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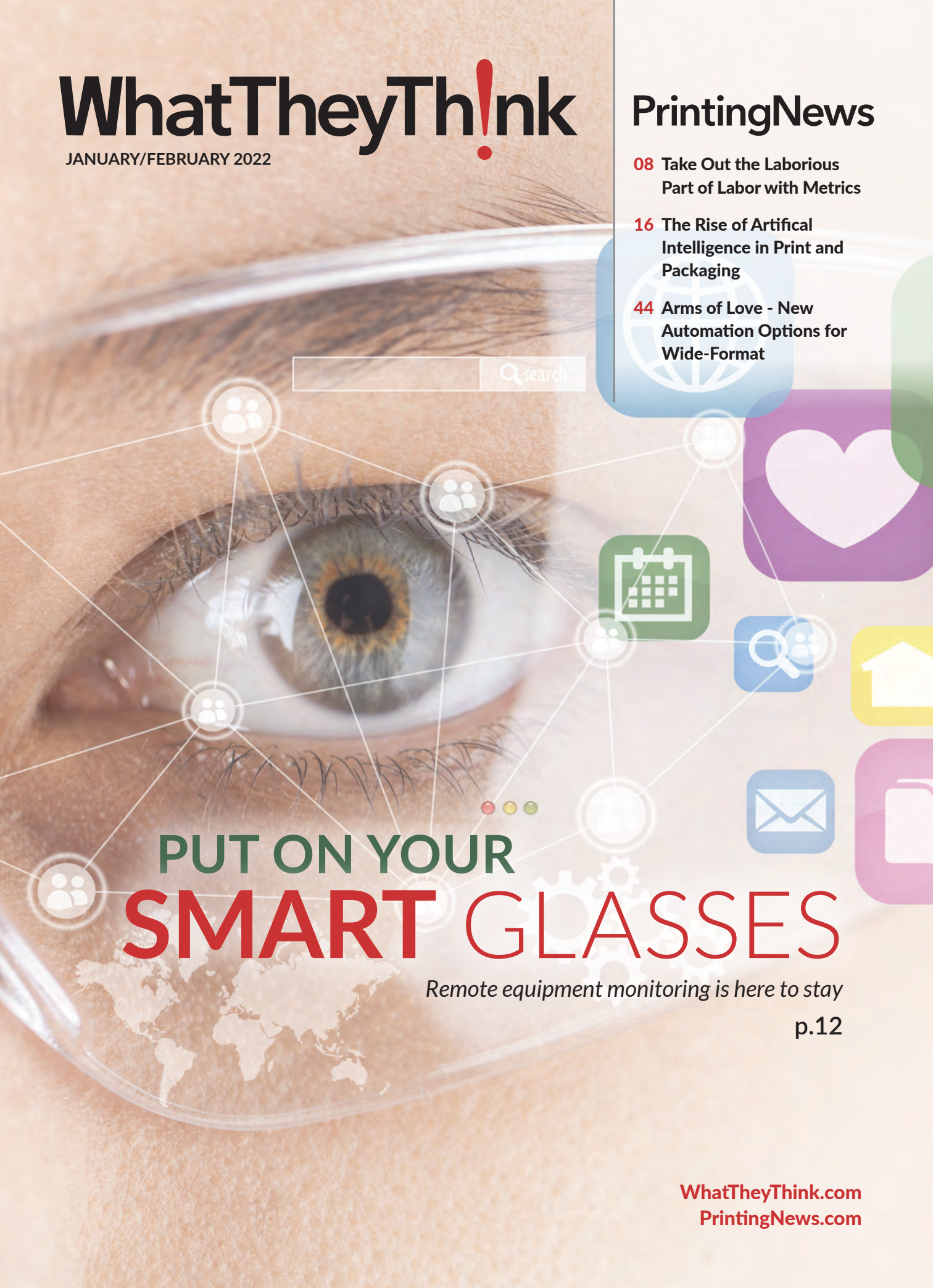

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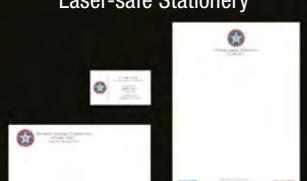

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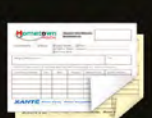

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PRINTING OUTLOOK 2022—ONCE MORE, WITH FEELING

Richard Romano
Managing Editor
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Richard Romano has been writing about the graphic communications industry for 20 years. He is an industry analyst, author and co-author of more than half a dozen books.

