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White Paper

Coresystems for High Value Enterprise Services

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Content

Coresystems for High Value Enterprise Services

1. Introduction

Meeting the client's expectations when delivering high value services to industries with capital intensive, large and complex installations require specific functionality.

This White Paper addresses the distinctive functionality essential for efficiently managing and delivering the services that are typical for these complex industrial installations.

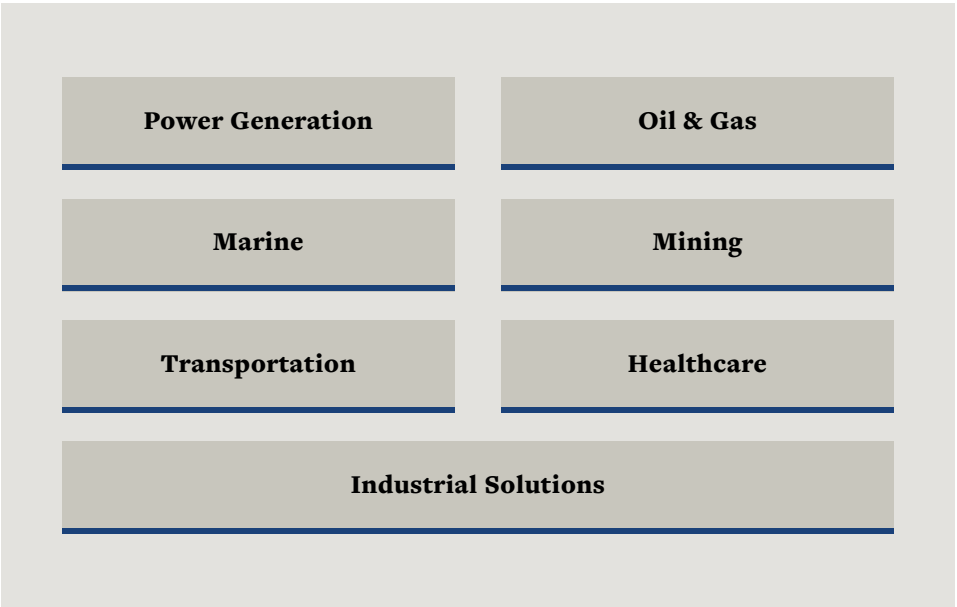
The Coresystems Field Service Software offers unique capabilities that allow you to design, plan, execute and report on these services.

Coresystems develops, markets and implements innovative solutions aimed at transforming the customer high value service.

2. Industries with High Value Services

High value services are the Business-to-Business (B2B) multidisciplinary services offered and delivered by large industrial suppliers to large industrial clients. For example: Industries supplying Power Plants, solutions for Oil & Gas, Marine, Mining, Transportation, Healthcare and the many suppliers of complex industrial solutions to manufacturing companies.

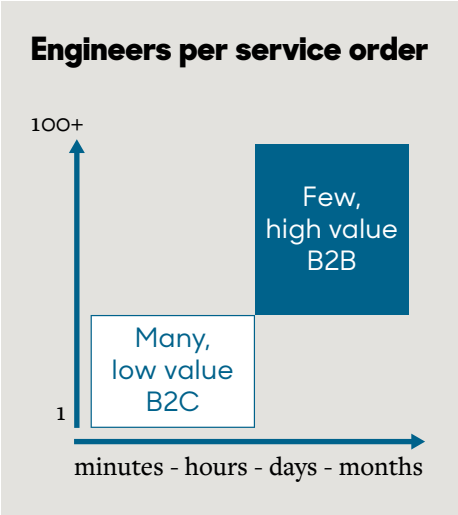
Service is delivered during the lengthy lifecycle of industrial or capital intensive equipment. It may include the installation or maintenance of large and expensive equipment like industrial solutions machinery, entire production lines or even the complete plant, process automation, high-end medical or laboratory equipment.



3. B2B versus B2C

These B2B companies deliver a limited number of service projects which may include hundreds of engineers and can last from a few days to months.

These services have high-value content and have specific needs that need to be catered for.



In contrast are the Business-to-Consumer (B2C) field services, which are characterized by many service calls - usually short in duration and scheduled on a short notice - and delivered by individual field engineers. For this type of B2C field service, important efficiencies are achieved by optimizing the scheduling of service calls (automatic or semi-automatic scheduling), extensive use of geo-positioning and route optimization, capturing in a digital way the service call key data including time spent, spare parts used and expenses made.

