

# Merlin Printing Reduces Waste and Increases Productivity

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*A system they were searching for, that truly works and provides the results they hoped for*



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# Overview



## *Challenge*

Data collection from vintage equipment was manual – inefficient, inaccurate, and unreliable

Transform legacy analog equipment to enable automatic digital data communication



## *Solution*

Install CONNECT with AUTOMATER on the two 1990's Heidelberg web-offset printing presses

Provide automatic digital data collection, real-time monitoring, and analytics



## *Results*

Visualization into utilization and efficiency of both presses and production teams

Real-time feedback to teams, production management, and front office staff

Waste reductions, cost savings, operational visibility, and productivity improvements



# Challenge

# 01

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*Data collection from vintage equipment was manual – inefficient, inaccurate, and unreliable*

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*Transform legacy analog equipment to enable automatic digital data communication*

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# Challenge



Merlin Printing was facing problems in finding an easy and reliable way to collect machine activity and shop floor data from their vintage Heidelberg Print Production Presses. With growing demand, their manual data collection methods became inefficient and outdated. Additionally, management needed access to accurate job cost data and analytics in order to better understand their make-ready waste and the true cost of production for their numerous job versioning requirements.

*Merlin needed to implement a system to transform the tedious, and often inaccurate manual process into something efficient and reliable that could be used to make important business decisions – decisions that directly impact their bottom line.*

Comprising the majority of Merlin's production volume, the pair of 1990's Heidelberg presses was clearly the place to start the transformation. Like most conventional printing presses, there was no digital communication available to directly collect key data automatically. Their conventional equipment needed to be transformed, to be digitally connected, and software automated. With automatic data collection and analysis in place, Merlin knew they could better understand their operation, run a smoother shop, and be more proactive in averting potentially costly issues. Implementation via hybrid cloud further provided improved support and remote visibility.

Since the job make-ready time and waste on an offset press directly correlates with machine operators' skills, it was also important to understand which production team was more efficient and which ones could use better training.

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*What did Merlin do?*

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# Solution

# 02

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*Install CONNECT with  
AUTOMATER on the two  
1990's Heidelberg web-offset  
printing presses*

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*Provide automatic digital  
data collection, real-time  
monitoring, and analytics*

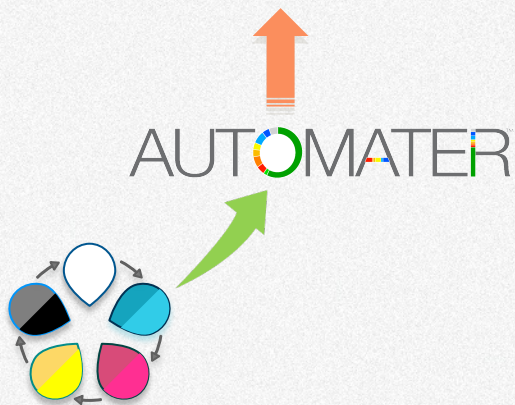
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# Solution



Figure 1: Data Collection Tablet



After an unsuccessful attempt with another system, Merlin installed CONNECT® with AUTOMATER™ on both of their Heidelberg presses. Employing edge computing and secure IIoT technology, the system automated data collection from the vintage machines with connectivity into the state-of-the-art CONNECT analytics platform. Operators appreciated the convenience and usability of the shop floor data collection module, while Management was then able to monitor press and operator performance and perform detailed analyses of the uptime and downtime activities as they occurred.

Merlin has recently celebrated a full year of operation with CONNECT. The system has exceeded both shop personnel and management expectations across production.

*"The system provides us with a simple way to collect and analyze data, as well as to continuously improve print shop operations", says Charles Lewis, Merlin's VP of Production Operations.*



# Solution

The real-time feedback from CONNECT allowed Merlin management to gain prompt visibility into the utilization and efficiency of both presses and production teams. Merlin now compares repeat jobs, understands the different costs of each print job version, tracks labor efficiency and waste week-to-week, understands the reasons for variations, and gets more production output in fewer hours.

