



Modern field service operations gain the intuitive edge through Cognizant BPaaS

Author – Sivakumar Venkatesan | Co-Author – Gautam Lunawat | Reviewer – Gautam Chopra

Table of content

Introduction	3
Challenges for field service organizations	3
Data value, IoT and data collection	5
The art-of-possible: What can be achieved now	6
Cognizant BPaaS for global field service organizations—a market differentiator	7
Work Allocation Planner tool	10
The benefits of Cognizant BPaaS for global field service organizations	11
Case studies: How Cognizant BPaaS for global field service organizations has helped	12
Summary	14
References	15
Appendix	15

Introduction

Modern field services have changed drastically in the last decade. With the changes come challenges, technological innovations and Cognizant’s end-to-end-business-process-as-a-service (BPaaS) answer to the demands of field service providers (FSPs) for efficiencies and cost savings even as they scale their businesses to meet evolving needs. This guide explores these issues and provides a detailed view of the solution and case studies on how the Cognizant BPaaS for global field services has already helped FSPs anticipate challenges and act, head off problems and accelerate results in 31 countries and 300+ cities.

First, some background: Field service management is the process of coordinating all the operations conducted by a field service business for customers/clients at their location.

Those operations include activities like scheduling and routing; enriching customer experience; managing inventory, logistics and parts planning; overseeing controllership on field budgets; invoicing and accounting; and handling policy violations. Field service companies typically support businesses across all industries.

In the last decade, field service organizations have shifted the way they build and manage their mobile workforces. Led by societal changes, advances in IoT technology advances that underpin field service delivery, and the evolution of core business strategies, the field services industry is taking on a more important role and can affect customer experiences and generate new revenue streams with new types of service requests.

Challenges for field service organizations

Traditionally, FSPs focused on mainly dispatching agents for installations, repairs, or maintenance services. They are now turning their focus to include services like business data collection, mystery shopping, field sales and marketing, market research, field installations, map data collection and food delivery.

Even services companies may not be able to provide everything that is required. A competitive analysis of six solutions that currently exist in market yet do not fully satisfy all the functionalities required for E2E field service management highlight what a comprehensive solution must have and do to satisfy all the required functionalities. Results can be seen in figure 1 below:

	Vendor selection platform	Lead mgmt.	Allocation	Booking / Dispatch	Client notification	Location	Anomaly check	Employee commin	Learning mgmt	Live risk alerts	Expense mgmt	Invoicing	CRM integration	Mobile app compatibility	Travel solutions
CTS	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
Company 1	✘	✔	✔	✔	✔	✔	✔	✔	✘	✔	✔	✔	✔	✔	✘
Company 2	✔	✔	✔	✔	✔	✔	✘	✔	✔	✘	✔	✔	✔	✔	✘
Company 3	✘	✘	✔	✔	✔	✔	✔	✔	✘	✘	✘	✘	✘	✔	✘
Company 4	✘	✔	✔	✔	✔	✔	✔	✔	✔	✔	✘	✘	✔	✔	✘
Company 5	✔	✔	✔	✔	✔	✔	✘	✔	✔	✔	✔	✔	✔	✔	✘
Company 6	✔	✘	✔	✔	✔	✔	✔	✔	✘	✔	✘	✔	✘	✔	✘

Figure 1 Competitive analysis

These new services that the FSPs now provide demand higher levels of technology and skill sets. Some examples include advancements in autonomous driving, augmented reality (AR), virtual reality (VR), and IoT, which requires technicians to support sensors, vast amounts of data and embedded computing.

In the continuously evolving digital world, field service companies face challenges keeping up with costs fluctuations due to the changing environment in the field. They also face risks concerning compliance (data storage and usage must comply with GDPR regulations) and data security concerning peripheral data (IDC, salary, spend, etc.), which is stored, and client proprietary core data, which is not stored. Issues specific to industry demands can be found in figure 2 below.

