



ServiceACE™ Product White Paper

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Mobile Field Service Market Overview

Companies across the globe are turning to mobile field service solutions to shift their service organizations from a cost center to a strategic asset that generates revenue, enhances customer satisfaction, and delivers a competitive edge.

Optimizing its service operation can help companies:

- **Decrease costs**—automate manual, paper-based records and processes; ensure work orders are optimally assigned to qualified technicians; streamline parts management; increase service contract compliance; improve technician working conditions to reduce turnover.
- **Improve customer service**—narrow customer appointment windows; increase on-time arrivals; improve first-fix rates.
- **Increase revenue**—introduce premium service options; increase the amount of wrench time per day; offer up-sell and cross-sell opportunities.

To measure the performance of service operations, companies keep a close watch on Key Performance Indicators (KPIs), including:

- Technician productivity (wrench time, windshield time, average daily work orders completed, overtime hours/month)
- Customer satisfaction (SLA compliance percentage, churn, surveys, on-time arrival rates, service response times)
- Profitability & service revenue growth

Companies that have deployed field service solutions have realized, on average:

- 27% improvement in worker productivity
- 19% increase in customer satisfaction/retention
- 17% increase in overall profitability
- 13% increase in service revenues

Source: The Mobile Field Service Solution Selection Report, Aberdeen Group, December 2005.

ServiceACE Overview

When it comes to mobile field service applications, there is no one-size-fits-all solution. Each industry is different and every company has its own unique service processes. To address this problem, Apacheta has pioneered flexible ***mobile workflow applications*** that are ready-to-use, yet can be ***rapidly customized*** to suit your distinct and changing business requirements.

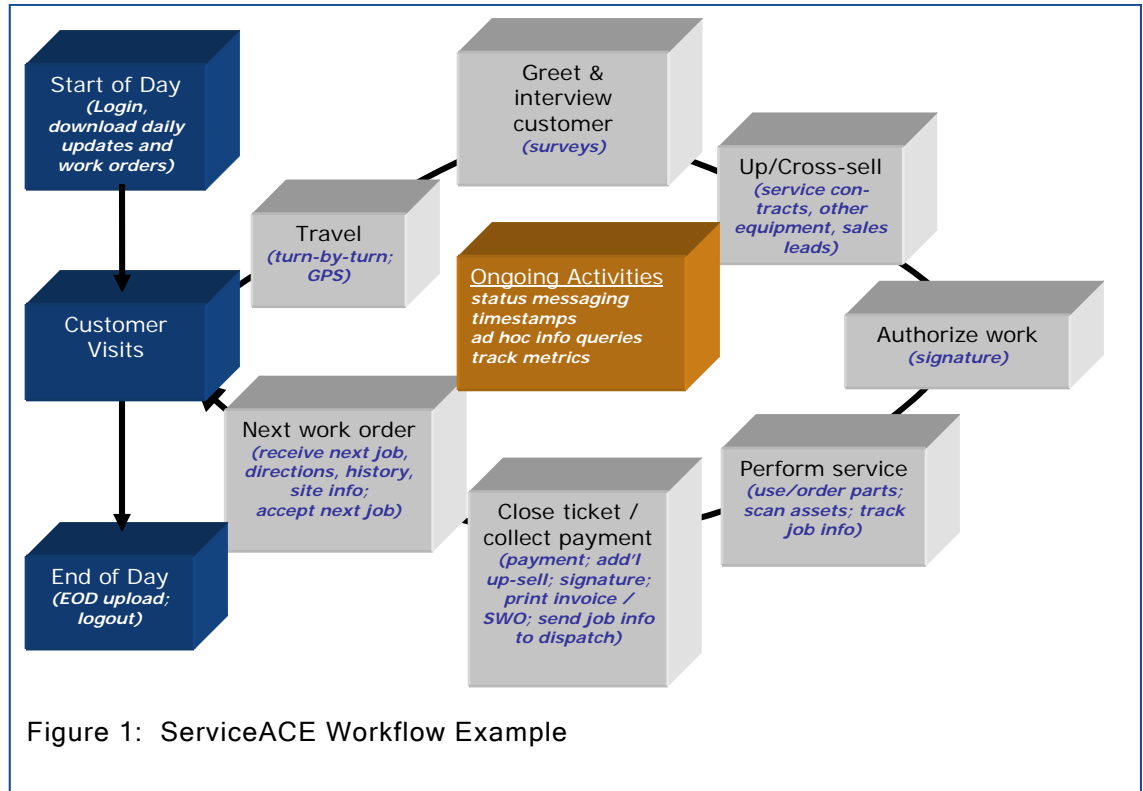
ServiceACE is a mobile field service solution that allows service-driven companies to streamline their mobile operations and capture new revenue opportunities. It automates all facets of mobile field service across a variety of industries, including:

- Manufacturing (computer and electronic products, industrial and electrical equipment, and medical equipment)
- 3rd Party maintenance and repair (computers, office machines, commercial and industrial equipment, HVAC, security)
- Telecom (telco, cable, and satellite)
- Utilities and energy

ServiceACE consists of a set of flexible, ready-to-use mobile workflows that implement key service industry business processes, resulting in quick deployment and fast ROI. ServiceACE workflows can also be rapidly adapted to your company's specific and changing requirements using Apacheta's VisualACE™ Business Process Designer, ensuring that you get the right solution for your company with the lowest cost of ownership.

ServiceACE covers the daily tasks of a field service technician including:

- Mobile and wireless download of work orders including dynamic schedule adjustments
- Work order management
- Turn-by-turn driving directions and automatic vehicle location
- Immediate access to installation and troubleshooting data
- Parts, inventory, and warranty tracking
- Sophisticated pricing and promotion models
- Up-sell and cross-sell support
- Invoice creation and printing with signature capture
- Payment processing including credit card authorization
- Real-time messaging and alerts
- End-of-day operations and uploads
- Reporting and analytics



ServiceACE Benefits

Companies seeking to automate their field service operations face many challenges including manual, paper-based operations, disjointed business processes, management and worker resistance to change, disparate technology solutions, integration with back-end systems, and security concerns.

ServiceACE overcomes these challenges to deliver a range of benefits including:

- **Fast, simple start-up**—ServiceACE is ready-to-use, out-of-the-box, delivering comprehensive workflows that implement best practices to automate key service business processes.
- **Ease of customization**—Workflows can be easily tailored to the “day in the life” of your mobile field technicians using our VisualACE Business Process Designer.
- **Rapid deployment and updating**—ServiceACE workflows are delivered over-the-air to your technicians’ mobile devices. When workflows are updated or changed, only the updates are sent to the device, speeding the roll out of new services and enabling quick response to changes in the business.
- **Flexible, scalable, and reusable**—Common workflows can be shared

across business units, providing a mobile architecture for enterprise-wide deployments.

- **Lowest total cost-of-ownership**—The combination of ready-to-use workflows and rapid customization drastically reduces the time, effort, and cost required to implement and maintain a mobile solution across the lifespan of the system.
- **Built-in analytics gathering**—ServiceACE automatically collects important metrics that can be used to track company Key Performance Indicators, demonstrate ROI or uncover new improvement opportunities.

As a result, ServiceACE offers substantial advantages over other mobile field service solutions. Unlike “monolithic” vertical applications that are difficult and expensive to change, ServiceACE gives you the solution that is right for your company without the expense of building it from scratch. And, unlike other mobile frameworks, ServiceACE does not require expert data modeling, detailed coding, and manual configuration to develop or modify a workflow. Instead, the VisualACE Business Process Designer generates a complete ServiceACE application from a visual representation of the workflow. This visual view of the workflow is understandable by end users, business analysts, and developers, ensuring that everyone is on the same page from the start.

ServiceACE Features

The ServiceACE feature set encompasses the “day in the life” activities of a field service technician.

Work Order Management

Most of a field service technician’s activity centers around work orders. With ServiceACE, work orders are downloaded at the start of the day or on-demand and are updated in real-time as required. Work orders are prioritized and sequenced accordingly on the device.



