Writing the great customer experience story with awesome field service

Abstract

The rapid evolution in large-scale field operations across domains like telecommunications and high-tech manufacturing is giving rise to significant workforce management challenges. This white paper aims at understanding these challenges and building a comprehensive blueprint for a next-gen field service solution on cloud, which can help businesses scale-up and bridge the gap between expected and actual levels of customer experience.

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In the telco world, conventional communication service providers (CSPs) have realized that customer experience (CX) is critical for their business and have been investing in service-based solutions and front office help desks. The number of smartphones is predicted to reach a whopping 2.32 billion globally, which has caused organizations to explore solutions that support flexible service requirements.

At the same time, optimization of the complete service journey including the last leg field service — which is one of the most important cogs in the operations support system (OSS) / business support system (BSS) service assurance stack — is crucial for exceptional customer experience.

Such rapid evolution in large-scale field operations in domains like telecommunications and high-tech manufacturing are causing significant workforce management challenges. This white paper aims at understanding these industry challenges and building a comprehensive blueprint for a next-gen field service solution on cloud, which can help telcos scale-up and bridge the gap between expected and actual levels of customer experience.
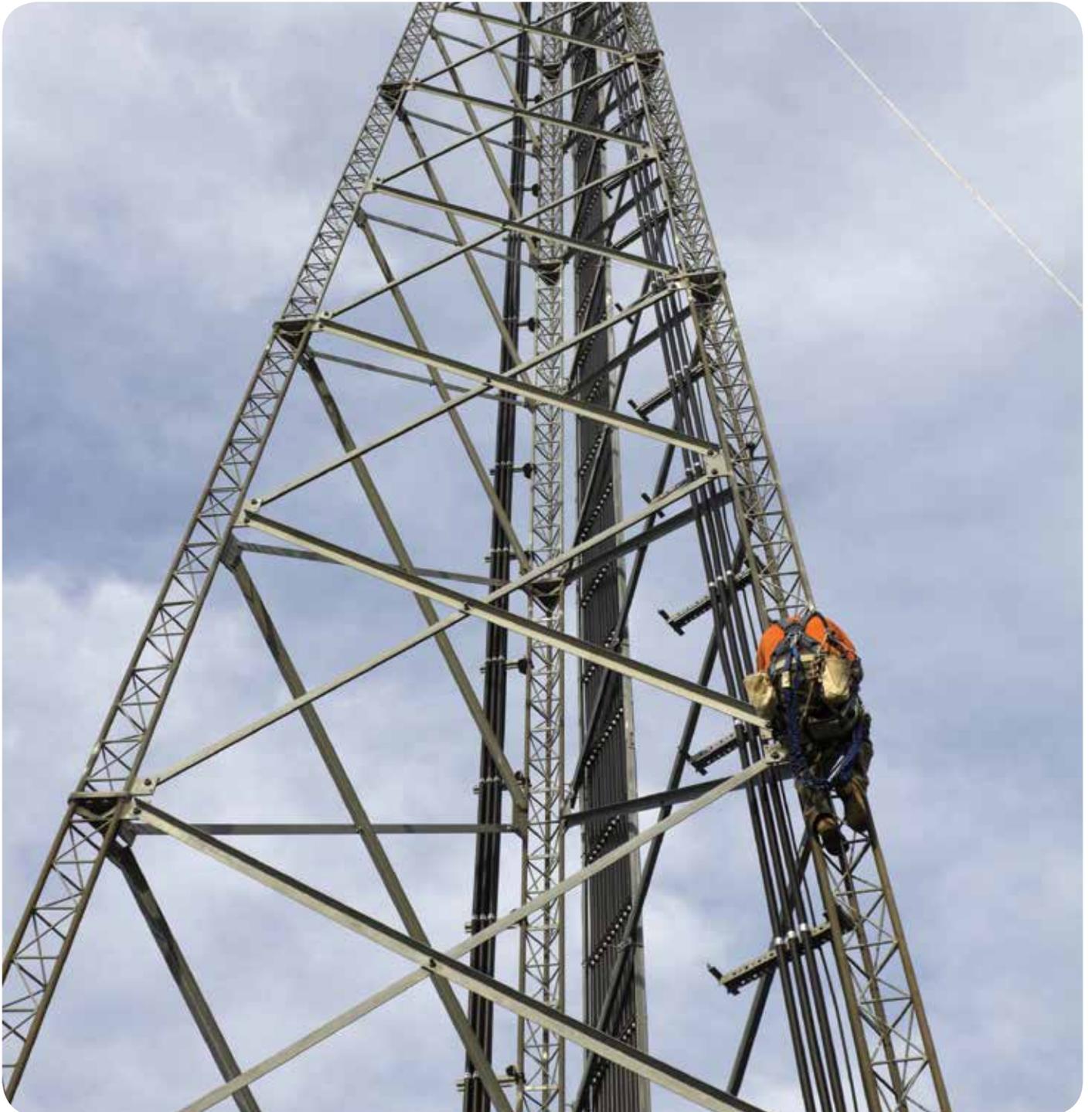
Telco field service 2.0 trends that you cannot miss

