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Four Technologies Reshaping the Field Service Scenario

The features provided to companies for optimizing their field processes have undergone a significant change over the years, keeping pace with the evolution of the enabling technologies. Let's discover those providing a significant impact on companies and how they fit into the global Field Service arena.

Artificial Intelligence

To reshape a company's field processes, the modern Field Service Management shall solve issues frontline workers are constantly exposed to, providing them the best possible **digital support** to successfully complete the activities assigned. This is only possible by introducing dedicated tools relying

on groundbreaking features for data collection and debriefing to **automate the daily operations** from the first **scheduling and optimization** phase to the final **activity execution**.

Regardless the use of tools for manual or automatic scheduling, stand-alone or integrated into other corporate ERPs, introducing AI for supporting **task creation** and **workload distribution** on the agendas of field resources, dramatically improves planning by reducing time consumption and margins of error. AI Support allows, for instance, sending the right technician to the proper work site, with the desired skills, spare parts and tools needed to carry out a job. Such technology also has a positive knock-on effect on the management of **recurring activities**, since using specific algorithms on the history of past appointments provides **accurate predictions** of any possible issues long before they occur.

Furthermore, automating procedures favorably influences the **productivity of field technicians**, as they can experience a radical improvement in their working conditions thanks to state-of-the-art digital tools. The integration of AI features allows technicians to rely on **proactive suggestions** for automatically identify assets, suggesting the procedures to follow or parts to order, in addition to automatically collecting field information and simplifying the debriefing process, with a remarkable saving of time. Similarly, intervention **recording** and **automatic content tagging** allow companies to **achieve greater transparency** of operations and create a **knowledge repository** to be **shared** among the staff or used for training purposes.

Assisted and “Augmented” Mobility and Collaboration

Over the recent years, the evolution of Field Service has concerned mobile digital tools, which can now streamline the operations of resources and improve their performance. A further step towards a definitive paperless procedure for collecting field information, became a reality with the rapid progress of hardware and software technology at the foundation of **assisted support**. With Artificial Intelligence, **Augmented Reality** has been the technology driving a complete transformation of the working methods as it has unveiled a plethora of features to display relevant information on the operators’ point of view, thus letting their **hands-free** to work and dramatically improving their **safety** conditions.

Accessing information through **vocal commands** allowed a more customized

user experience, as technicians have all necessary details to complete the assigned activity at their fingertips, such as: AR instructions on their point of view, step-by-step procedures, real-time equipment data, technical documents, tutorial videos, and more generally, smooth and quick access to the corporate repository of shared knowledge.

Moreover, virtual collaboration tools have brought user experience to a whole new level. The possibility to **connect with a remote expert in real-time** and **share the viewpoint** of their devices, technicians benefit from precise and guided support that reduces the margin of errors while carrying out complex activities, streamlining work execution and promoting collaborative learning, while reducing to zero distance and travel times. **Operating sessions** can be recorded to confirm the intervention execution and provide junior staff with the training material needed.

Making the most of the "**assisted collaboration**" provided by modern Field Service tools, the workforce can now face each operating scenario without sacrificing efficiency and reach unprecedented levels in terms of first-time fix rate, as well as customer service and satisfaction.

Industrial Internet of Things

In the industrial manufacturing world, innovative sensor technology collects large amounts of data from machines and technical assets, to **keep track of conditions** and assess performance over time. With Industrial Internet of Things (**IIoT**), machines are now able to independently send requests, alarms and notifications to a control room, where the technical staff can perform **diagnosis remotely**, even from long distances, thus reducing times and travel

costs and increasing first-time-fix ratios on equipment, with the right tools and spare parts.

A major benefit of having machines “talking” to each other, is the possibility to **plan maintenance interventions** and use historical analyses to sort spare parts predictively, to anticipate parts wear and any possible issues that may cause machinery downtime and consequent business disruption and loss of profits.

Tools collecting from the field, processing and providing rich data sets, give a **comprehensive overview** of how machines interact within an ecosystem and provide the most innovative features for improving their operation, thus **optimizing business processes**.

Integrating the data acquired with the above-mentioned tools based on Augmented Reality and Artificial Intelligence provides field users with “**smart**” **suggestions**, to be displayed on their mobile devices or AR headsets. Through this additional information, technicians activities can be paired with critical information to evaluate the most effective way to intervene during field tasks.

Big Data and Analysis Tools

The ultimate purpose of massive and automated data collection ensured by the latest digital tools is the optimizing of Field Service activities and, more generally, business processes.

Enhancing the organization of field information allows technicians to have a **broader view of the activities currently performed** (work progress, past interventions, staff involved, similarities with other activities, prediction of future interventions, etc.) to support technicians with adequate and updated tools to carry them out. Moreover, relying on a **knowledge repository, which can be easily shared and accessed in real time**, plays a pivotal role when it comes to **improving staff performance** and **training new employees**. Knowledge repositories have proven benefits in terms of quicker troubleshooting, **reduced travels** as well as more efficient and informed **communication** with clients.

In a comprehensive ecosystem, where Field Service software interact with a wide range of enterprise systems, collecting and sharing field information is integrated with data flows from other sources. Modern tools for analyzing such amounts of data become of paramount importance for efficient **optimization** and **automation of FSM processes**, two phases where the quality of data is the key

for success. Such centralization shifts the focus of operations from a reactive model, in which specific measures are taken when a particular event occurs, to a **proactive model**, where activities performed by resources are scheduled and optimized with a **predictive maintenance** perspective, enhancing **efficiency** and **customer satisfaction**.

Conclusion

Artificial Intelligence for **automating operations**, Augmented Reality for **collaborating in an assisted and safe way**, Industrial Internet of Things for **tracking the assets' behavior in real time**, and tools for analyzing big data and **planning activities in a predictive mode**, all create significant benefits for companies and workers. Regardless of the corporate business, these are the four technologies playing a key role in business process optimization when integrated within the best Field Service tools available on the market.