Extending IFS ERP for Advanced Service Management

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Major consulting firms have piled onto the service management bandwagon, pushing thought leadership on the importance of not just product innovation, but aftermarket support of products and assets they sell to customers.

In a world of global supply chains, product after all can be commoditized, and digital process control means quality should also be fairly ubiquitous. Rather than quality, durable goods product companies need to focus on the qualities of the product, including the ability to seamlessly support it over its lifecycle.

A 2024 Accenture study characterizes the current business environment as having already moved from product-centric approaches to service-driven approaches up to and including full subscription selling rather than outright sale of the asset or product. Companies going forward, they say, will sell fewer products and more outputs, in models similar to power-by-the-hour contracts in aerospace defense where the customer pays for productive capacity as it is consumed. The study authors write:

> "This is a major leap forward from today's focus on selling products with various sets of "add-ons" and service contracts. Companies that still sell products outright are designing them for serviceability, providing advanced functionalities such as predictive maintenance, over-the-air product or service upgrades and the ability to reduce or minimize the need for service events (such as through feedback loops from service to R&D for next generation products)."

A 2024 McKinsey study includes data on total shareholder returns for B2B services companies that focus on the aftermarket, with companies with a higher service mix offering double the returns of lower service mix companies.

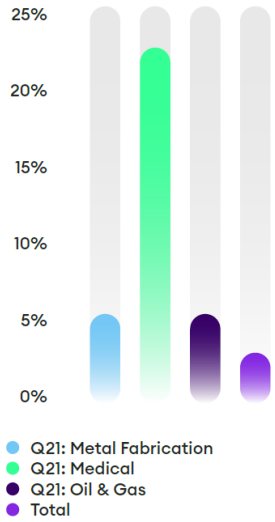
A 2020 Deloitte study revealed how US industrial manufacturers between 2005 and 2018 had already seen service operating margin increase from 7 percent to 9 percent.

ERP for Service Management

One enterprise resource planning (ERP) software company that lead the way in enabling service management is IFS. Because IFS's product originated as a maintenance management solution for nuclear power, and evolved into complex industrial manufacturing and other sectors, it always had strong functionality for servicing and sustaining assets ranging from industrial machinery to jet aircraft. This functionality was targeted at and used by companies performing maintenance repair and overhaul, plant refits and projects requiring inventory traceability and relying on work breakdown structures and cost breakdown structures.

Then, IFS acquired companies focused on field service management—bringing into the fold capabilities for field service management with the artificial intelligence (AI)-driven route optimization product 360 Scheduling joining the fold in 2010 and the 2012 purchase of field service management software vendor Metrix. Today, while IFS Field Service Management encompasses functionality for teams of mobile technicians visiting multiple sites per day, IFS Applications and now IFS Cloud remain the standard for complex project-driven service provisions. This more robust capability now leverages the AI service scheduling and route optimization functionality. IFS Applications and IFS Cloud also early on gained the ability to treat service vans or vehicles as mobile inventory locations, with their own replenishment triggers.

Outcome-based Service Model (charge by usage, by the hour, or outcome instead of product)



Source: IFS

A 2018 primary research study from IFS found that at that time, more than 20 percent of medical device manufacturers were already involved in the outcome-based service models described by Accenture. In general, manufacturers of industrial and high-value, complex electromechanical equipment were most advanced. Outsourcing the complexity and risk of ensuring asset availability here is attractive for the customer, and the manufacturer leverages data and expertise they possess to create a high margin offering.

But companies in various vertical industries reported significant levels of sophistication in their service offerings and service management tech stacks.

- Industrial manufacturers were most likely to report aftermarket service as a profit center, at just over 55 percent. Medical device manufacturers were second at 44 percent, just ahead of aerospace and defense manufacturers at 43 percent.

- While HVAC manufacturers were the most likely to have implemented a mobile interface for use by field technicians at 71 percent, capital equipment manufacturers were not far behind at 62 percent.
- Medical device manufacturers were most likely to have implemented reverse logistics/repair depot software at 50 percent, and scheduling optimization at 62 percent.
- Capital equipment manufacturers were most likely to be offering and executing against maintenance contracts at 56 percent, while medical device manufacturers were most likely to be engaged in outcomes-based services, at 22 percent.

Companies in these and other sectors require the deep project- and asset-driven service capabilities of a solution like IFS Applications or IFS Cloud but may have other needs as well. In these cases, Tsunami Tsolutions is helping IFS customers extend their IFS solution through integrations with other products. Sometimes, an IFS customer may choose to extend their service management software to accommodate global mandates to use certain products, while in others it may streamline or provide new ways for them to interact with the software.

Extend IFS Service Management with Salesforce and SAP

One integration use case Tsunami Tsolutions has seen for integrations is to unify an instance of IFS Service Management with a corporate standard customer relationship management (CRM) application.