Installation of production dashboards provides visibility and comparison of current performance with prior shifts, promoting healthy competition amongst operators on the shop floor. CONNECT's real-time dashboards have been proven to motivate press operators to work more productively, benefitting total production output. With greater and immediate shop floor visibility, preventative and corrective actions can be taken in time to avoid costly downtime and its associated delays. Additionally, the front office can share in the progress of production.

Watch our [video](#) showing CONNECT operational at Merlin Printing.

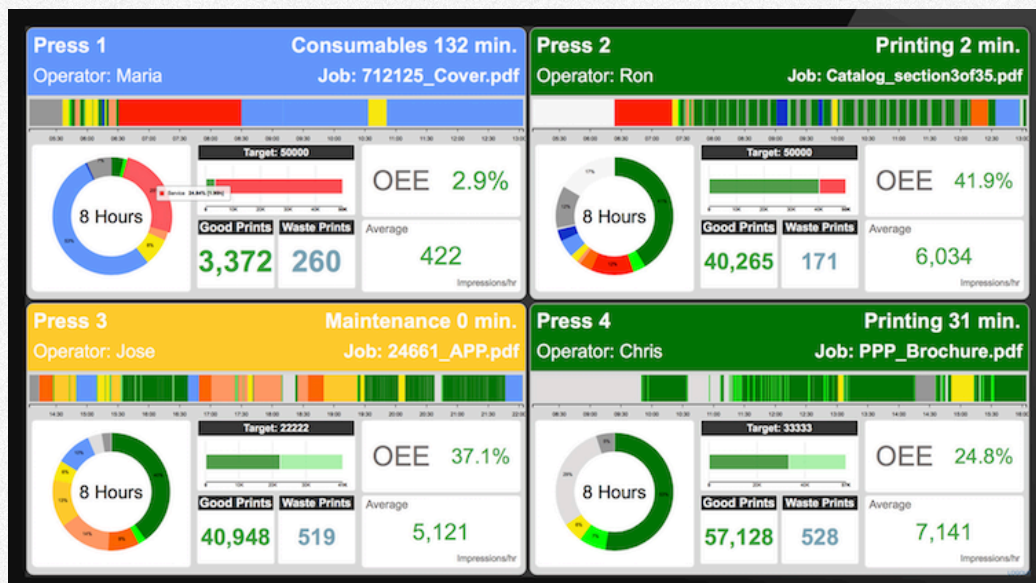


Figure 2: Real-Time Dashboard



# Results

# 03

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*Visualization into utilization and efficiency of both presses and production teams*

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*Real-time feedback to teams, production management, and front office staff*

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*Waste reductions, cost savings, operational visibility, and productivity improvements*

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# Results



*Print Time increased by 3.47%, shown in Figure 3.*

The SpencerMetrics CONNECT system is already showing results and an ROI.

Comparing production metrics and KPIs at Merlin from the early stages of using CONNECT (May 1, 2019) overtime for 10 months (through February 29, 2020) proved that overall operational improvements had been made and productivity had increased.

