









# Tokyo Electron America Upskills Field Service Engineers with Intelligent Search to Best Achieve Customer Outcomes

## Snapshot:

-  **Industry:** Semiconductor Production Equipment (SPE): Service and Support
-  **Geography (HQ):** North America
-  **Users:** 500 Field Service Engineers (FSEs)
-  **Coveo Solution:** Coveo Intelligent Search Platform



## Results at a Glance:

-  Initial and mean time to repair - Reduced 20%
-  First-time fix rates - Increased 20%
-  Resolution times for worst-case scenario events - Reduced by 33%
-  Costs per incident and equipment downtime
-  Customer Satisfaction scores
-  Customer Outcome Focus



## Client

Japan-based [Tokyo Electron Limited \(TEL\)](#) is a leading supplier of semiconductor and flat panel display (SPE) production equipment. Each of TEL's six SPE product lines are manufactured in separate factories in Japan and the United States, and each factory has its own standards for processes, contracts and knowledge management along with customer, product and service data stored differently in each group.

With a customer base as geographically diverse as its product manufacturing and knowledge creation, TEL recognized that providing superior product quality and reliability in such a complex environment wasn't enough. It needed to fundamentally alter the nature of its relationship with customers to ensure that any product downtime was minimized and to ensure customers were receiving the help they needed to achieve their strategic outcomes. As a result, TEL's US affiliate, Tokyo Electron America (TEA), began the evolutionary process of transitioning its customer support group from a product focus to a customer-outcome focus.

**“Coveo is one of the keys because it enables knowledge consumption at the point of need to achieve the customer’s desired outcome.”**

Kevin Chasey, SVP, North America, TEA

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[www.coveo.com](http://www.coveo.com)  
[info@coveo.com](mailto:info@coveo.com)

**United States**  
 San Mateo, CA  
 +1.800.635.5476

**Canada**  
 Quebec City, QC  
 +1.418.263.1111

**Europe (EMEA)**  
 Schiphol-Rijk, Netherlands  
 +31 (0)20 658 6334



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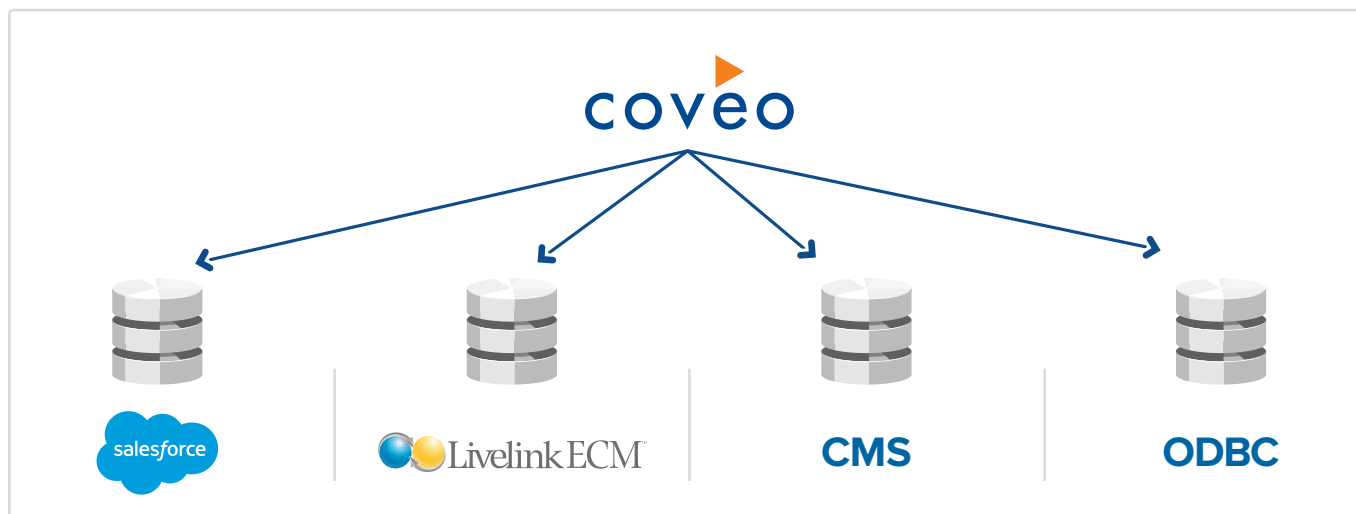
## Business Objectives:

- Transition from a product- to customer-outcome-focused organization, beginning in field service
- Reduce costly downtimes for complex manufacturing machinery
- Improve customer satisfaction and loyalty by improving the field service team's ability to retrieve and leverage customer, product and service information at the moment of need, in the field
- Lead the SPE industry in demonstrated safety and quality driven knowledge-centered service execution

## Reducing Complexity to Reduce Worst-case Scenario Events

In order to achieve both service excellence and outcome-based support, the TEA customer service team realized it was imperative to reduce operational complexity (inherent in its decentralized manufacturing program) for its field service team. The 500-strong team of field service engineers (FSEs) is responsible for maintaining a broad set of highly configurable and complex manufacturing equipment — downtime of which can easily translate into millions of dollars in lost revenues for its customers.

The team felt this could be accomplished by helping FSEs to upskill as they worked, by giving them real-time access to contextually relevant customer, product, and service information in the field, during service calls. This information was stored across TEL's IT ecosystem of record, a diverse collection of cloud-based applications, data sources and legacy systems that included Salesforce, Livelink document and collaboration management systems and various ODBC sources containing technical and business unit documentation.