Telecommunications is a highly competitive and constantly evolving market. Be it the surge in number of smartphones, data proliferation, or numerous upgrades to infrastructure; the sector keeps posting new challenges to CSPs who are trying to provide the right customer experience. The telecom field service started off as a gamut of manual processes — from dispatching field agents to assessment of network issues on the field. These processes were plagued by mechanical constraints, 'reactive' modes of service, and expensive field trips. Furthermore, the absence of artificial intelligence in field data analysis, forecasting, real-time customer communications, etc., paralyzed the whole field service experience.

In our opinion, in the next few years field service is going to be transformed to keep pace with the following key trends:

- **Advances in data technology**
  There is a need to focus on low-frequency wavelength as 5G would very probably be some 100 times faster than the existing 4G. Further, the focus would be more on the data transferred, rather than on voice.

- **Machine-to-machine (M2M) connections**
  There would be an estimated 27 billion M2M connections by 2020, and self-diagnosis and network monitoring through Internet of Things (IoT) will be a lot different from today. IoT-based predictive or preventive field service operations will automate fault-finding and alerts / notifications.

- **Augmented reality and video streaming**
  Through real-time video chats in mobile-enabled field service solutions, the number of field trips could be minimized, and novices could better perform on-the-field, by having real-time video conversations with peers / supervisors.

- **Reduction in on-the-field administration**
  There will be a reduction in administrative tasks, such as scheduling of technicians, planning service schedules to meet sudden surges in service orders, and more; due to automation or artificial intelligence-powered solutions.

- **Mobile-enabled field service**
  Gartner predicts that two-thirds of the mobile workforce will own a smartphone. This means that for industries like telecommunications, in which half the workforce uses mobile phones, field service solutions must be responsive and sync both online or offline efforts of workers.

To adopt these trends and assimilate them into an organization's landscape seamlessly, our vision is to design an advanced field service solution, which not only imbibes these trends but is also capable of seamlessly integrating with the as–is legacy stack, wearables / IoT, etc., to provide a connected service experience from call center and dispatch to field service.

Five challenges that the current field service has to navigate through

Telcos face a multitude of challenges, which burden their service model. Moreover, with a huge workforce on the field catering to all kinds of service orders — installation, repair, network issues, upgrades, etc. — the pressure increases manifold.

- **Lack of personalized customer experience**
  Need for more personalized customer experience through multiple channels.

- **Poor utilization of resources**
  Field service (FS) teams have limited capabilities to rationalize workload distribution among technicians. As a result, they are often challenged by

inefficient service delivery and technician workload management.

- **Limited automation**
  Field service systems lack innovations like automation of dispatch operations, interactive artificial intelligence (AI) for better service delivery, and IoT-based preventive maintenance.

- **Ineffective predictive analytics**
  Analysis of past history and service patterns need improvements.

- **Disconnected ecosystem**
  Most of the current field service systems are disjointed from customer relationship management (CRM) systems, wherein the technician has no insight into customer details, history of interactions, etc.