Figure 2: Hurdles faced by field service companies, according to industry

Industries

Communication, technology, media; transportation and retail

Challenges



High first time fix (FTF)



High travel and expense (T&E) spend



Inventory loss



Productivity loss



Ineffective field personal/walker management

Industries

Telecom; IT; healthcare and life sciences; manufacturing; construction and real estate; transportation and logistics; energy and utilities; oil and gas; banking and financial services (BFSI)

Challenges



Schedule, dispatch and route optimization
Customer, work order, inventory and service contract management



Reporting and analytics



Billing, invoicing, tracking and performance management



Integration and implementation



Training and support

Data value, IoT and data collection

Data value

Data is changing the face of our planet as it contributes to research that helps cure diseases, increase company revenues, improve building structures and create targeted ads. Data, or information, in the computer and in business (especially when it comes to Big Data), refers to information that can be read mechanically as opposed to by humans. Its collection is important for a business or for management, as it becomes the quality information they need to make informed decisions. Data collection hastens progress, allowing companies to stay on top of trends, provide solutions to problems and analyze and transform new information into success.

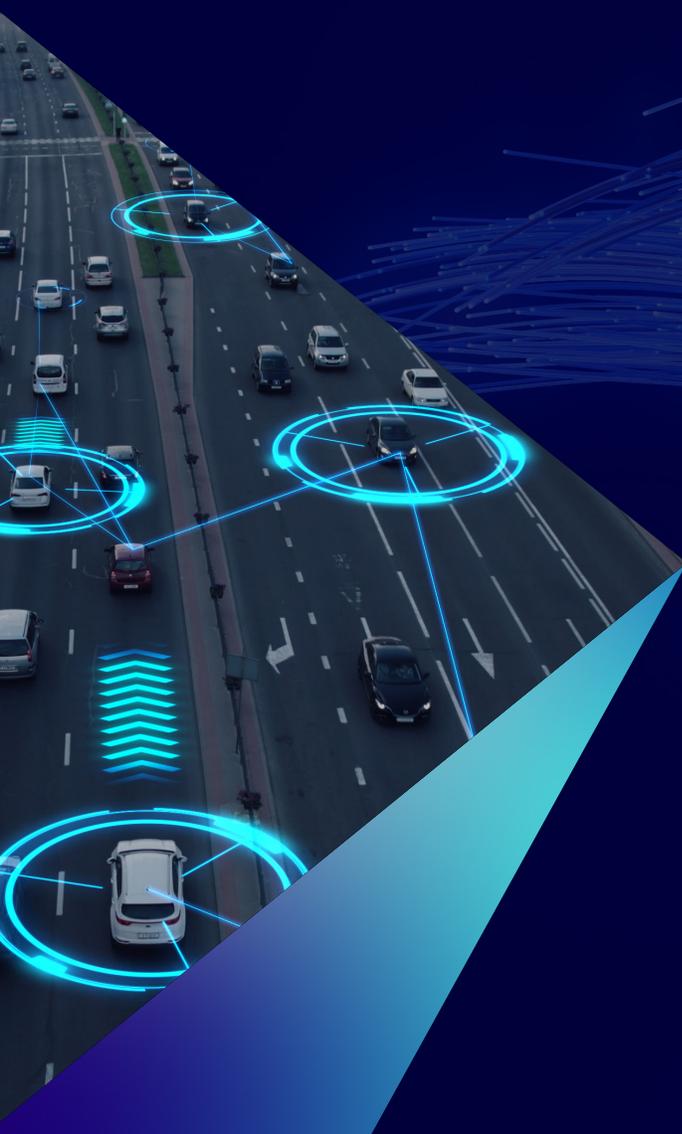
IoT and data collection: ML depends on data

The Internet of Things (IoT), the networking capability that facilitates communication between objects, connected devices and the cloud, as well as between the devices themselves, is making its way into every facet of our lives—from our vehicles to our cities, in the way we shop and how we take care of ourselves.

Meanwhile, computer engineers are simplifying and improving artificial intelligence (AI) and machine learning (ML) technologies with the use of data.