Integration with a broad and common CRM solution like Salesforce involved not just contact management and interaction with the customer, but service quotations. Using the Tsunami Tsolutions integration, customers can sell a service contract, push a button in Salesforce and automatically create a new customer in IFS, including addresses, jurisdiction codes, installation work orders and everything a technician will need to execute against the contract.

We have also integrated IFS with SAP for supply chain management. This integration eliminates the inefficiency of needing to purchase a product from a vendor web site and then enter that transaction in both IFS and SAP. In the integration, an order proposal in IFS kicks off an automated workflow in both IFS and SAP.

ROI from Integrations

Apart from eliminating the non-value-added work of double entry, these and other integrations can enable an IFS customer to expand the solution beyond what it will do out-of-the-box. This can net them benefits in the area of:

- Price flexibility, particularly when the price depends on multiple variables or with complex dependencies between
- Product recalls which may require automated generation of large numbers of work orders
- Emergency service requirements to schedule service on weekends or in the immediate time frame
- Blanket purchase orders to enable service against a block of hours or banked dollar amount, with the invoice automatically generated when the hours or budget is consumed

What is the cost and timeline involved in these integration projects? That depends on how much automation you require. One goal of an integration is to eliminate the need to enter data in multiple systems. Some integrations though will enable events or transactions in one application to trigger events or transactions in the other, yielding an automated workflow.

Cost and complexity increase as you progress from two applications sharing a common data set or bidirectionally integrated towards an orchestrated process across applications.

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Adding a Low Code Interface

Tsunami Tsolutions has also extended IFS ERP for service management with low-code interfaces including the Novacura Low-Code Platform to spread the value of an instance of IFS ERP deeper into the service management lifecycle.

Major low-code, no-code tools like Quickbase or Oracle APEX are used to create net new applications without writing code. The Novacura tool, however, essentially gives users a low-code platform that resides on top of IFS software. Without extensive coding, partners and customers can configure their own interface to meet their unique needs, even creating automated workflows.

A customer may have a unique need to create multiple work orders from a single transaction, load or unload inventory to and from a truck in a given order or even automate production reporting, relying on a camera that captures and identifies an image of each product produced.

This low-code interface can also facilitate integrations by launching third party solutions like Stripe to handle payments for service, eliminating the need to invoice

customers and preventing revenue leaks that can result if service is not recorded after the fact in a timely and accurate fashion so an invoice can be sent.

A low-code interface can also tie non-service processes into a service management workflow without requiring the user to adapt to a second user interface. This can come in handy when service technicians perform basic assembly, kitting or other production steps, or do double duty between the shop floor and the field.

Inventory Enhancements for Complex Maintenance

Product companies like industrial equipment manufacturers, medical device manufacturers, aerospace manufacturers and shipbuilding/maritime companies will also benefit from enhancements Tsunami Tsolutions has created to balance inventory requirements across the lifecycle of an asset or service contract.

Spares and repairs inventory is often procured well in advance of when it is needed. Having some safety stock on hand for unplanned break-fix repair is essential, but parts for larger refits, plant shutdowns or asset lifecycle extensions can be a significant expense. These projects will extend over months or years and take place in phases. Many software applications will want to generate requisitions with the bill of materials released immediately on project startup. But ordering these parts and materials too soon will tie up capital that could be used other places in the business. Tsunami Tsolutions has enhanced IFS ERP for service management that ties the procurement plan in with service and maintenance project plans, adding a priority variable to each part. With the Tsunami Tsolutions configuration, users can now see their inventory position for a specific project with inventory items arranged by priority given current stock levels and the current timeline. This enables them to stagger procurement and avoid overspending.

Automation will reduce non-value-added work. But the greater upside is the ability to tie requisitions to not only the original project timeline, but the timeline as it flexes and changes. If the timing of a plant shutdown or refit changes, that is automatically reflected in requisitions.

Another challenge Tsunami is addressing for service operations using IFS is automation of requisitions. Automation will reduce non-value-added work. But the greater upside is the ability to tie requisitions to not only the original project timeline, but the timeline as it flexes and changes. If the timing of a plant shutdown or refit changes, that is automatically reflected in requisitions.

Next Steps in IFS for Service Management

While IFS Cloud is bringing net-new capabilities for IoT, streamlining the ingestion of data and lowering solution complexity, Tsunami Tsolutions sees the need to extend this capability, As Accenture points out, more and more manufacturers will want detailed visibility into asset and product performance to facilitate maintenance and service and even to inform new product development. Tsunami Tsolutions is looking for pilot customers for advanced condition-based maintenance. Currently, IFS Cloud natively supports condition-based maintenance based on a single operating variable.

While IFS Cloud will provide visibility into multiple variables, it will trigger a work order based on one. We have the skillset resident in Tsunami Tsolutions to create algorithms that combine combinations of variables like compression, temperature, vibration, current draw and others. In this fashion, we can more surgically reveal when a part must be replaced, or an asset serviced. A service provider can then reduce unnecessary service while reducing outages and assume a better position for profitable outcome-based business models, or just more profitable service contracts.