Transforming Service Delivery with the Industrial Internet

Grow your after-sales service business and support Product-as-a-Service business models

There are few times in history when a perfect storm is poised to shift an entire industry. We are experiencing such a time right now. Three trends are barreling down in parallel on original equipment manufacturers (OEMs), creating a post-sales environment that demands attention and provides tremendous opportunity.

- Customers demand service transparency and rapid response

- Smart-connected devices generate rich, instantaneous data like never before that can help optimize product and service offerings

- A skilled labor gap is challenging service teams to find new efficiencies

While these forces raise challenges, they also provide an exciting opportunity to transform service delivery in ways that dramatically increase lifetime customer value. Unlike any prior time in history, sensor data combined with the Industrial Internet of Things (IIoT) and powerful asset performance management (APM) software, like APM Health featuring Intel technology, provide OEMs tremendous visibility how their equipment is performing in the field.

This combination can help manufacturers unearth powerful insights to improve customer service and technician efficiency. Those OEMs that have gone even further with their digital transformations are building entirely new revenue streams, like Product-as-a-Service business models that promise to delight customers, control costs, and accelerate innovation.

Original equipment manufacturing: An industry in transition

Delighting customers in times of extreme expectations

According to a 2017 Technology Services Industry Association report, 73% of field-service providers report they have struggled to achieve profitable revenue growth.[1]

Predix APM Health unlocks new opportunities

- Reduce maintenance and downtime
- Reduce warranty claims
- Improve first-time fix rate
- Inform faster product-development cycles
- Increase customer satisfaction and service revenues (renewals) through proactive service

Monitor

Respond

Learn

Optimize

[1] http://info.tsia.com/the-state-of-field-services-2017

Those that are most successful demonstrate a relentless focus on customer experience to differentiate themselves.

Today's equipment buyers operate in what we call the "Amazon era," where they have been trained to expect complete transparency before and after a sale has been made. We no longer compete with the best customer experience our industry delivers, but the best customer experience anywhere. As such, equipment manufacturers must deliver remote diagnostics, along with preventative and proactive services; schedule on-site repairs rapidly; document easy-to-follow maintenance practices; and offer accurate resolution estimates. This can only be done when we have complete transparency into how equipment is performing onsite, in real time.

Creating new value with data insights

The key to delivering proactive, cost-effective service is to detect potential issues before they impact customers' operations. One of the key reasons equipment owners have developed their own skills in equipment repair is that the alternative, downtime waiting for an OEM to visit, was unacceptable. Modern technology turns this on its head; allowing OEMs to service the equipment before an issue occurs.

*According to Gartner research, **89%** of marketers expect to compete primarily on the basis of customer experience this year.[2]*

Modern industrial equipment is heavily instrumented, giving a voice to all its mechanical or electronic components – measuring everything from inventory levels to temperature discrepancies. Leveraging IIoT and centrally monitoring and taking action based on this information can have a direct impact on the cost-effectiveness of a service business. First, you no longer have to wait for a physical inspection or manually initiated data process to collect critical data. Second, since information collection happens as a background task, a wide range of data points can be sent without disrupting operations. Third, since the data collection happens automatically, human error is eliminated, creating not only a comprehensive data set, but an incredibly accurate one.

Best of all, the value of the data increases exponentially when traditional sources of data such as service histories, sales data, service-parts inventory, and equipment locations are supplemented with the new product-generated data.

Successfully using this data requires smart software to filter, analyze, and recommend actions on the massive volumes of data being ingested.

Five key areas where equipment manufacturers can drive new value with data insights from smart-connected devices:

1. Minimize unscheduled downtime

2. Reduce after-sales service costs

3. Improve equipment reliability and yield

4. Realize Product-as-a-Service business models

5. Accelerate new product innovation

[2] https://www.gartner.com/marketing/customer-experience

Sensor data will enable true condition-based maintenance with pinpoint precision, resulting in an estimated *10-30%* in maintenance cost reduction. But only those who capitalize on this opportunity with a solid software foundation will benefit.