ML training data improves AI performance. Image recognition technology, for example, allows self-driving cars, robots and autonomous flying machines to detect objects; the process that trains the ML algorithm to read and predict, or visualize objects in their natural state, depends on the addition of pictures with annotations. Field data—images in this case, naturalistic data—is collected from the real world. Objects of interest are detectable to cars, robots and flying machines only if they have been trained and have acquired the annotated images—the data.

As ML becomes more widely used, it requires large amounts of data and annotated data (aka labeled data), especially for state-of-the-art neural networks. Many technology organizations crowdsource different information from people in the field and supply it as “golden” training data for ML algorithms, including image label verification, sentiment evaluation, and audio validation to smart camera, translation validation and image capture. The process of gathering exclusive and purposeful data, or “last mile golden data” based on specific requirements, is of utmost importance and requires a customized/contextualized E2E field service management solution. See sidebar for figure 8: Cognizant field ops credentials.



A new dichotomy of excellence and efficiency

The new service types are only just the start of the challenges technicians are facing. In this new high-tech era, many FSP companies struggle in what they feel is an untenable position: Customer expectations are higher than ever, and leaders in field service organizations continue to demand that their operations innovate and do more with less. The service buyer needs end-to-end service management including training, device management, risk management, work allocation and management, status update and reporting, and more. An FSP, for example, currently facing the rising cost of field service delivery needs to optimize the field service process in a way that reduces costs and enhances service quality and customer satisfaction. They must turn the challenge into opportunity—to create a better future and win in the market.

Another area of challenge is the availability of technology solutions that provide the end-to-end

service management that FSPs need to meet their goals. In a 2021 [Gartner Magic Quadrant](#) comparison of E2E products by ClickSoftware, IFS, Microsoft, Oracle and ServicePower currently on the market, some of the product limitations highlighted include longer implementation times, incomplete app suites, low implementation support, high implementation cost, low scalability, minimal dashboards, lack of integration to other ERP, little upgrade/extensibility and high add-ons cost. See figure 2 above for the comparison.

Until now there hasn't been a winning end-to-end service management option that meets customer expectations and overcomes the hurdles of industry and efficiency have been elusive. But with intuitive technologies that help FSPs improve cost savings, scalability, integration, service quality and customer satisfaction, there are solutions to overcome the challenges.

The art-of-possible: What can be achieved now

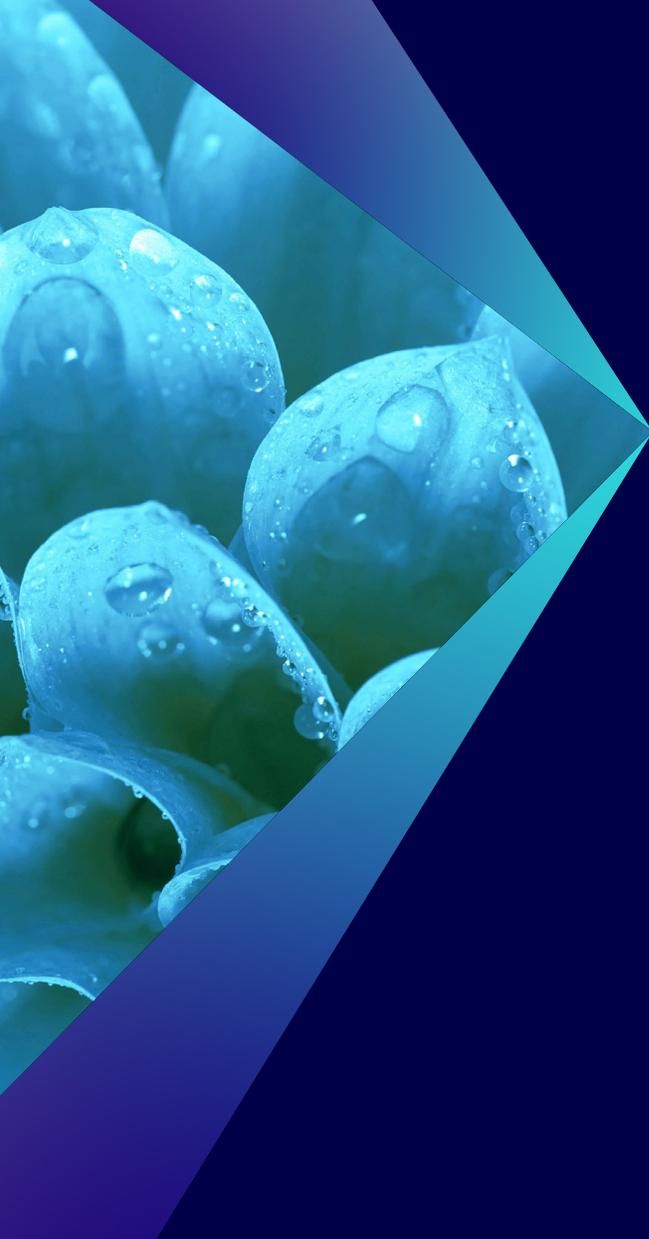
Inventory management, travel and expense management, quality management, work allocation, route optimization, and reporting—along with the real cost savings—that FSPs are looking for can be achieved. A potential solution could be looking into a business process as a service (BPaaS) for field services that combines the best technologies with refined business processes to deliver a solution app suite—a single, connected, cloud platform BPaaS that offers an E2E field ops lifecycle solution.