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Compounding the complexity was the multilingual nature of the information and the complex security framework associated with accessing information from across a wide array of systems and data repositories, each with its own permissions and security framework.

The field services team was particularly aware of one challenge with the potential to disrupt customer outcomes and which relied upon near real-time knowledge for new products: worst-case-scenario events that could occur on first-of-kind tools where normal engineering or service information was not readily available. Even in these scenarios, the service team was amazingly able to achieve 95% compliance to service levels; however, the team wanted to achieve more. Upon analysis, it was apparent that if knowledge retrieval could be revamped and real-time FSE upskilling achieved, these worst-case-scenario events could be shortened by as much as one-third.

However, while the problem was plain the solution was not. The information important in these scenarios was both patchy and buried in copious manuals, authored in a variety of formats, and created to varied specifications. Additionally, the amount of new knowledge concerning these target tools dramatically increased daily. “In one month alone, we had 136 new documents produced,” said Ed McMurray, Director of the North American Field Service Team for TEA. “It would take an FSE approximately 20 minutes to review each new document, totaling nearly 45 work hours a month.”

To manage this challenge, teams of FSEs would often assign a single field engineer with a talent for finding information as the ‘documentation’ person who would find technical information since it required deep skills and a fair share of heuristics. It became essential to enable real-time, knowledge consumption in the field to better upskill all FSEs at every point of work, and best achieve customer outcomes.

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By doing this, FSE time for reviewing documents would be nearly eliminated, while enabling the FSEs to become more proficient, more quickly, on new equipment as well as on desired customer outcomes—by having the information they needed, at the moment of need, in the field. Moreover, customer satisfaction rates would be improved and costs per incident decreased by enabling FSEs to access critical information at the moment of need, including via mobile devices while on service calls with customers. An advanced and intuitive intelligent search solution was required to provide FSEs with a single search interface through which they could quickly view relevant customer, product and technical information while in the field.

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## Selecting a next-generation search partner

TEA's first attempt at deploying a search solution proved more difficult than the team initially imagined. "We learned very quickly that in describing the science behind search engines, many organizations make it look very easy. But if you try and use them on your own, it's very difficult. It was a constant struggle and had a steep learning curve," said Kevin Chasey, SVP, North America, TEA.

The initial, third party search appliance was eventually shelved due to its inability to successfully index all of TEL's knowledge repositories and applications and the difficulty in understanding and influencing relevance. Additionally, the search solution was not able to negotiate and respect the multiple layers of permissions set by role and user level. As a result, search results were not secure, were incomplete and took an unacceptable amount of time to be returned.

The team returned to the drawing board looking for a more advanced, secure and intuitive enterprise search solution – one that could unify TEA's entire IT ecosystem of record, with complete security, and with the ability to extract and interpret the taxonomies and logic built into the various repositories and applications. Also important was the ability to easily tune the relevance of results.

After an intense selection process, the team unanimously selected Coveo. The Coveo professional services team configured the solution based on service requirements and the implementation went off without a hitch, with an accelerated pace. The application was configured regularly in real time in response to TEA service team feedback. "These guys know service," said Chasey. "Before I finished explaining a need or a nuance to our business, they were already implementing the solution to it."

## Upskilling creates a multiplier effect

For TEL, the impact of rolling up technical information from various, highly localized sources via a single search interface, delivered to FSEs via mobile computing in the field, has been tremendous. The solution casts a wide net and provides an intuitive interface for all FSEs to intuitively access real-time, relevant information that has been virtually consolidated in a unified index, from a variety of sources.

In particular, the ability to draw product and customer data from various sources is having a "multiplier effect" on the proficiency of the field service team, allowing FSEs to learn from others' past experience and knowledge. "Rather than an FSE reinventing the wheel every time they come across a problem they're not familiar with, we're allowing them to reuse existing knowledge that somebody else has already created, and that's invaluable in terms of time saved and making an FSE better at their job," said Randy Norton, TEA Director of Business Unit Operations.

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Norton cites an example where a service engineer on a field service call in New York pulled an error code from a product, and rather than looking to resolve the issue via traditional searches through manuals and product systematics, did a search within Coveo for the error code and discovered an FSE in Phoenix had already trouble-shot the same issue months earlier with links to the documentation. “It’s a perfect example of reusing prior knowledge to drastically reduce the time to resolution for the customer.”

Since implementing Coveo, the TEA service organization has redefined the customer experience at Tokyo Electron by reshaping the way in which their field service engineers consume information during the customer interaction. As a result, FSEs are able to improve their understanding of each customer’s business, TEL’s diverse product and service offerings, and past work, gaining the skills needed to help customers achieve their desired outcomes.

TEA Field Support outcomes include:

- ▶ Shortened worse-case-scenario event resolution by 33%
- ▶ Reduced the initial visit repair time and the mean repair time by 20%
- ▶ Increased the first-time fix rate by 20%
- ▶ Improved overall customer satisfaction
- ▶ Reduced the overall costs per incident and equipment downtime
- ▶ Better enable customers to achieve outcomes

## Results

With the successful transition by the TEA services organization to an outcome-focused service model, TEL’s global services team is now looking at Coveo as a catalyst for delivering this new service model globally. “Coveo is one of the keys because it enables knowledge consumption at the point of need to achieve the customer’s desired outcome,” according to Chasey.

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