We are digging into the results of our "Fall 2021 Print Outlook Survey" for our forthcoming "Printing Outlook 2022" special report, which should be available by the time this issue hits your mailbox.

There is a sense that 2022 feels like, à la Groundhog Day, our third attempt at starting 2020, building on the successes of 2019 before things went south. Last year's "Business Outlook" was very much a COVID-centric survey—businesses were still licking their wounds from the year of lockdowns and quarantines and uncertain about the future. In the current survey, the consensus is that it's time to put the pandemic behind us (even though it is still very much in front of us) and get on with what had been planned pre-COVID.

Here is a little sneak peak of some survey results.

In terms of business conditions, 17% of "Fall 2021" survey respondents reported that, in 2021, revenues increased by more than 25% over 2020. In contrast, in our "Fall 2020" survey, 28% of print businesses said that revenues for 2020 had decreased more than 25% compared to 2019. It's good to see that the industry has rebounded from our terrible, horrible, no good, very bad year, with very few shops reporting decreases.

Last year, "regaining business lost due to COVID" and "keeping my employees safe from COVID" topped the list of business challenges, but this time "consumables and supplies prices" takes the top spot for the first time in more than 20 years of industry surveys. "Pricing," always a challenge (it was number one in our last pre-COVID 2019 survey), comes in at number two and is tied with "finding qualified production personnel." Staffing challenges dominate the top 10 challenges this survey.

In terms of business opportunities, there is not a lot of change from last year. One of the things we learned in our conversations with printers during 2020 and 2021 was that they had mapped out a business strategy by the end of 2019, and 2020 was the year they were going to implement it—the best laid plans…. So there are no real "new" opportunities perceived in the current survey because businesses are finally getting around to pursuing the old ones.

Likewise with planned investments, which are pretty low—one-fourth (25%) of respondents had no planned investments for 2022.

So, looking ahead to 2022, we find the industry in a pretty good position to finally execute the plans they drew up in 2019. Naturally, everything will depend on what happens with the virus, but it looks like we may finally get our chance to return to the trajectory we were on before March 2020. ●

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LABOR DOESN'T HAVE TO BE LABORIOUS

How to use observational platforms to keep your business running smoothly.

By Pat McGrew & Ryan Mcabee

Two significant challenges are facing the print industry: Labor shortages and inefficiency. They are related, and there is a path to manage them, but it takes more than trying to find people to hire and tightening business and production workflows.