Leading companies are using sophisticated cloud-based analytics to detect subtle variations in how equipment is operating and use these signals as a predictive indicator of future issues and downtime, allowing the OEM to prevent potential issues. And if trouble does occur, this data enables rich diagnostics that can evaluate the current state of the equipment and what has occurred leading up to the failure. These leaders have demonstrated they can predict potential failures of customer equipment, optimize performance, and reduce warranty claims.

*Lack or inefficient use of skilled resources regularly impacts profitability. More than **70%** of manufacturers report at least a **5%** increase in overtime costs, and nearly one-third report a greater than **10%** increase in overtime costs as a result of not being able to fill skilled roles.[3]*

Delivering cost effective Product-as-a-Service business models

Equipment manufacturers are looking to Product-as-a-Service business models to meet customer demands of delivering higher levels of service and accountability for their equipment. These models often include high service level agreements (SLAs) and require new and better approaches to ensure uptime while managing costs, such as:

- Right size spare parts inventory and staffing levels without risking excess downtime
- Anticipating equipment failure or degradation before unplanned downtime occurs to maximize yield and quality

APM Health plays a critical role in success

APM Health, part of the Predix Asset Performance Management (Predix APM) suite, manages data across a variety of assets and systems, creating a comprehensive and validated data repository with a single, unified view. By solving the challenge of data disparity and latency associated with the management of industrial assets, APM Health with Intel technology, provides a real-time view of asset health and condition status—delivering early warning of potential failures and highlighting elevated risk areas.

Powering after-sales productivity

A reactive approach to customer service is more than a subtle failing; it costs your service business profits, impacts customer satisfaction, and erodes brand loyalty.

Luckily, APM Health helps manufacturers move from reactive to proactive condition-based maintenance. APM Health addresses the critical data integration and latency challenges to drive proactive maintenance that delights customers and drives down your costs.

Minimize unscheduled downtime
Predicting when equipment downtime might occur and preventing it improves throughput for your customers. This also builds customer satisfaction and a strong relationship with the equipment manufacturer.

Reduce after-sales service costs
80-90% of equipment failures begin randomly, and "just-in-case" service technician staffing and spares inventory for unexpected downtime can be extremely costly. Leveraging proactive condition-based techniques to detect issues before equipment fails enables leaner staffing and lower spare parts inventories.

Equipment reliability drives improved yield
It's commonly understood that downtime of critical production equipment impacts throughput. What isn't common knowledge is that degraded performance from supporting equipment-like filters, fans, pumps, and conveyors can also have a significant impact on quality and yield.

Accelerate new product innovation
New product development can be daunting because it's often hard to know how products are being used in the field, and if the design of the product actually matches its real-world usage. By aggregating machine data from customers, OEMs

[3] http://www.themanufacturinginstitute.org/Research/Skills-and-Training-Study/Skills-and-Training-Study.aspx published by The Manufacturing Institute

[4]The Power of GE Productivity Infographic

now have the ability to discover systemic problems with the equipment, as well as gain insight into how that equipment is then being used in the field.

Four signs it's time to re-evaluate your approach to after-sales service

Do any of the four signs below sound familiar? If you're suffering from one or more of these signs, it is time to reconsider.

1. **Do technicians have the right information to fix equipment right the first time?**

   Without definitive insight into what needs to be addressed, field staff are sent onsite unprepared. Real-time equipment data can change all that by sending real-time signals of exactly what needs to be addressed.

2. **Are you missing contract renewal goals?**

   Frustrated customers, plagued by frequent repairs or slow response times, will seek out alternative services. APM Health can cut down on service calls by enabling real-time condition-based maintenance practices to help you drive down unplanned downtime and increase customer satisfaction and NPS.

3. **Is your data sitting in silos? How much work is required to bring together data from across different customers to identify patterns that should be addressed by product-development cycles or new maintenance protocols?**

It's one thing to have data, it's another to use it effectively. The strongest service programs not only respond to abnormal equipment conditions, they also seek out patterns over time. If it feels like every customer is sitting on an island and you are not learning from them in aggregate, it's time to add an analytics layer to your solution.

4. **Are your aftermarket repair/warranty expenses eating into profits due to excessive warranty claims?**

   APM Health can transition your service operation from expensive, reactive, fixes to proactive condition-based maintenance and preventive care.

Are you able to harness the value of your entire installed base of equipment to find new insights and continuously improve reliability?

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About GE

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