A comprehensive cloud-platform BPaaS lifecycle solution with the following all-encompassing features can cover all the limitations addressed in the Challenges section:

- Learning management
- Expense management
- Travel solutions
- Lead management
- Vendor selection platform
- Live risk alerts
- Travel and spend analytics through ML
- Reporting—Metrics/Analytics/AI

The good news is FSP companies no longer have to wait to find a cloud-based BPaaS solution that saves on costs and solves their inventory management, travel and expense management, quality management, work allocation, route optimization, and reporting challenges.





84% of field services executives would or do use cloud

84% of field service executives have little or no reservations about using a cloud-based service and many have already adopted it.

source: Service Council, the Boston-based research platform serving service-centric businesses, in Marketsandmarkets.com

Cognizant BPaaS for global field service organizations—a market differentiator

Cognizant BPaaS for field service is an end-to-end cloud-based operations solution that delivers the product and services capabilities to give global FSPs the intuitive edge across their business and drive cost savings. **The solutions we've implemented for inventory management, travel and expense management, quality management,**

work allocation, route optimization, and reporting have saved businesses more than \$25M in savings globally.

Our solution addresses and encompasses 10 field-based services (see figure 3) that simplify and strategize field operations with intuition-driven field solutions (see figure 4).

These Field Services demand a single E2E lifecycle solution



Figure 3. Field-based services. Ten of our digitally driven field solutions address evolving technological field needs