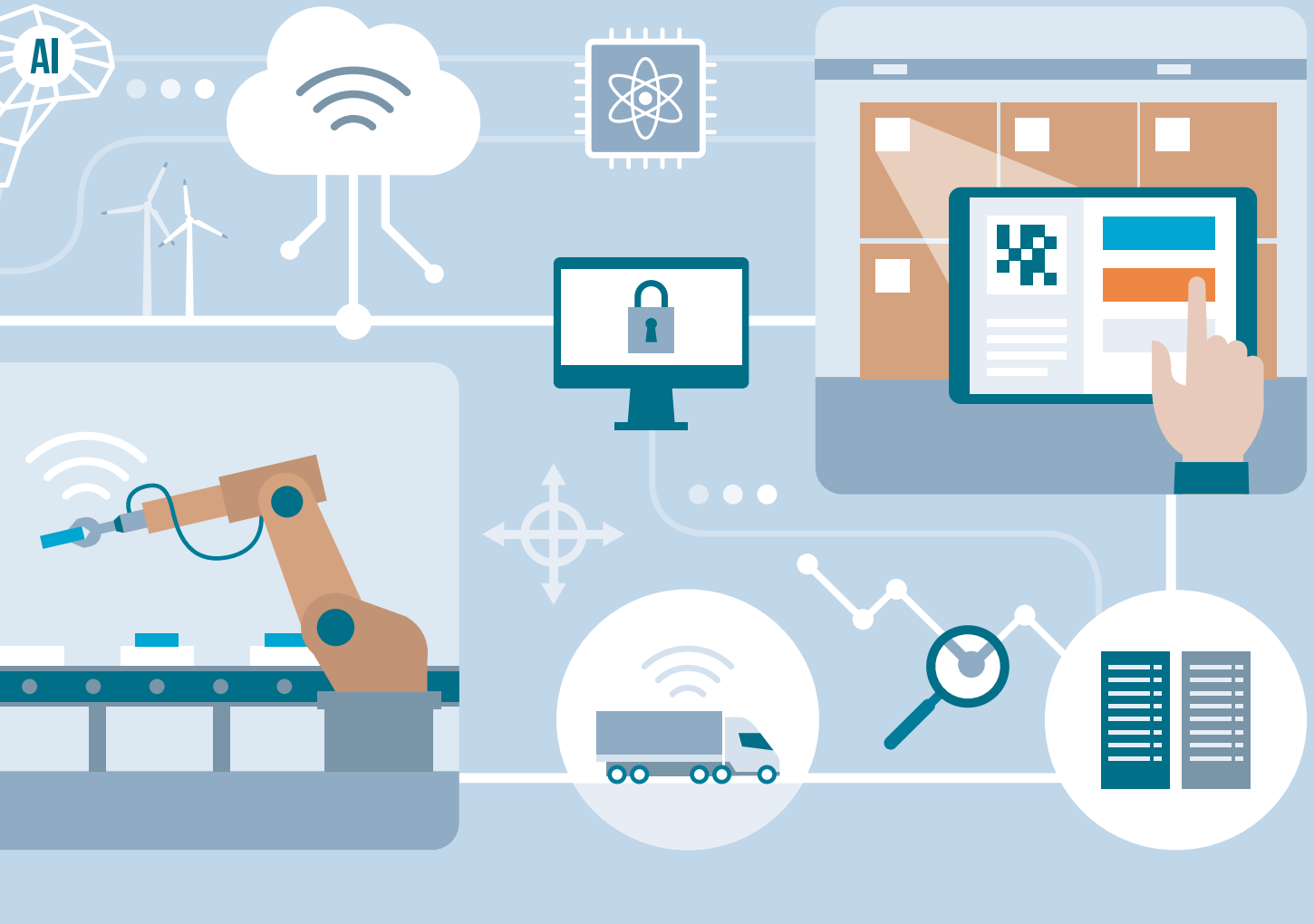
The industry needs a new approach to understanding business bottlenecks. It also needs innovation, powered by automation, that leverages available data to assign staff only where they are needed. It's a tall order, but there are good reasons to consider changing how your business operates. Adding observational platforms can facilitate that change.

Labor shortages will not get better.

Unemployment numbers in the United States continue to improve, which might make you think we are out of the woods. The Bureau of Labor Statistics reported a 4.2% unemployment rate for November 2021 as 210,000 jobs were filled, continuing the trending improvement. While that improvement is welcome, the impacts are not the same across every industry or type of worker.

Many professionals continued to work through the last two years because they moved from the office to home. Some left jobs that didn't offer remote working options and found work in the 90,000 professional and business services jobs added in November 2021, along with 13,000 in financial services. Jobs in construction and manufacturing also increased in November but still lagged the February 2020 employment levels. Meanwhile, overall printing industry employment increased a mere 1% from September to October 2021.