High Value Service Calls in a B2B model are of a different nature: scheduling is part of a carefully designed project plan for delivering multidisciplinary services to a limited, well-known, installed base.

The equipment to be serviced may be in or out of warranty and may need to be repaired; it may require an overhaul or upgrading, to be retrofitted, audited, refurbished or may require regular, planned proactive servicing. The actual execution of the services may include several, sometimes hundreds, of field engineers from several disciplines (e.g. mechanical, electrical, software). Characteristics include the necessity to appoint team leaders, to adhere rigorously to the predefined project plans, to set tasks and procedures. Other requirements may include the ability to carry out the service “off-line”, hand over uncompleted tasks or checklists to the next engineer on duty, onsite changes to the work planning, extensive reporting of the work done with eventual recommendations, easy integration of pictures, displaying drawings, complete complex data tables and tight integration with engineering systems.

For a mobile field service solution to deliver on the efficiency improvements, it needs to fully support the specific end-to-end process for delivery of high value services.

Service Request Management

Product / Process Engineering

SCM / Logistics

Scheduling

Execution

Reporting

Closing

Invoicing

4. Typical High Value Service Process

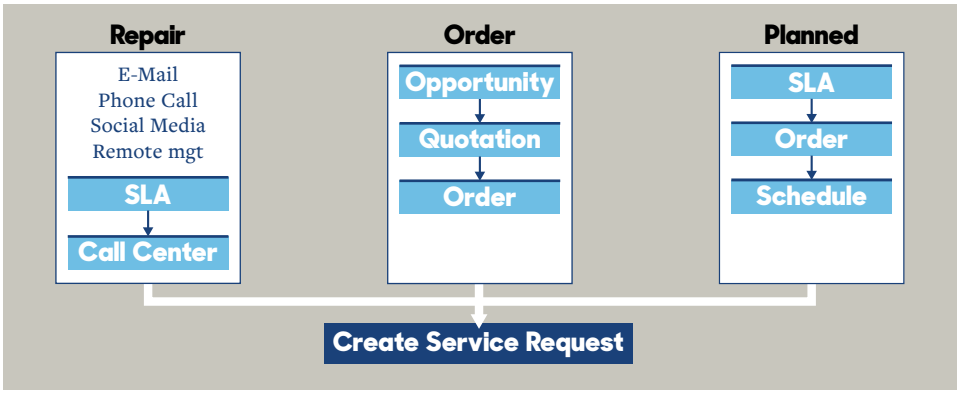
Digitization and mobilization of the high value service processes that support the deployment of multiple engineers during multiple days has the potential to significantly increase the overall efficiency of the service organization.

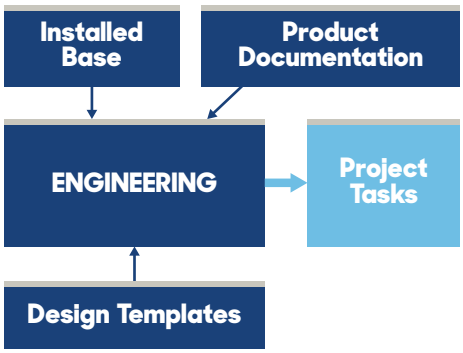
The diagram on the left hand side shows a high level overview of the service process.

The start of the process is initiated by generating a service request, followed eventually by some product or process engineering, making sure that the required parts are delivered, the scheduling of the actual resources which will be responsible for the execution. At the end of the job, the internal and customer specific reporting needs to be finalized and sent to the specific parties. Finally the job can be closed and transferred to the backend systems for invoicing.

The process is initiated with the **"Service Request Management"** where the Service Request is created typically as a result of one of three sources: a repair call, a customer order or a planned visit based upon an existing service level agreement with the customer:

- A repair request can be initiated from different input sources like a customer email, a user phone call, through social media or generated by the equipment itself via a remote connection
- A customer-specific service order, initially logged as a service opportunity and turned into a service order via a quotation process
- A planned or scheduled intervention based upon a standing Service Level Agreement (SLA)





Before the actual work can be carried out, it may require **"Product or Process Engineering"** efforts to make sure that the service required can actually be performed on the equipment.

The equipment may have been installed many years ago and it may require engineering time to make the equipment ready for the planned upgrade. Therefore, access to the installed base, its history and equipment documentation is key. Based upon the best way to carry out the job, process engineering will define an overall project plan, identify the different project tasks and design the templates (Checklists / Dynamic Forms) that go with these tasks.