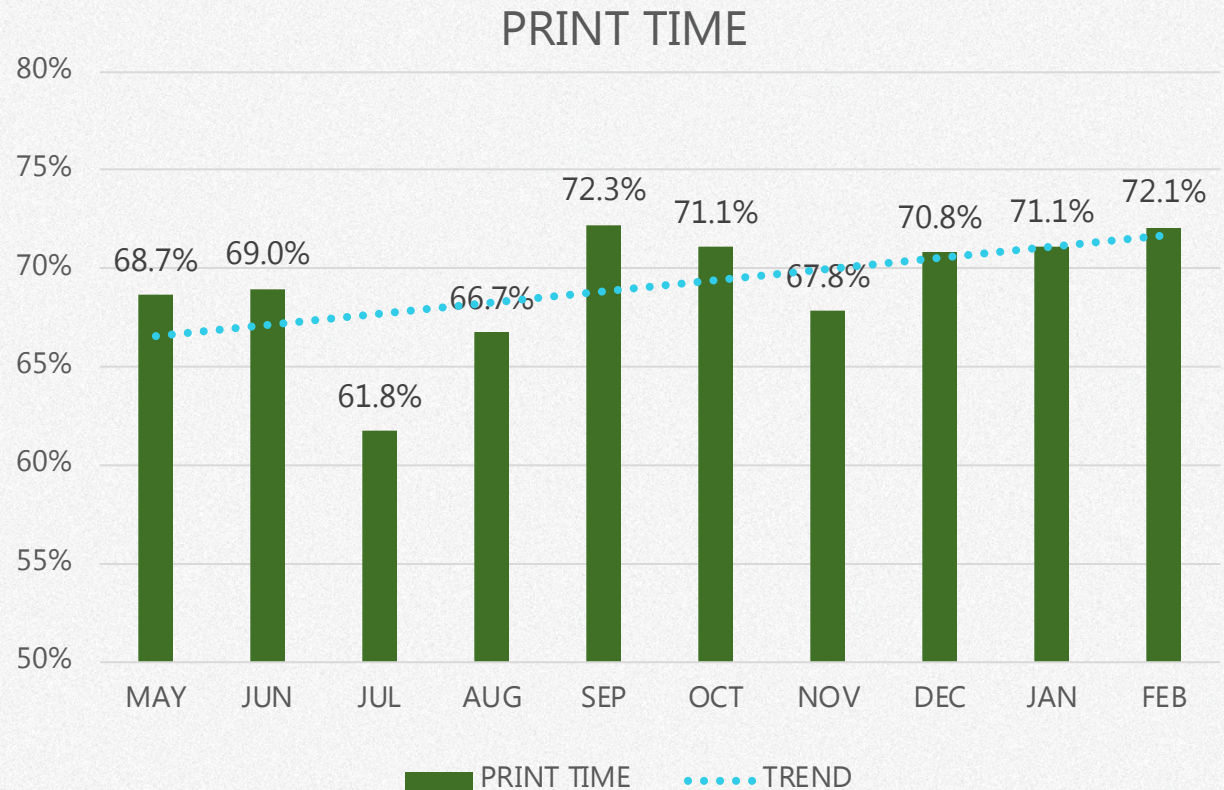


Figure 3: Monthly print time as a percentage of total production run time from May 2019 to February 2020



# Results

Print Time and Make-Ready (Setup) Time are each a percentage of the total overall production time; changes in these numbers directly impact profitability – Merlin is (1) producing more good output, and (2) using less paper and labor time to produce similar jobs.



