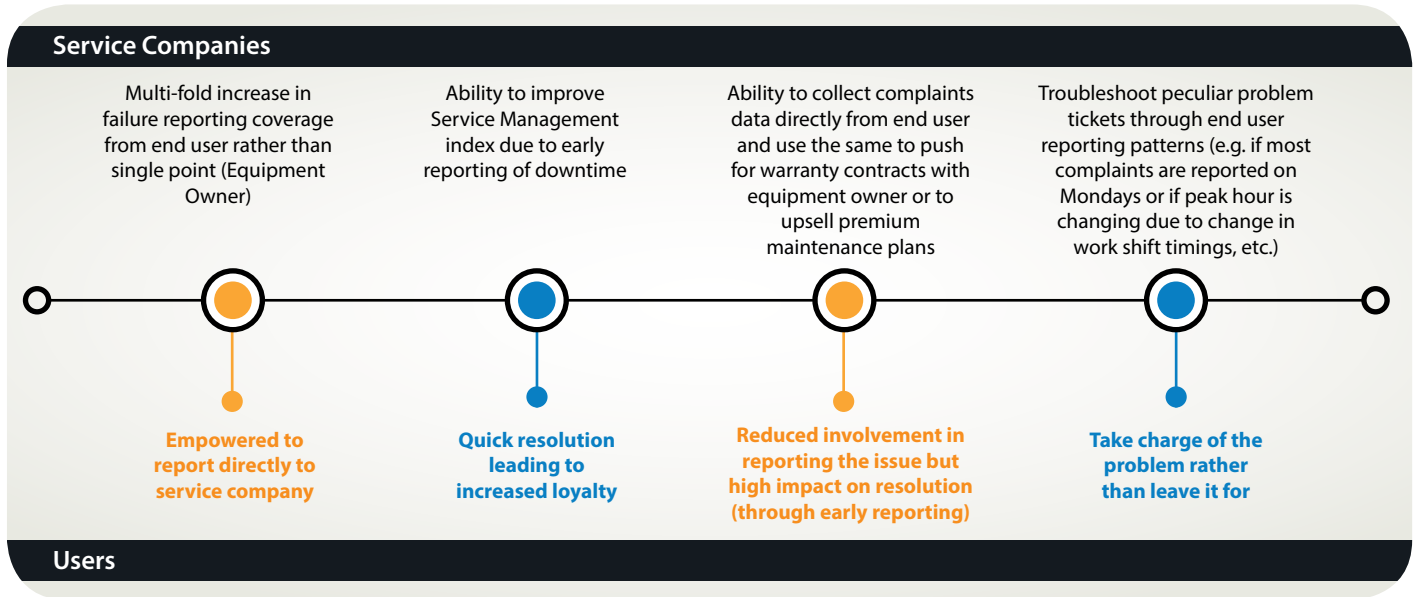
- Call center operations using CRM Package Application with master customer data that includes equipment (asset) details, equipment owner details, equipment location, etc.
- Bar/QR coding system integrated with the CRM system to print barcode or QR code stickers
- Business process for bar/QR code sticker management
- End user notification to encourage reporting using this coding mechanism

End users would need to have a compatible smartphone and be adept at scanning a barcode:

- Android or iOS based device with camera and bar/QR code application (to scan, read and transmit)



Benefits derived by Service Companies:



Potential Challenges faced during solution implementation:

As with any technology innovation, Service Companies may face the following challenges while applying this solution

| Challenge | Description |
|---|--|
| User adoption of bar/QR code applications | Given the wide variety of usage for these types of applications, end users are highly informed about the bar/QR code application usage and this challenge will progressively go away |
| Hoax (false/prank) reporting | Given that the end user will be texting the bar/QR code using a unique cell number, this challenge will also have a low probability of occurrence |

Conclusion

The empowerment of end users with the ability to self-report faulty equipment through a no-fuss reporting mechanism will vastly increase a company's service image. Change, when seen happening through one's own actions, can induce tremendous customer satisfaction. Technology is evolving and until we have the Internet of Things in all aspects of our life, this bar/QR code technology can provide a cost efficient way of increasing the customer satisfaction index for OEMs maintaining multi-user assets and devices. More power to the end user!



About the author

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With over 13 years of industry experience, Avinash has helped execute transformational projects in the customer relationship management (CRM) domain across the US, UK, Middle East and Africa, Japan, and India. He leads the Connected Vehicle Technology domain in the Manufacturing Innovation Initiatives group at Infosys.

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