Once the necessary process steps are defined and the different parts designed, the "Supply Chain Management" (SCM) can take care of ordering these items, and take care of the logistics to be then available at the customer suite when the engineers will be onsite to carry out the work.

The "Scheduling" of the engineers that will be responsible for carrying out the work onsite is the process step where the engineers and their team leaders are matched to the different tasks and taking into account the planned start date of the job.

During the "Execution" phase, the engineers carry out the work according to the tasks specified. This usually means filling in complex checklist that may have large data tables and require to add different types of attachments (documents, photos).

Extensive "Reporting" will be the next step. All activities need to be reported back to the engineer's company (mainly checklists based report), but also to the customer (service report).

During the "Closing" phase, the team leader will solicit the approval from the customer stating that the work is carried out as expected and that the completed job can be handed over for "Invoicing".

5. Required Functionality

Typical Requirements

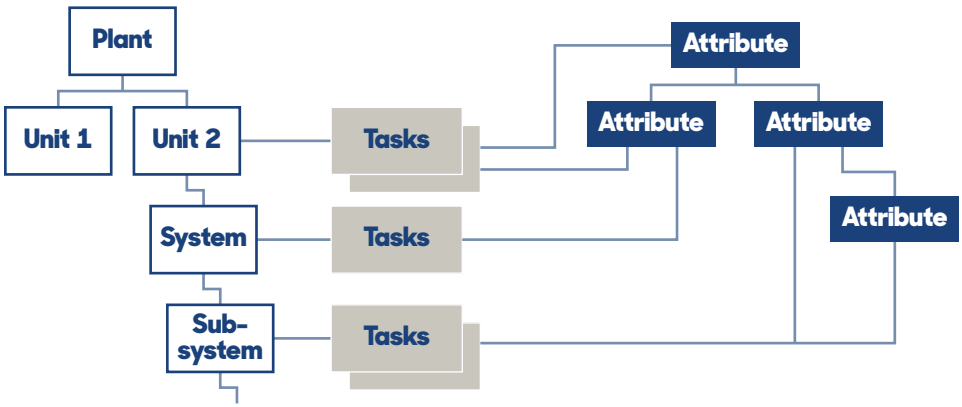
- *Offline Mode*
- *Project Planning*
- *Task Configurator*
- *Teams, Team Leader*
- *Equipment Hierarchy*
- *Complex Checklists*
- *Complex Tables*
- *Sophisticated Reports*
- *Compliants to Standards*
- *Data Extraction, Reporting*
- *Engineering Integration*

Servicing these large industrial installations requires specific software functionality that allows the service organization to realize these major improvements. Typical solution requirements for supporting these high value services projects include:

Offline Mode: Technicians do not always have an active Internet connection available or, for security reasons, are not allowed to use the existing client network. With our Field Service Software, the field service engineers do not require an active Internet connection to record their work to obtain information regarding their service jobs. As soon as an Internet connection is available, they just press the synchronize button. This does eliminate the need for full online capability when there is an active internet connection. This may be required for certain corporate functionality/applications that are only available online.

Project Planning and Task Configurator: With the Task Configurator the office-user (usually a project manager) will be able to go through a wizard (hierarchy-tree of attributes), where he or she defines the project scope including a possible start-date of the project. Based on the defined attributes all the necessary tasks (incl. linked Documents and Checklist-Assignments) will be selected from a pool of task templates and a draft-project (including all tasks) will be generated. The project manager is now able to administer (add/delete/update). Finally he can release the draft-project.

Generic Equipment



Teams, Team Leader: Resolving service calls with multiple technicians may require appointing a team or group leader. When multiple service technicians work a single service call that is split into multiple assignments or tasks, then the Group Leader can perform a group checkout after the other engineers have checked out. All the assignments of the technicians will be combined into one Service Call report.

Equipment Hierarchy: Managing the different pieces of the equipment as autonomous pieces whereby their specific service history, checklists and tasks are managed, and at the same time taking into account their relationship with other pieces of the equipment

Complex Checklists: Information about the intervention can be structured via the "Checklists" or "Dynamic Forms". This tool allows guiding the field engineer through a pre-defined scenario whereby the required actions, data inputs like measurements, recommendations, picture and other attachments, are recorded in a structured manner. When using the translation capability, checklist can be made available in different local languages, making it easier for the local field engineer to understand that tasks and inputs that are required.
For both the customer and for internal use fully automated reports are available. The availability of a "service/engineering" database for analytics purpose is another building block for getting a better handle on the different service processes.