Figure 4: New age field solution



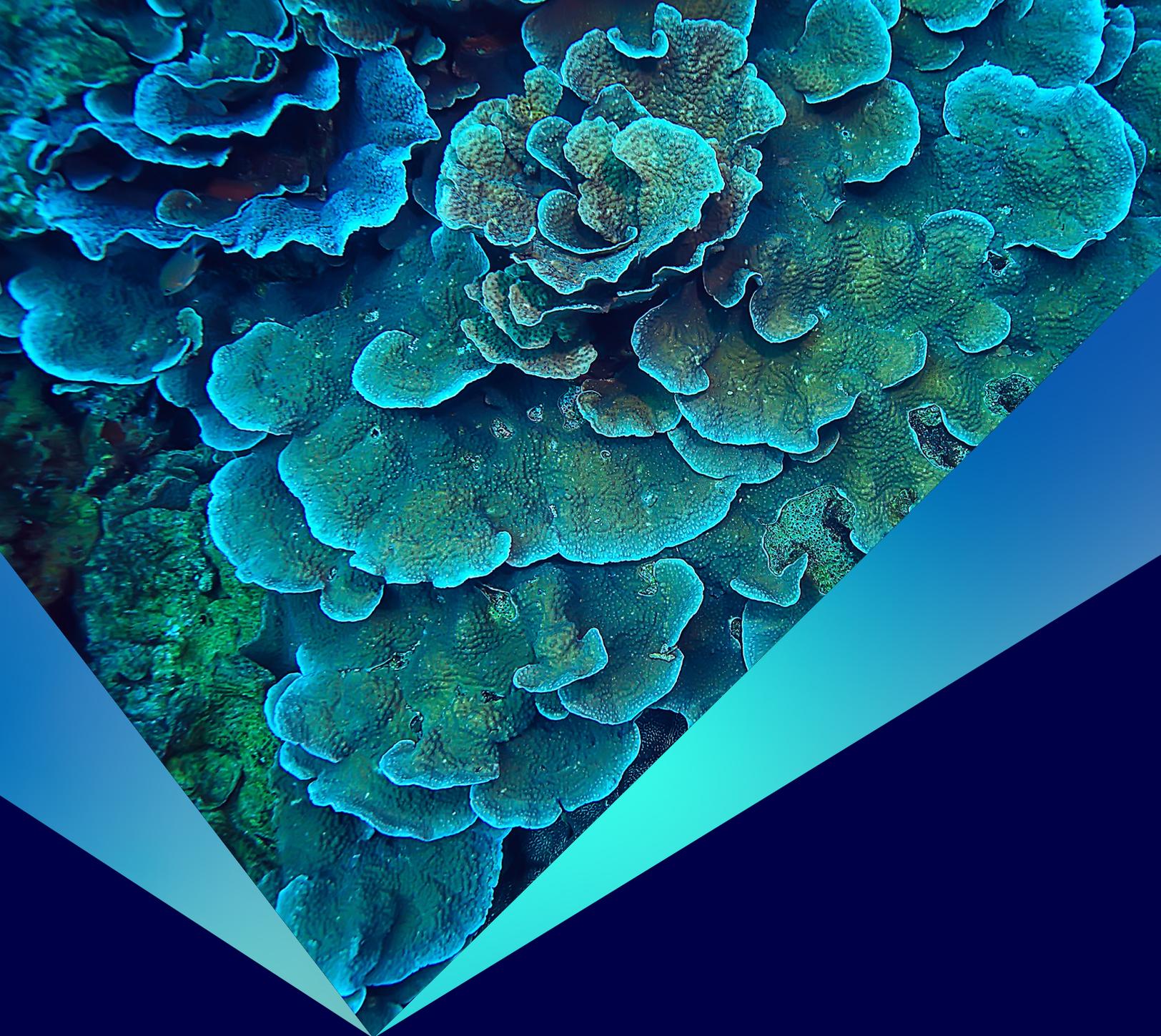
See our E2E field ops lifecycle solution—Cognizant BPaaS—built using Google Cloud in figure 5:

Cognizant value proposition

E2E field ops lifecycle BPaaS solution (build using Google Cloud) covering all the process - steps

Zero surprise transition	Defect free setup	State of art operations	Big data & analytics
Plan IT	Prepare IT	Produce IT	Track & report IT
Vendor selection modules	Global walker base / Managed field network	Work allocation planners	One touch data cuts <ul style="list-style-type: none"> • Transition reporting • Program perf. metrics • Walker update modules • Cost metrics • T&E Desk Metrics • Inventory reporting • Training reports • AI track reporting • Escalation reporting • EWS reporting
Lead qualification platform	Inventory mgmt. solutions	Voyager - Travel module	
Forecaster finance app	Learning mgmt. solutions	Walker location tracking	
Google big data <ul style="list-style-type: none"> • Big query • Pub/Sub • Data flow 	Google compute & storage <ul style="list-style-type: none"> • App engine • Compute engine • Big table • Cloud storage • Cloud SQL • Cloud DNS • Load balancing 	Walker update modules	
		Live incident reporting plat	
Google machine learning <ul style="list-style-type: none"> • Vision API • Mach. learn • Speech API • Translate API 		Live risk alerts & forecasts	
		Anomaly detection module	
		QA capsules	
		Expense claim app	
		Bill IT finance app	

Figure 5: Value proposition



Work Allocation Planner

We offer our Work Allocation Planner that can optimize task allocation, logistics, expenses and quality to:

- Increase route optimization savings
- Lower costs due to FTF, revisits, inventory leakage, set-up/ maintenance and working capital
- Estimated savings: ~\$230M
(See Appendix for more info.)