Identifying and achieving goals — key for effectiveness

The telco service industry is highly competitive and organizations compete with each other for customer experience and network efficiencies. With complex and varied products, huge workforce management needs, and changing network / data strategies, the sector needs much more than a monolithic platform to support its service and field service needs. Today's field service must provide a solution, which satisfies the following goals:

• Alignment with technology trends and changes in the market

• Adoption of next-gen capabilities – automation, mobility, location-tracking, etc.

• Addressing key business KPIs like:
  ○ Reduced cost of field service delivery
  ○ Reduced field delays and better communication of service status
  ○ Automation in network diagnosis
  ○ Improved quality and faster delivery
  ○ Increased service efficiency
  ○ Improved effectiveness of large territory service requests
  ○ Effective service analytics through reports on the state of the workforce
  ○ Reduced scheduling

• Delivering a connected service experience from device / phone to field.

• Simple, easy-to-maintain, with a lower TCO.

Organizations that meet these goals, would not only move to a smart field service ecosystem, but also meet the metrics which drive business impact and value.

Infosys design principles to structure new-age field service

After a look at the trends, as well as the challenges within the field service ecosystem, we have identified the following design principles that will enable us develop an effective field service solution. These principles will enable the new-age telco to not only meet identified goals, but also address key aspects of customer experience (CX) for customers and user experience (UX) for the technicians:

- **Omnichannel mode of service**
  Gone are the days of multichannel service communication, as in today's modern world, omnichannel service communications are key to winning customers' hearts and votes. In line with this change in trend, the field service platform should provide an adaptive solution which can connect and send communications through channels such as social media, emails, and mobile for a focused, personalized communication. Even post the conclusion of the service delivery, the satisfaction score associated with the on-premises-service could be gauged using social media-based feedback survey.

- **Fleet efficiency management**
  The rise of the connected fleet has a huge potential to change the future of

field service operations. For better fleet management, options which could be looked at are:

- Trip optimization solutions
- IoT-based integration
- Location-tracking such as Uberized field service

These design principles not only help gauge the fleet efficiency across the enterprise, but also enable immediate understanding of driver behavior, real-time customer communication on whereabouts of the arriving technician with his details, etc.

- **Field-to-cash**
  Successful field service units have a faster field-to-cash cycle through seamless interaction with a robust CPQ ecosystem. The next step in field service evolution is effectively selling extended warranty, customized service contracts, and cross-sell / upsell of products. Further, a telco customer wanting to buy outcomes as opposed to services or products will place even more pressure on field service agents to work on configuring, pricing, quoting, and selling service contracts.

- **Optimal network resolution time**
  Smart instructions can be sent through interactive mixed reality or MR, a hybrid

of augmented and virtual reality, where synthetic content can be provided for field service agents to train and repair, leading to efficient network troubleshooting. The field service platform can master the content, but leverage an MR platform like Microsoft HoloLens to provide a training platform for the agents on the field.

- **Predictive / proactive / preventive maintenance**
  IoT would be the next key in the new wave of technology advancement in field service. IoT-based sensors / platforms can not only automate the whole on-field asset / equipment management, but coupled with newer concepts of AI-led historical data read, they can forecast equipment failures for better field service planning or proactive maintenance of equipment.