Technicians can view work order details such as priority, schedule time, work description, SLA, customer history, address and more. They can also view the client service history, equipment service history, and job site detail such as location of an asset.

Throughout the day, users can update work order status for each job including job accepted, in transit, arrived at job site, job complete, and more. Work order details can be captured through multiple input methods including typing and stylus.

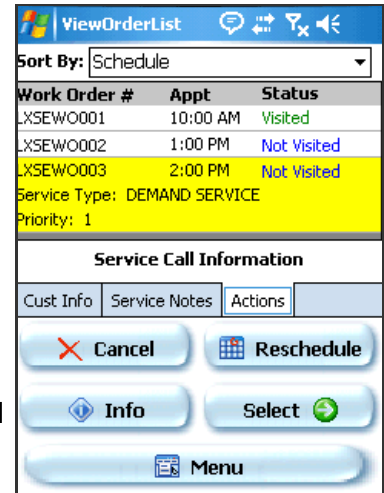
Long jobs can be spread over multiple days and work orders can be held and resumed at a later

time. Technicians also have the ability to transfer work orders to another technician, clone work orders, and create a new work order.

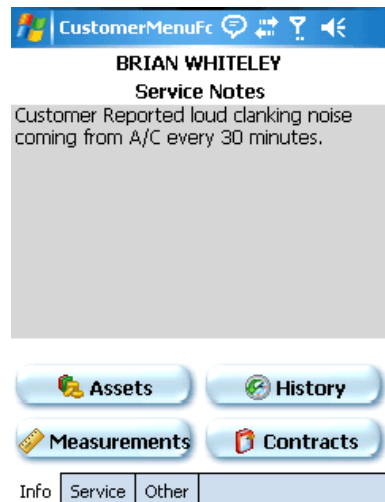
When the job is complete, ServiceACE supports signature capture. Prompts and pop-up reminders enforce business processes, ensure completion of all fields and signal up-sell and cross-sell opportunities. Closed work orders are then automatically updated to dispatch or stored for end-of-day processing.

If they are running late, a technician can adjust their ETA, with automatic updates to dispatch, and call the customer using an integrated phone dialer that keys off of the customer record or work order.

At the end of the day, full work order details are uploaded and synchronized with the back end.



Scheduling/Dispatch



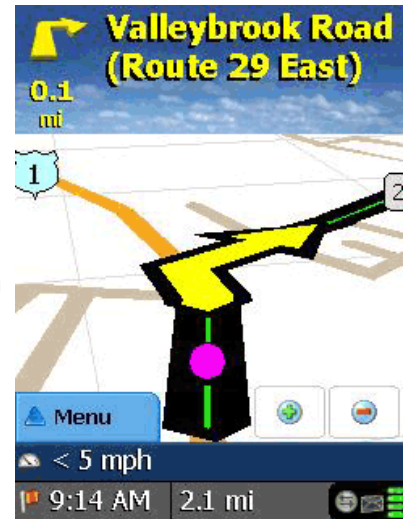
ServiceACE supports mobile dispatch forms and workflows and integrates with third-party scheduling and dispatch software and customer-developed systems. ServiceACE automates service work order scheduling, including real-time dynamic scheduling for break/fix jobs and fixed routes for pre-scheduled preventative maintenance and configuration.

ServiceACE supports configurable timestamps for server and status events based on type, info and trigger points including accept work order, reject work order, en-route, on-site, customer acceptance, job deferred, and job complete.

Using ServiceACE combined with scheduling and dispatch systems, customers can centrally track technician skills and calendars and optimize their field service organization by choosing to dispatch a technician based on skills, priority, location, status, and overtime. This combination can also provide a remote, dashboard view of work order status for managers and the ability to automatically push work orders over wireless, prioritize and sequence work orders on the mobile device, and remotely change a work order. For large organizations, multiple work orders can be bundled for dispatch by region, branch, or client.