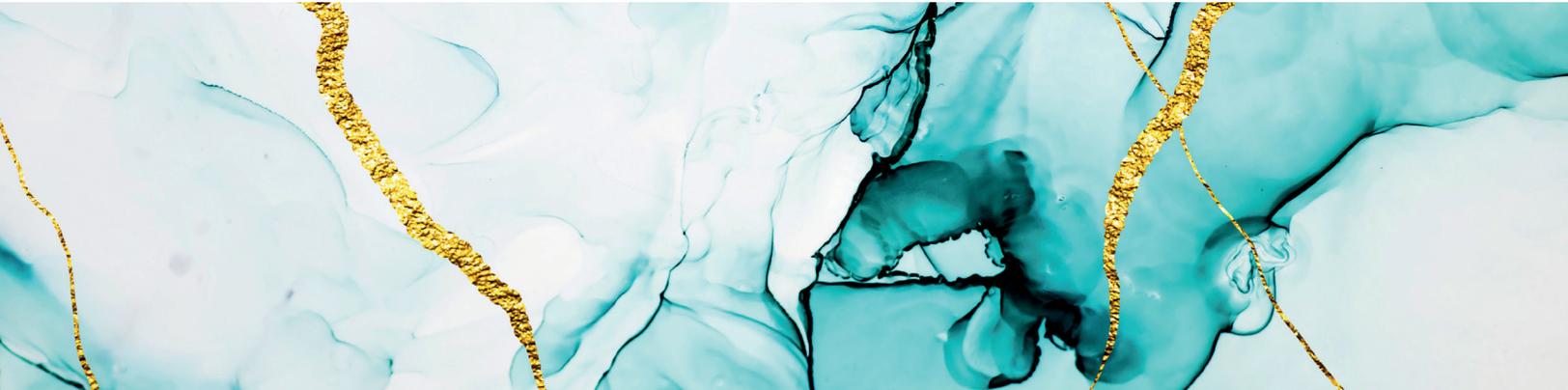
The benefits of Cognizant BPaaS for global field service organizations

Implemented for 25+ field service businesses across 51+ countries driving significant cost savings. See some implemented solution highlights in figure 6:

	Description	\$ Savings
Inventory management	Cloud based solution for E2E device inventory management	\$0.2m
Travel & expense management	One stop platform for tracking end to end travel and expenses management along with approvals	\$20m
Work allocation planner	Cloud based automated work allocation planner for field operations planning (creating automated plans at walker level)	\$1.5m
Implemented solution highlights	Overall estimated impact of	\$25m
Route optimization	Cloud based Google API based solution for optimized auto route creation to identify the best possible route for the visits	\$2m
Quality management	Cloud based solution for process quality and compliance checks	\$0.5m
Reporting-metrics / analytics and AI	Cloud based solution providing different metrics and data cuts along with insights/analytics for business decisions	\$0.5m

Figure 6: Tools description and saving

Now consider the benefits and estimated cost-savings impact in six opportunity areas where Cognizant BPaaS is deployed in a field services management market expected to reach \$5.7B by 2026:



Cognizant BPaaS solution returns benefits and cost savings

Opportunity area	Benefits (Considering Genie BPAAS solution is deployed)	Estimated \$ impact
Reducing first time fix (FTF) (USD 15–20k setup cost up to 58 days delayed payables on working capital)	5% efficiency gain	USD 296m
Additional field costs due to revisits - reducing 40% indirect cost to 25%	15% cost reduction	USD 856m
Additional spend due to lack of route optimization - reducing 4% of 40% indirect cost	1.6% efficiency gain	USD 91m
Inventory leakage impact- reducing inventory leakage by 10%	0.7% inventory leakage impact	USD 40m
Additional cost to procure standalone products for 100+ employee organization (USD 15k - USD 20k setup cost)	Setup and ongoing fixed cost saving	USD 150–USD 299
Working capital impact- Up to 58 days delayed payables on working capital	Reduction in delayed payables	Up to USD 30m