Complex Tables: Facilitating the process of filling in many values (like measurements) into one single, large table may be a requirement. Collecting this data at the source in a structured way may eliminate the introduction of errors.

Sophisticated Reports: Reporting of KPI's and performance measures of the service organization for an improved understanding of the services organization and its key processes. Our Software offers reporting that goes beyond the usual standard reports giving you a detailed insight in the performed work and data captured. As all the service data is available in the Coresystems Cloud Database, our cloud reporting / cloud printing tool can be used to generate any type of report that is required.

Compliance to Standards: Today, many industries or corporates have set standards regarding, for instance, data and data storage, electronic signatures, security and reporting. Suppliers to regulated industries like healthcare, medical devices or utilities need to adhere to these standards and the use of a field service solution that facilitates this compliance is a necessity.

Data Extraction, Reporting: Data mining to identify a potential correlation between collected data and specific equipment defects is one example of how a powerful mobile reporting solution can provide additional insight. All data fields, used in checklists, are identified by ID's and as such stored in the cloud. This allows not only to capture the data, but also to allow for data mining later on. Typically, the engineering department will benefit from this data as it allows them to improve the products. Furthermore, it will provide the service department with highly valuable in-sights about which (new) services could be introduced.

Engineering Integration: Creating a direct flow between data captured in the field and the engineering or product department allows for what could be called: "engineering on-site". Indeed, the engineering department no longer needs to wait for several weeks or even months until the installed equipment information reaches them. When deploying Coresystems Field Service Software, the data is available in near real-time or after the field engineer has synchronized with the cloud. Furthermore, additional data collection items that are not intended to be included in the customer report can be included in the checklists.

6. Expected Improved Areas

Expected Outcomes

- *Standardization/ Modularization*
- *Lead Time Reduction*
- *Cost Competitiveness*
- *Quality Improvement*
- *Product Improvement*
- *People and Safety*
- *Additional Revenues*
- *Customer Satisfaction*

Areas positively affected are, amongst other:

- **Standardization and Modularization:** The service process is optimized by standardization allowing the field engineers, typically scattered in various locations across the world to carry out the service calls in a uniform way that is based upon best practices. Modularization allows for parts of the process that handle the same equipment pieces to be used as modules that can be incorporated (copied) into larger checklists.
- Aligning data flows, harmonizing processes across product lines, and being able to replicate the "best practices" in the form of standardized procedures allow for sharing the companies' expertise amongst the field service engineers.
- **Lead Time Reduction:** The nature of the high value service calls may require extensive planning and engineering time prior to onsite execution. Using pre-defined checklists, procedures and planning templates assure improved response times (time from order to onsite execution). Creation and use of standard report templates that are filled in automatically not only reduces the reporting time significantly, but also improves the quality of the output documents.
- **Cost Competitiveness:** Achieve the most cost-effective, productive, and profitable service chain at all times is the overall goal. When improving back-office efficiency, reducing administration effort, increasing field service execution efficiency resulting in a faster work order resolution, reducing pre-work and reporting time has a direct effect on the cost competitiveness of the company.
- **Quality:** Improving the data quality and quality assurance when entering or selecting data profiling the data upfront. Offering a limited, selected list of potential answers at the point of entry will improve the data quality, data entry time contributing to data consistency.
- **People and Safety:** Provide access to the same information for all stakeholders, support the employees with state of the art tools, strengthens the ambassadorship of the employees.
- **Increased Service Revenues:** Field technicians have the unique capability to extend on-site services through a combination of specialized up-skilling and tools. Such opportunities can see quotations closed and transferred into service orders through digital signature capture.
- **Increased Customer Satisfaction:** Processes that make things easier for field service personnel also tend to make things easier for their customers. Customers value high quality service and one-stop resolution, because it helps them keep their facilities running and avoid overtime to make up for equipment downtime. Customers also benefit by receiving legible paperwork from field service representatives. The ultimate goal is to increase customer satisfaction and their long-term loyalty.

About Coresystems

Coresystems is a leading provider of mobile and cloud-based field service and workforce management software for mid-sized and large enterprises' field service organizations. Since Coresystems' founding in 2006, more than 190,000 users across the world have utilized Coresystems' innovative, real-time field service management software to improve their business and field service processes. Coresystems has also pioneered "crowd service" – which allows customers to leverage an Uber-like platform to find available field service technicians in real-time. Coresystems is headquartered in Switzerland with international offices in San Francisco, Miami, Berlin, Freiburg, Shanghai, São Paulo and London.

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