GPS/Automatic Vehicle Location

ServiceACE offers optional turn-by-turn driving directions including audible directions to client sites¹. Directions can be calculated dynamically using current GPS location information. It also includes high-quality street-level maps of locations or driving directions, with annual upgrades. Using ServiceACE, GPS location can be reported periodically to the server for tracking and mapping, and customers can link GPS data samples to other events such as completed service order, mileage driven, and more.



Timesheet/Expense Management

ServiceACE provides mobile workflows to automatically track technician work time on a project or work order. It also provides configurable timesheet events and tracks out-of-pocket expenses such as gas and tolls.

Inventory Management

ServiceACE manages on-board inventory and integrates neatly with back-end parts management systems. ServiceACE downloads and stores parts and labor codes from the server to the handheld and enables real-time mobile access to parts and labor codes on the server.

An in-vehicle inventory list is updated in real-time as parts are used throughout the day and communicated back to the host to generate usage and restocking reports and triggers.

Technicians can scan barcodes on parts and equipment and attach parts and labor usage to work orders for reporting and billing systems.

Item#	OH	UM	Min	Max
024703362	2	EA	0	0
P-Trap				
025600170	1	EA	0	0
032400080	1	EA	0	0
032400100	1	EA	0	0
032402340	2	EA	0	0
032402360	2	EA	0	0
032402980	1	EA	0	0
032403000	1	EA	0	0
032408020	1	EA	0	0
032408040	1	EA	0	0
032408600	1	EA	0	0

Asset Management

ServiceACE tracks customer asset information that can be used to optimize the performance of the asset, increase asset up-time and identify replacement cycles. Information that can be tracked includes asset location, description, model number, manufacture and in-service date, warranty, performance measurements and more. In addition, assets can be nested within other assets.

¹ Offered in partnership with ALK Technologies.

Pricing, Invoicing and Payments

ServiceACE supports on-site estimating of service jobs, including parts, labor, service contracts and other items, and can employ sophisticated pricing and promotions models for invoicing, printing, and payment processing including credit card processing and authorization.

Mobile users can enter cost information manually or cost information can be entered automatically based on the service contract, parts used, or other data.

ServiceACE supports multiple pricing models including variable prices based on customer coverage, discount levels, customer type, and region, as well as on-device price adjustments by percentage or adjustment code. It also supports multiple taxing authorities.

Customer defined up-sell and cross-sell scripts, as well as user defined promotion, sales reminder, and survey prompts are also supported.

Real-Time Messaging

ServiceACE includes a mobile messaging feature that supports two-way messaging and alerts that can be delivered in real-time. Messages can also be attached to work orders so that they pop up when the customer record is opened.

Mobile Analytics

ServiceACE includes built-in analysis tools for tracking Key Performance Indicators and optimizing business processes. For example, ServiceACE's Mobile Analytics feature can track information about the technician's activities including: number and type of work orders completed and time spent on work orders; windshield time; SLA compliance; hours worked; on-time rates; revenue collections; and other standard or customer-defined metrics. This information can be filtered on the client and transmitted to the server as needed for analysis and reporting using common report writer software.