The day-to-day reality for many business segments, including the printing industry, is constant labor challenges coming from every angle. Inflation and current market conditions continue pushing up the cost to hire. The lingering effects of the



pandemic push workers to look for flexible hours, while others are pushed out of jobs as companies downsize to accommodate new business realities. Employment data shows that there are plenty of potential workers (roughly 14.5 million) disconnected from mainstream employment. They may look for work within an industry they know, move to gig work or start their own businesses.

Where does that leave print shops needing customer service workers, equipment operators, shipping/fulfillment clerks, salespeople, estimators and other critical roles? For many companies, the immediate focus is on shifting labor to cover production needs while scrambling to find new employees. It makes sense to review employee skillsets and leverage that talent where it is efficient and effective. Based on our years of print shop assessments, it is likely that your employees are not as effective as you think, because of the inefficiency built into your process. Observational platforms help remove the laborious processes from production based on a constant flow of data that allows supervisors to improve operations continuously.

Leverage technology to build efficiency.

Look at the examples of the largest corporations with massive labor requirements. Those companies continually optimize their processes by leveraging technology to identify the best use of available labor. You may see it where you shop. Walmart, Target and other retailers rolled out self-checkout kiosks to reduce reliance on cashiers, especially during periods of high traffic. Amazon uses robotics to augment warehouse staff. Some printing companies leverage industrial robots to transport paper to the shop floor and move work-in-process between stations. In each instance, technology stands in for people, allowing them to be deployed to more valuable work.

Companies are also removing labor from repetitive administrative and back-office processes using software "robots." You may use autopay, repeat

delivery and other options in managing your household. Printing companies can leverage similar automation within the business workflow to process data fed from production processes that ensure accurate billing. Whatever the method, companies are removing and augmenting labor in every facet of the business anticipating that some of the current labor challenges are likely here to stay.

Augmenting, shifting or eliminating labor requirements in a print environment where variables change from one job to the next is more complex than manufacturing industries like automotive that have less product and process variation. One key to finding labor gaps, bottlenecks and opportunities is observing, monitoring and measuring how the work flows through the shop.

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Gathering shop floor data manually as part of print MIS activities traditionally provided the who, what, when and where data for each job. Machine operators and other team members were often tasked with noting job status as each element was completed. They might use spreadsheets, notepads or mobile apps, putting the burden on the staff to remember to capture the data at the right time in the right way. Any person or process using that data had to rely on an essentially unreliable data gathering process.

Today, more of that data is captured using a combination of equipment-logged machine data, sensors, software and occasional employee input. Collecting data is an observational event that forms the basis of modern observational platforms when paired with technology to automate the process. Combining data inputs in these observational platforms provides a more holistic picture of operations allowing supervisors to fix bottlenecks and monitor key performance indicators (KPIs).

What can observational platforms tell us?

- Number of processes
- Time on task
- Time between processes
- Process variances
- Labor variances
- Time variances
- Consumable usage (ink/toner, paper)
- Consumable variances
- Waste quantities
- Equipment performance metrics (speed, uptime)
- Overall equipment effectiveness (OEE)

Modern Approaches to Observational Platforms for Print

Capturing information about the jobs, operators and processes interacting with the work as it goes through the print shop provides valuable and actionable intelligence that can improve operations and optimize the deployment of people. Observational platforms can highlight the sequential and non-sequential (e.g., proof correction) steps during job production and shine a light on the process variations that often impact job profitability.

This segment of the market is still maturing, with many vendors starting by offering dashboards specific to their product lines. Basic dashboards are the starting point for modern observational platforms. They combine available data and present it in a graphical format to provide fast insights into the current status. As far as they go, they are useful.

The reality is that dashboards are typically tied to a single vendor and may ignore the other activities and equipment used in today's mixed vendor print shops. Luckily more vendors are starting to provide interfaces, like APIs, for PSPs to access and repurpose data into other software solutions. To create an optimal environment, look for observational platforms that provide an open interface to all hardware and processes.