While these are a few basic design principles to achieve an improved, modern field service administration, there are a plethora of other principles like on-field knowledge, AI-led predictive analysis of field events, capacity planning, service planning with actionable analytics, etc., which if implemented, can deliver the much-needed digitized and improvised field service solution.
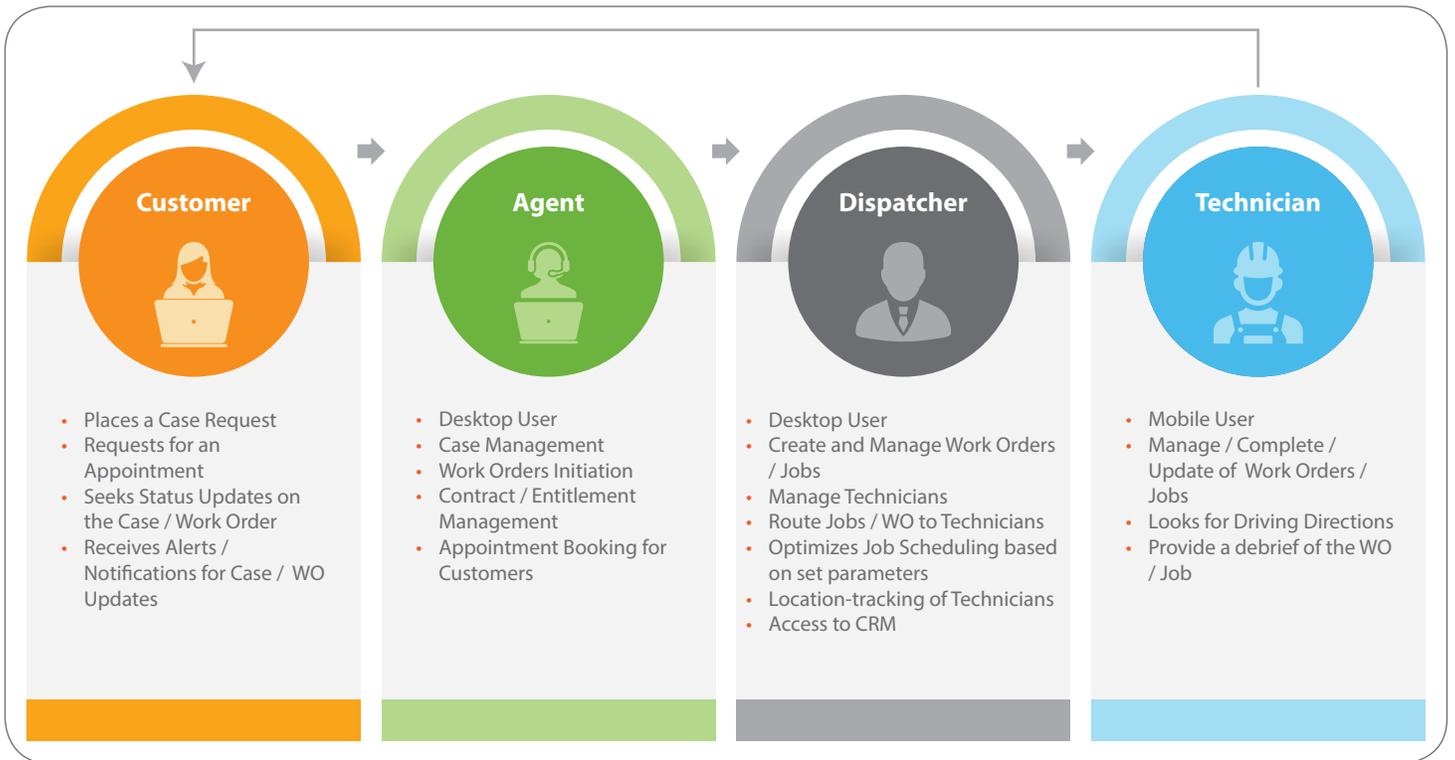

Infosys next-gen FS platform delivered as-a-service

Transformation of field services is just around the corner as many of the major telco players move away from the regular firefighting approach they take on field service.

To address the gap in field service delivery

and improve the focus on customer experience, Infosys has leveraged design principles to build a target platform on Salesforce.com, which can be readily leveraged by telcos for accelerated change and use field service as a new growth

strategy. As a part of this platform, we have conceptualized a next-gen Field Service Lightning (FSL) platform which is built as-a-service on the Salesforce® for Service, Field Service Lightning, Einstein, and Wave Analytics.