*Make-Ready Time decreased by 2.37%, shown in Figure 4.*

## MAKE-READY (SETUP) TIME

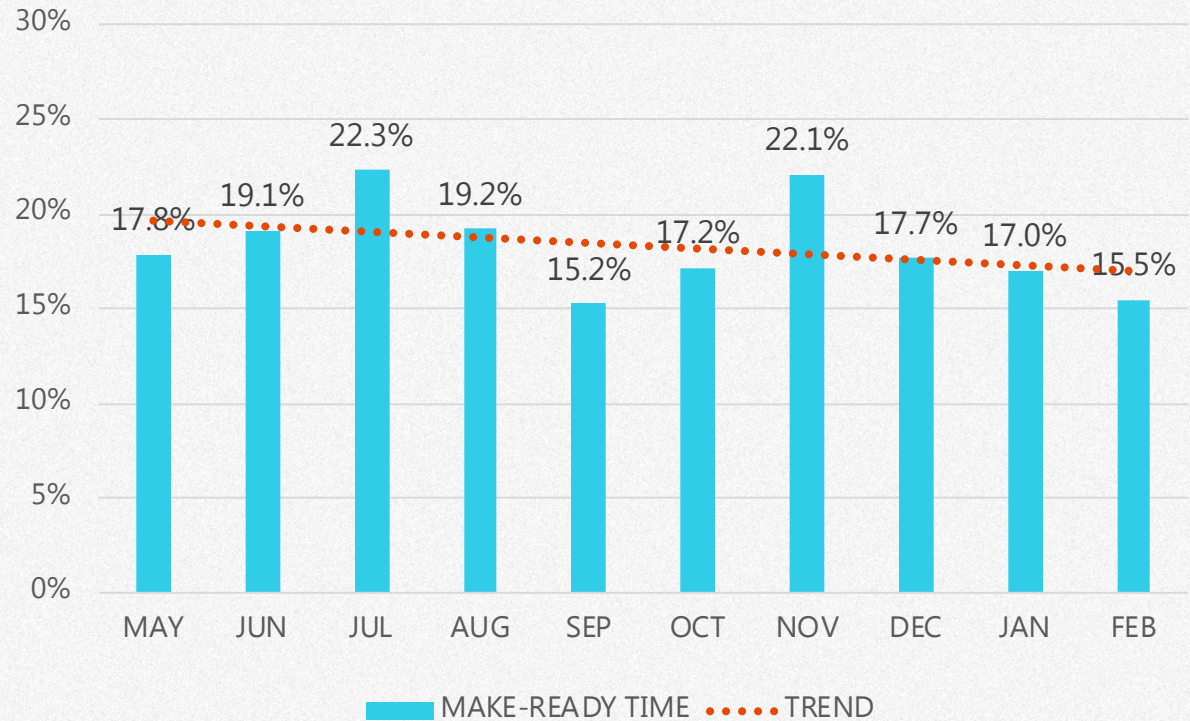
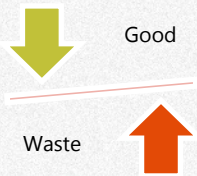


Figure 4: Monthly make-ready time as a percentage of total production run time from May 2019 to February 2020



# Results

Another positive impact is a 2.5% improvement in Good Prints versus Waste Prints.



*Merlin produced 2.5% more good, sellable output – 2.5% less waste output, shown in Figure 5.*