Two Observational Platforms with Open Interfaces

Since 1989, SpencerLab Digital Color Laboratory has been testing and analyzing imaging and print products, developing an understanding of the data that lies beneath the surface. With the introduction of SpencerMetrics data collection and analytics solution in 2014, they launched into

providing deeper insights from the data available on modern print platforms. In the summer of 2021, SpencerMetrics released JobHub, a new feature for their multi-vendor, mulit-technology LYNK and CONNECT solutions.

JobHub is a good example of applying an observational platform to the printing and packaging industries. It builds a map of each job production step, tracks the cost and resources for each step, flags issues and provides insight into whether that type of work can be produced more efficiently with other processes or equipment.

David Spencer, SpencerMetrics

"We believe in helping print service providers find the right data out of the vast amount available so they can see the best actions to take to improve their operations and profitability continuously," said CEO David Spencer. "The SpencerMetrics platform uses edge computing and an IIoT platform to offer this in an easy-to-implement and easy-to-use package."

JobHub is in the class of observational platforms that adds analysis to data capture to help management better understand their true production costs. Like all observational platforms, it does require human insight to categorize and contextualize the information being collected. When the equipment reports downtime, what was the cause? A person needs to tell the system whether the lost time was due to equipment malfunction, an employee break or one of the many other potential causes. Most platforms, including print MIS solutions with shop floor data collection, take this human-centric approach to capture and categorize what happens on the production floor.

Some solutions take a machine-centric approach where sensor-equipped machines and machine learning through AI reduce the amount of input needed from operators. HP Indigo's Auto Alert Agent 2.0 is one example of many in the industry, building intelligence into the equipment. This solution can detect, categorize and take corrective action for print defects, including automatic purging and reprinting defective sheets. It takes a mere 500 milliseconds from identification to purging, followed by a correction, to keep the equipment running efficiently. The result is better equipment productivity and efficient utilization of scarce labor hours.

Gershon Alon, PrintOS

"Our goal with features like Auto Alert Agent is to make the equipment smarter to reduce the reliance on the operator's time and skillset so they can focus on higher-value tasks," said Gershon Alon, head of HP PrintOS.

Observational platforms make your employees, management and print operations smarter, more efficient and productive, whether using the human or machine-centric approach. If the past two years indicate what is ahead in the printing industry, labor challenges will persist, forcing us to streamline and automate our processes freeing staff to perform their highest and best work. ●

***Ryan McAbee** is the Director of Keypoint Intelligence's Production Workflow Consulting Service. He is responsible for conducting market research, market analysis and forecasting, content development, industry training, and consulting with print service providers.*

***Pat McGrew** has more than three decades as an evangelist for technology in communication. She is an author and regular writer in the industry trade press.*

PUT ON YOUR SMART GLASSES

Remote equipment monitoring is here to stay.

By Cary Sherburne

Remote monitoring of all types of equipment used in printing operations has been around for some time. However, its value became even more evident during the pandemic, when it was not possible – or at least difficult – to send technicians on site when a customer had a problem.

Remote monitoring is not unique to the printing industry. We've been talking about Industry 4.0 and the Internet of Things for some time now, and digitization in all kinds of equipment and processes has become de rigueur for modern operations. One could even argue that implementing remote monitoring has become mandatory in order to remain competitive.

One provider of remote monitoring services defines it as "the ability to view machine status, performance and behavior from a distance." This offers a number of advantages for equipment vendors and their customers alike. And while in the early days, some print operations considered it to be too "big brother-ish," the value has been proven, and it is now generally accepted as a thing of value.

I recall attending the Heidelberg press conference at drupa 2016 where significant emphasis was placed on this capability and its value to customers and to the industry. Not only can remote monitoring capture data that enables predictive maintenance – i.e., predicting imminent failure of a component so the issue can be addressed before machine failure, thus reducing downtime. It also allows the equipment vendor to aggregate data from across the installed base to identify issues that may occur in multiple installs, providing them with insight into how to correct them.