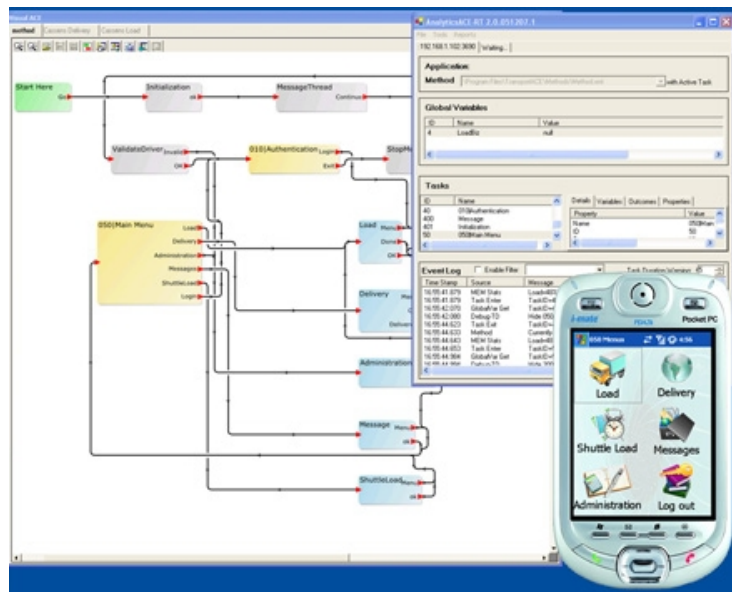
Integration with Back-end Systems

ServiceACE integrates readily with third-party back-end systems for dispatching, scheduling, parts management, mapping, and other common service management functions. ServiceACE also works with common ERP systems such as SAP, Great Plains, and Oracle, as well as with routing and logistics systems such as UPS Logistics.

Type	Amount	Info
Cash	\$10.00	

Customization with VisualACE Business Process Designer

VisualACE Business Process Designer is a Visual Studio plug-in used to rapidly customize ServiceACE and other Apacheta workflow applications to support your own business processes. Unlike typical mobile frameworks, VisualACE enables you to operate directly on the workflow by dragging-and-dropping tasks as needed without programming—fostering code sharing and reuse across the enterprise. Work orders, forms, and timesheets can be created, edited, and deleted easily and updated over-the-air with no disruption in application function. As a result, VisualACE drastically reduces the time, effort and cost to implement and maintain a mobile solution that is tailored to fit your exact business requirements.



ACE™ Platform and Infrastructure

The ACE (Apacheta Composite Environment) Platform is the underpinning of ServerACE and our other mobile workflow applications. ACE implements our “Mobile Service-Oriented Architecture” pioneered specifically to address the unique needs of the mobile enterprise such as workflow sharing across operations, rapid development to adapt quickly to changing needs, secure and reliable access to enterprise information and automatic over-the-air updates. The ACE Platform includes ServerACE and ACE Core.

ServerACE™

ServerACE is a high-performance, scalable server that manages communications with all mobile devices, integrates with enterprise applications and content, and provides for system administration and management. ServerACE utilizes open standards and can run on any Java