Customer	Agent	Dispatcher	Technician
• Places a Case Request • Requests for an Appointment • Seeks Status Updates on the Case / Work Order • Receives Alerts / Notifications for Case / WO Updates	• Desktop User • Case Management • Work Orders Initiation • Contract / Entitlement Management • Appointment Booking for Customers	• Desktop User • Create and Manage Work Orders / Jobs • Manage Technicians • Route Jobs / WO to Technicians • Optimizes Job Scheduling based on set parameters • Location-tracking of Technicians • Access to CRM	• Mobile User • Manage / Complete / Update of Work Orders / Jobs • Looks for Driving Directions • Provide a debrief of the WO / Job

Primary components of the targeted solution platform of Salesforce Field Service are:

Optimized fleet management	• Fleet management – A view of your fleet on-the-field and their work schedule for better planning and ad hoc events, if any • Gantt view of work order (WO) – A configurable Gantt view of all the on-field WOs with an elasticity to move them across technicians or view the details for immediate actions, if any
Automated appointment scheduling	Appointment scheduling is one of the complex needs in telcos for which the platform delivers powerful, automated scheduling and assignment capabilities for large, on-the-field workforce: • Smartly assign and schedule work orders / activities based on defined parameters – skills, availability, location, etc. • Plan work schedules in a batch or drip-feed mode based on business needs.
Optimization / re-optimization of schedule of technicians	For telcos with challenges around WO distribution, especially ad hoc WOs, this capability brings in features like: • Optimization of work schedules / WO distribution across technology • Re-optimization in the event of ad hoc WOs / unplanned leaves, etc.
Preventive maintenance plan for automated asset management	• Deliver automated preventive maintenance plans for assets based on warranty / entitlement information (for example: yearly maintenance of the ADSL connection) • Automate service renewals for existing assets, which enables asset monetization
Mobility interface for on-field technician	The platform also provides responsive mobile user experience to manage and capture all work details like: • Access to customer information as well as field events on-the-go • Digital debrief of activities – photographs, signatures, etc. • Manage assigned WOs • Manage inventory in integration with inventory / billing systems for seamless data exchange
Geo-location tracking	The platform provides location-tracking of the mobile workforce via GPS trace of individuals. This feature enables an Uberized view of the technician's geo-location on the map view for fleet efficiency management — a must-have capability for telcos with fleet-tracking as one of the key field service needs
Interface with devices	Seamless integration with wearables and IoT platform for automation of service / field events like: • Predictive / proactive / preventive maintenance of assets • Automated alerts / notifications for approaching issues, etc.
Artificial intelligence-led field automation	The platform offers AI-led field automation for better planning of field activities like historical equipment analysis to predict breakdown time / future issues, on-field capacity for specific seasons / time of the year, etc.
Service analytics for KPI measurements	Gauging the efficacy of field service processes is a key requirement for any sector. The platform not only delivers out-of-the-box (OOTB) service reporting capabilities, but also advanced reporting capabilities with Wave Analytics, enabling dispatchers / supervisors to gauge key KPIs like tech performance, SLA adherence, aging of WOs, etc.

Conclusion

In today's world, there is a strategic need to modernize field service operations to keep up with the exponential increase in expectations from customer services, and offer streamlined operations across the complete customer journey.

By using design principles to achieve an improved, modern field service administration, telcos can accelerate change and bridge the gap between increasing cost pressures and better customer field service. In addition, a target platform built on Salesforce.com can address challenges caused by rapid evolution in large-scale field operations.

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Bijayita has 14+ years of experience in various domains and technologies across the Oracle and Salesforce suites. She has worked for clients across varied industries such as: telecom, manufacturing, FS, services, etc., and has been instrumental in designing CRM-based sales / service solutions.

At Infosys, she is the competency anchor for Service / Field Service / KM cloud, responsible for solution design, presales / GTM work, and implementation work.

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Karthik Nagarajan is a Salesforce Solution Architect with 12+ years of experience working on Enterprise CRM platforms such as Salesforce.com, Amdocs CRM, and Chordiant. He has been a Solution Architect in multiple CRM Transformation Programs in the Semiconductor, Telecom, and Healthcare domains. His focus areas include Service Transformation, Artificial Intelligence, and User Experience.

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