The equipment manufacturer can also look across the installed base and identify high-performing operations, isolating some of the causals for their performance and generating baseline expectations. If a customer site is underperforming, this type of data enables the equipment manufacturer to make fact-based recommendations that can improve performance.

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And then ... the Pandemic.

All of these benefits were clearly understood before the pandemic struck. But COVID-19 introduced another benefit – the ability to address service issues remotely. Prior to that, it was common practice to send a technician on site. But when that became increasingly difficult, manufacturers responded by leveraging the remote capabilities they already had in place to enable the operator, or a local technician, to handle the problem without the need for an on-site visit by a specialist.

This obviously offered cost benefits to the equipment manufacturer; but in many cases, it also served to correct the problem more quickly, eliminating the wait time for someone to travel to the site and reducing overall downtime.

"Our ability to look inside the systems and see what they are doing has allowed us to minimize the amount of on-site service," said Larry D'Amico of Durst.

Heidelberg noted that the data sets from remote monitoring contribute to their Smart Print Shop approach. It enables them to use data on a large scale, helping people operate more productively and ensuring maximum uptime.

As we spoke to equipment manufacturers throughout 2020 and 2021, we heard these views over and over again. And we expect to see this trend continue, even when the pandemic becomes endemic, and we learn to live with it. Customers expect equipment to be reliable, and they expect quick fixes when something breaks. Vendors strive to meet these expectations; and leveraging their investments in remote monitoring is a key element in making that happen.

Will smart glasses make our print operations smarter?

The other accelerating trend we have seen is the growing use of smart glasses.

During the pandemic, smart glasses got a significant boost, according to a Tech Native post. Unlike in previous years where these glasses were seen as a "nice to have" technology gadget, people have now come to appreciate this wearable technology as a valuable tool that frees up hands and helps employees get their jobs done more effectively.

Tech Native also described smart

Cary Sherburne is a well-known author, journalist and marketing consultant whose practice is focused on marketing communications strategies for the printing and publishing industries.

glasses as a technology that superimposes data onto a field of view. This view is achieved through an optical light display embedded in wireless glasses or an AR overlay. AR glasses augment the reality perceived by the wearer of the glasses…while all AR systems are hands-free, they can look like classic eyewear, or binocular-like goggles, and some even with safety helmets attached.

We have seen several examples among equipment manufacturers where smart glasses are used in the installation and training process. Customers have reported that they liked the experience, both because it was more timely than waiting for someone to show up on site, and also because they found they were more engaged in the learning process when they had to do the installation work themselves. Following installation, they felt they were more self-sufficient than if a technician had been on-site and they were less engaged in the process.

And equipment manufacturers are also able to make better use of their specialists when the customer has smart glasses on site. The operator can walk the specialist through the issue remotely, and the specialist can provide verbal, written or even video guidance on problem resolution via the smart glasses. If an on-site visit is required, a local technician, supported by a remote specialist, can be very effective. And as a side benefit, the knowledge level of the local technician is also boosted.

The good news about smart glasses? There are more of them available, and they are increasingly more affordable. In the remote maintenance scenario, even a $1,500 pair of smart glasses will quickly pay for itself in terms of reduced travel costs, increased machine uptime and less customer frustration.

Don't have smart glasses? Not quite as sexy, but valuable nonetheless, is a cell phone Zoom call.

The Upshot

The demand for and the capabilities of remote technologies for predictive, preventive and even on-site maintenance has been accelerated by the pandemic. We don't expect to see the use of these technologies decline, even post-pandemic. Rather, they will continue to gain critical mass and increased sophistication over 2022 and beyond. If you are not sure about your equipment supplier's position on remote monitoring, smart glasses, predictive maintenance and the like, now is a good time to schedule a Zoom call with them to find out. ●

I'M SORRY, DAVE

The rise of AI in print and packaging.