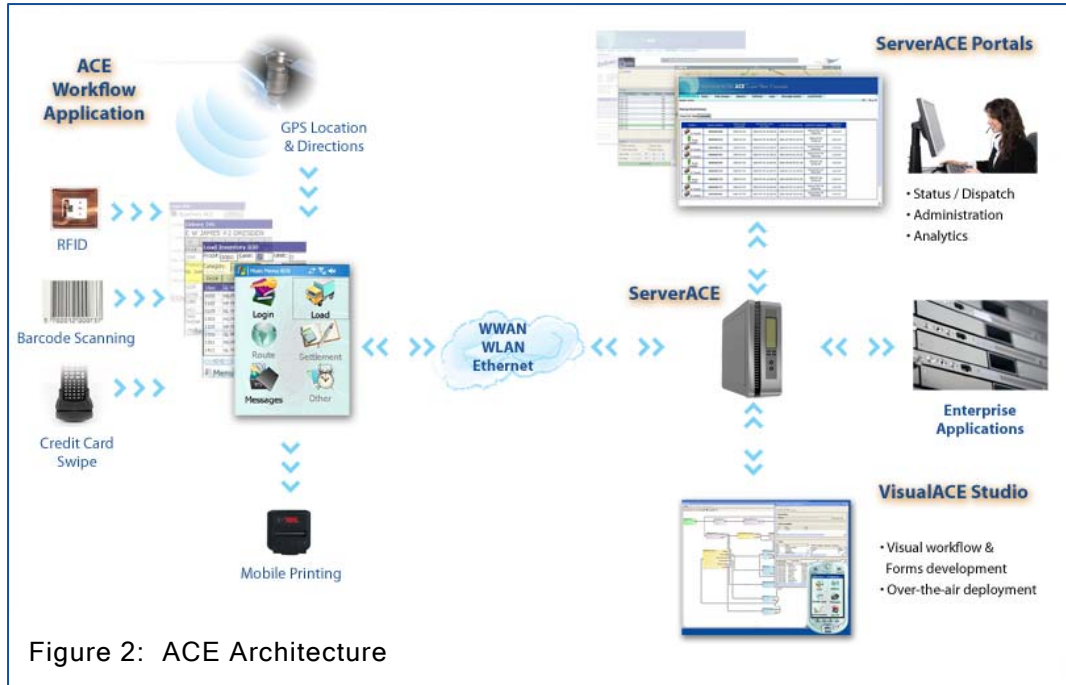


Figure 2: ACE Architecture

compatible platform, including Windows and Linux, providing proven scalability, high throughput, and maximum flexibility. Multiple ServerACE machines may be placed within a server farm or across grids for backup and load balancing.

ServerACE can be deployed behind-the-firewall or in hosted/on-demand environments. It supports on-line/real-time and batch interfaces to in-house or common 3rd party enterprise systems through web services, FTP interfaces, and EAI middleware. ServerACE also includes a system console for centralized administration, authentication, and management, as well as managing over-the-air updates of applications and data.

ACE Mobile Core

The ACE Mobile Core manages the execution of Apacheta's mobile workflow applications such as ServiceACE and supports a variety of accessories and peripherals (such as GPS devices, bar code readers, and printers) and mobile databases (such as Microsoft SQL CE and IBM DB2e.) It also provides for secure and reliable mobile and wireless communications with ServerACE, featuring SSL security, data and radio priorities, check-point restart, automatic authentication, least-cost routing, selective compression, persistent message queuing, configurable data poll and push times/frequencies, and support for static and dynamic IP addresses.

Mobile Device and Wireless Network Support

ServiceACE operates on a wide array of phones, PDAs, and mobile handheld devices running Windows Mobile 2005.NET, Windows CE.NET and Java (coming soon.) In addition, ServiceACE supports mobile peripherals including barcode readers, mobile printers (cabled and Bluetooth), GPS, credit card swipe, and RFID. ServiceACE supports mobile database options including SQL CE and DB2e.

Network support and certification includes:

- LAN (cable, cradle) and 802.11 WLAN
- CDMA 1xRTT/EV-DO
- GPRS/EDGE
- iDEN
- Dial-up (phone line, Bluetooth)

ServiceACE Customers

ServiceACE is being used in the field to improve technician productivity and enhance customer service. A few customer examples include:

- Retail-based computer installation and repair - using ServiceACE for inventory management and tracking, work order management, driving directions, up-sell support, and payment processing.
- Gaming machine repair - using ServiceACE to reduce paperwork and minimize mistakes by managing work orders and inventory, scanning component barcodes, and confirming warranty status to ensure proper payment and support.
- Satellite TV installation - ServiceACE manages work orders, ensuring the proper configuration for each job, processes credit card payments, and provides script prompts for service up sell opportunities.
- Vending and beverage fountain repair and service - ServiceACE manages work orders, eliminates paperwork, and provides driving directions.

About Apacheta

Founded in late 2002, Apacheta Corporation provides easily customizable mobile business solutions across a range of industries including consumer packaged goods, manufacturing, 3rd party service & repair, telecommunications, and transportation. Its mobile workflow applications are built on its leading-edge mobile application framework that provides a platform for mobile solutions across the enterprise. In addition to

ServiceACE, Apacheta offers the following mobile workflow applications:

- RouteACE™—route sales and store delivery
- SellACE™—retail sales and merchandising
- TransportACE™—proof-of-delivery

Apacheta has built a solid customer base that includes Dr. Pepper/Cadbury Schweppes, Lance Snack Foods, G&K Services, Cassens Transport, Bally's Technologies and many others. Apacheta also works closely with partners such as Bell Mobility, Cingular, IBM, inCode Wireless, Intermec, Nokia, Sprint, Symbol, and others to deliver complete customer solutions. Apacheta is privately held with offices in San Diego (HQ), Chicago, and Philadelphia.

To learn more about Apacheta visit www.apacheta.com, email sales@apacheta.com.