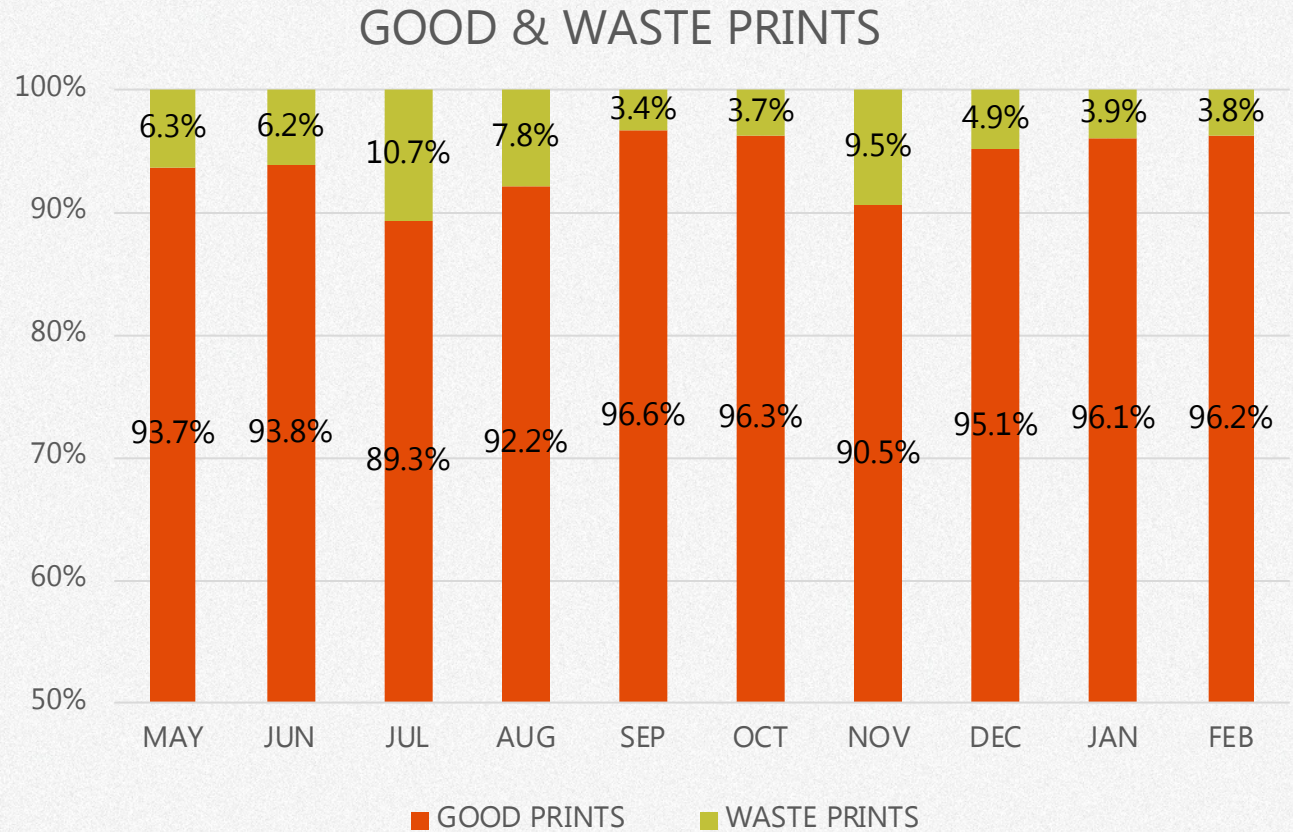


Figure 5: Monthly good and waste print percentage, total of 100%; from May 2019 to February 2020



# Results

OEE (Overall Equipment Effectiveness), a key manufacturing metric and another measure of Merlin's operational productivity improvement – reached closer to its full potential. (Contact us for our OEE White Paper)