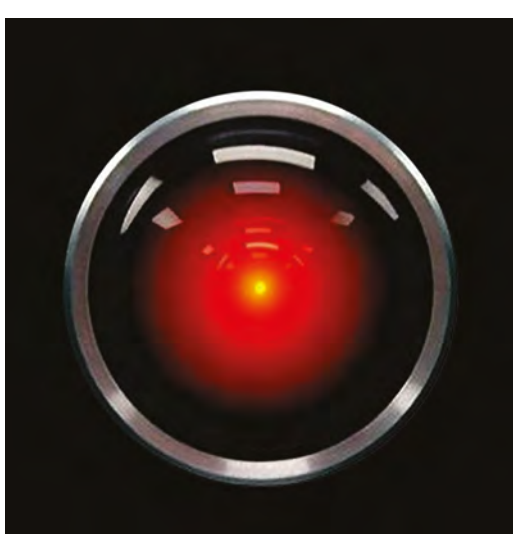
By David Zwang

We have all read about or seen lots of Sci Fi stories in our lifetime. While they are fascinating and capture the imagination, they have always seemed somewhat detached from our day-to-day lives. Although lately we have begun to have many "real life" Artificial Intelligence interactions, either directly or indirectly.

Many of our personal IA (intelligent assistant) tools like mobile phones, pads and computers are getting smarter a little bit at a time. With each software release, Siri and Alexa seem to become more aware of our routines and make suggestions that anticipate our next move. I was on a FaceTime call the other day and noticed that the camera on my iPad was following me as I moved around the visible area.

The main difference between IA and AI is that the former is designed to work with humans while AI is designed to allow systems to work autonomously. While I have yet to hear "I'm sorry, Dave. I'm afraid I can't do that," we seem to be getting closer to that reality.

Today, there is a wave of innovation



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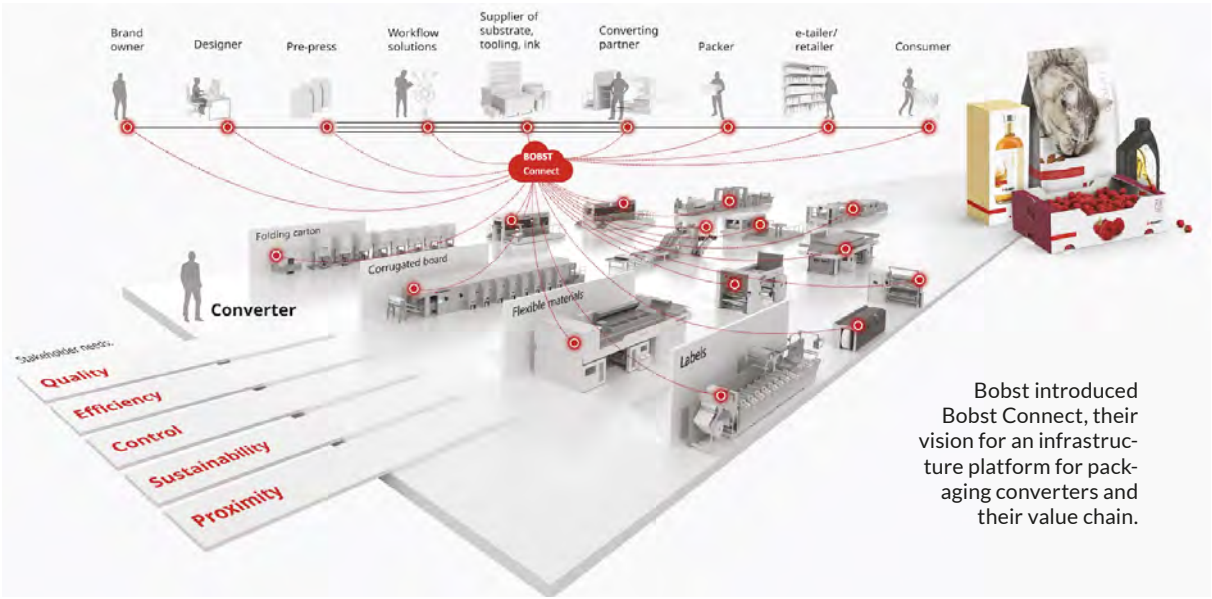