Figure 7: Benefits & impact in existing programs from Genie BPAAS solution

*Calculations done considering filed service management market @ USD 5.7Bn by 2026 | 40% indirect cost

Case studies:

How Cognizant BPaaS for global field service organizations has helped

#1 Work Allocation Planner for field survey walker

The challenge: An IT client’s field walkers lost time and expense, efficiency and transparency due to manual mapping of store lists done by team leads. The manual map creation led to a 30% duplication rate in just one quarter. There was no common global assignment platform. And the data refresh in the background could not be seen in real time.

Our approach: Work Allocation Planner.

Business outcomes: Implementation of our Work Allocation Planner has reduced 95% effort on assignments for the field walker, thereby increasing operational efficiency and delivering ~USD 1.5M cost savings (in 3 years).

Figure 8: Cognizant field ops credentials

3000+

Walker supporting field operations globally

4500+

HC

30

partners bespoke partner enabled management service

Engaged through program lifecycle

Incubation - validation - global scale

3000+

devices managed

1100+

vehicles

51 Countries

300+ cities

15

Programs supported globally for an internet major

Over

5 million

SMB's on mapfacts 98% @ quality

Field playback

designed for Plug n play market launches & operations handbook

Aligned to

Business evolution

Program & risk mgmt

Product alignment - Program risk management



#2 Route optimization for field survey walker

The challenge: Tech clients' field walkers were required to travel to multiple locations in a single day. The opportunity existed to optimize travel time based on automated route management solution versus walker manually selecting route using Google Maps.

Our approach: Route optimization solution.

Business outcomes: Implementation of the RouteOpti solution resulted in cost savings of ~8% of total annual budget from reduced travel hours (for field ops / walkers) due to the optimal route suggested by the model.

Summary

Inventory management, travel and expense management, quality management, work allocation, route optimization, and reporting, along with real costs savings—all that global field service organizations are looking to achieve—is within reach with Cognizant BPaaS.

The Cognizant BPaaS for global FSPs combines the best technologies with refined business processes to deliver a solution app suite in the form of a single, connected, cloud platform for E2E field operations. It tailors your business, helps you schedule jobs, monitors field force technicians, performs tasks hassle-free with few clicks, and provides management with powerful reports and real-time dashboards—and clients can expect estimated benefits up to ~USD 1B.



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 Gartner Magic Quadrant for Field Service Management

Field services numbers

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According to the Service Council, 84% of field service executives have little or no reservations about using a cloud-based service, and many have already adopted it.

<https://www.marketsandmarkets.com/Market-Reports/field-service-management-market-209977425.html>

Appendix



Cognizant (Nasdaq-100: CTSH) engineers modern businesses. We help our clients modernize technology, reimagine processes and transform experiences so they can stay ahead in our fast-changing world. Together, we're improving everyday life. See how at www.cognizant.com or @Cognizant.

World Headquarters

300 Frank W. Burr Blvd.
 Suite 36, 6th Floor
 Teaneck, NJ 07666 USA
 Phone: +1 201 801 0233
 Fax: +1 201 801 0243
 Toll Free: +1 888 937 3277

European Headquarters

280 Bishopsgate
 London
 EC2M 4RB
 England
 Tel: +44 (01) 020 7297 7600

India Operations Headquarters

5/535, Okkiam Thoraiappakam,
 Old Mahabalipuram Road,
 Chennai 600 096
 Tel: 1-800-208-6999
 Fax: +91 (01) 44 4209 6060

APAC Headquarters

1 Fusionopolis Link,
 Level 5 NEXUS@One-North,
 North Tower Singapore 138542
 Phone: +65 6812 4000