*OEE increased from 60.7% to 62.9%, shown in Figure 6.*

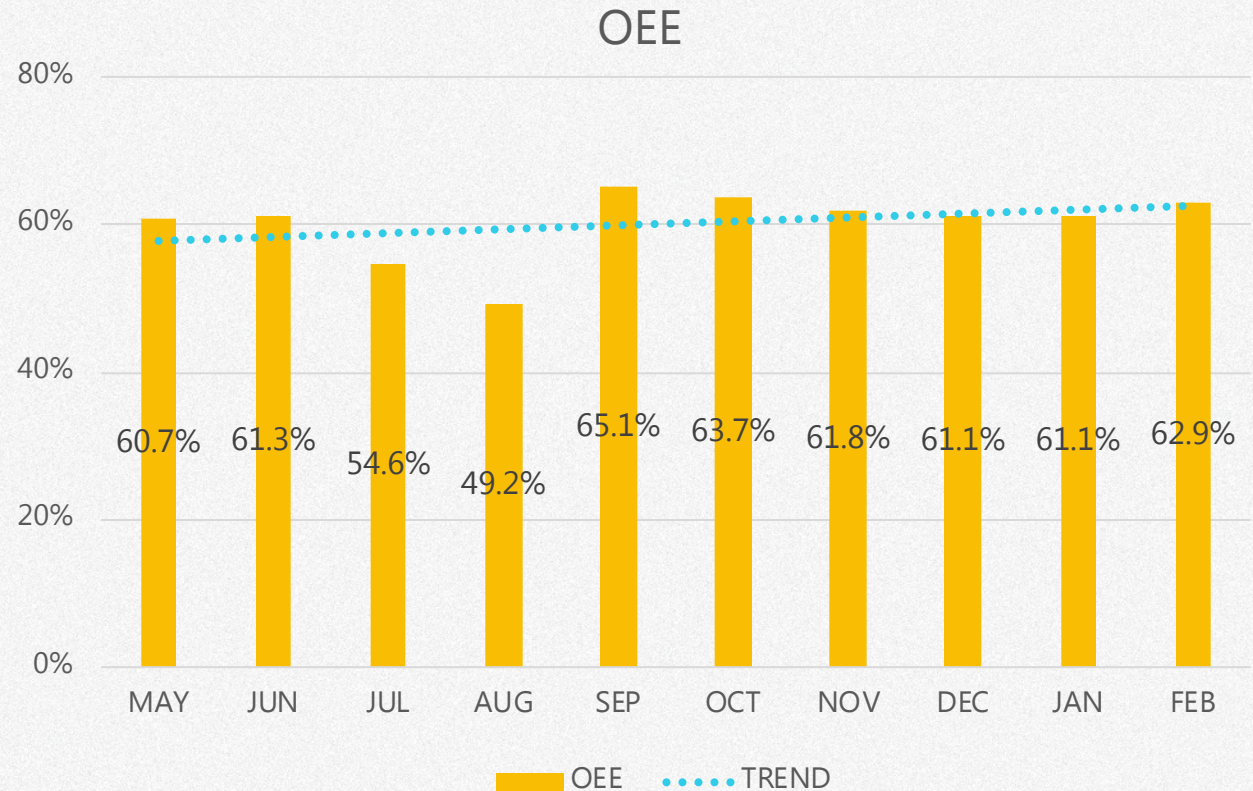


Figure 6: Monthly OEE percentage from May 2019 to February 2020



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## Results



# *What would Merlin's future value look like?*

By increasing printing time, Merlin produced over 3.6 million additional good prints than they would have produced at the earlier average production rate (May to September).

Assuming a value of \$0.04 per print, over 50 working weeks per year this could be worth over \$330,000 additional annual revenue – a key benefit of using the CONNECT system to monitor production and implement knowledgeable changes.



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*We were impressed with the AUTOMATER technology...they not only promised but delivered fast and reliably. **CONNECT is easy to use and is already providing more value than we expected.** AUTOMATER really brings our legacy big iron into the new age of production tracking. With real-time visibility we can focus on improving our and our clients' costs.*

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— Steven Vid

President, Merlin Printing





# Takeaway

# 04

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*A system that really works  
– start seeing results!*

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*About Merlin Printing*

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*About SpencerMetrics*

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# Takeaway

*Without a system in place to track and monitor performance, Management lacked accurate, timely data from the key equipment and the shop floor.*

When you have available, accurate information, you have better insight, revealing key improvements to production, in turn increasing good output and productivity, while decreasing waste and downtime.

Every day we are learning that data, accurate and timely data, is increasingly important. If you are looking for a solution to better understand your company's production – to improve your operational efficiency and reduce your costs – you need to rely on automation and analytics by CONNECT.

We will help your business get started right away and you will begin seeing results and a great Return on Investment. To utilize powerful data analytics for problem-solving and operational improvements in production, contact SpencerMetrics today.





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# About | Merlin Printing

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*Merlin Printing continues to use the  
CONNECT system on their shop floor  
and for managing overall operations.*

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Merlin Printing is a full-service commercial printer located in Long Island, New York. In addition to producing weekly papers and shoppers to many local businesses for over 50 years, Merlin also offers a comprehensive set of marketing solutions, from business cards to billboards, serving a variety of customers located up and down the East Coast.

Merlin runs a busy print shop, often three shifts per day, six days a week, for some 50 weeks throughout the year. Their production floor includes a pair of conventional Heidelberg web offset presses, Xerox digital production printers, wide format and more.



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# About | SpencerMetrics



SpencerMetrics LLC first product won a MUST SEE EM'S workflow award at PRINT 13. After extensive use in Canada and Europe as well as in diverse US sites, at PRINT 16 the now-patented CONNECT® system won another MUST SEE EM'S award, followed by a RED-HOT TECHNOLOGY award at PRINT 18.

SpencerMetrics LLC is part of the Spencer Associates Group, which has provided a boutique digital imaging and printing consultancy bridging the boundary between technology and product marketing since 1989. Spencer & Associates works with organizations for which printing is mission-critical – optimizing digital printing quality, color management and workflows. Its SpencerLab division provides competitive analysis, digital color technology, consumable yield expertise, and Focus Group management; its printer test software is a de facto standard.