Bobst introduced Bobst Connect, their vision for an infrastructure platform for packaging converters and their value chain.

in print and packaging equipment and workflow systems that begins to implement AI, not just within an individual system but across complete supply chains between different systems, processes and even extending to semi-autonomous labor.

Artificial Intelligence vs. Machine Learning

John McCarthy, widely recognized as one of the godfathers of AI, defines it as "the science and engineering of making intelligent machines." However, at the core it is making systems that can mimic human intelligence and/or behavior. We regularly speak of automating processes, when the reality is that much of this automation is a simple form of AI. In the automation process, we design process decisions based on pre-determined sets of data and/or instructions (eg. if, then, else).

Most of the AI that we see today in print and packaging systems are based around machine learning (ML), which is really a subset of AI. In ML, the machine or software has the ability to modify its behavior dynamically when exposed to more data. The "learning" part of machine learning describes the ML algorithms, which attempt to optimize behavior along a certain dimension. For example, they usually try to minimize error or maximize the likelihood of their predictions being true.

Taking it one step further, systems like Amazon AWS and Microsoft Azure have developed data science-based cloud platforms and frameworks specifically designed to increase the amount of available data and algorithms also known as "deep learning." By expanding the amount of collected data used to compare against and make predictions, it increases the likelihood of the decisions being true.

AI in Practice in Print and Packaging

Various levels of automation are included with most of the hardware and software systems currently available, usually in the form of rule-based decision making. Although AI in the form of ML, enhanced by deep learning platforms like AWS and Azure are now becoming more widely available.

Bobst introduced Bobst Connect,

their vision for an infrastructure platform for packaging converters and their value chain. It is designed to provide inter-operability with a converter's customers' manufacturing execution systems, cloud-based platforms from other partners and plan-level platforms through the use of APIs.

Initially, it focuses on connecting the production hardware data and a few processes, like job submission, remote maintenance and value chain production data availability, although they envision a much broader implementation.

New features will include centralized job and production setup and monitoring, process optimization and performance benchmarking. It is anticipated that initially the benchmarking will be based on established KPIs, however I would assume that they will start to leverage a wider data set and AI in the future.

Heidelberg recently introduced PAT (Performance Advisor Technology) as a professional service to its customer base. Since Heidelberg has been capturing machine data from over 13,000 connected machines and information relating to more than 60 million make-ready processes in their Heidelberg Cloud, they have a good base of information to build an AI service. PAT monitors various machine and process activities and measurements against established KPIs, identifying performance data and anomalies resulting in dashboard reports and recommendations to increase performance. PAT will ultimately include results that compare Heidelberg machines with an anonymized comparative group from the Heidelberg Cloud.

HP PrintOS was released in 2016 as a workflow infrastructure platform. Currently it has over 13,000 companies and 27,000 devices connected to its cloud-based platform. It includes an assortment of application designed to provide their installed base the tools and information needed to optimize their operation.

One of those applications is Print Beat, which is designed to provide a full overview of your press' performance. It tracks your press performance and compares it to five established KPIs. It also provides you a way to compare your site performance to other PSPs regionally and across the globe. It currently doesn't offer insights into how you can improve your performance, so it performs more like IA than AI.

Kodak PRINERGY On Demand is a subscription-based cloud implementation of their production workflow software platform along with PrintVis, the MIS/ERP solution built on MS Dynamics, VPress, the web-to-print solution and real-time collaboration using InSite and Microsoft Teams.

The solution resides on Azure which supports the AI capabilities of each of the modules. It currently uses a dashboard

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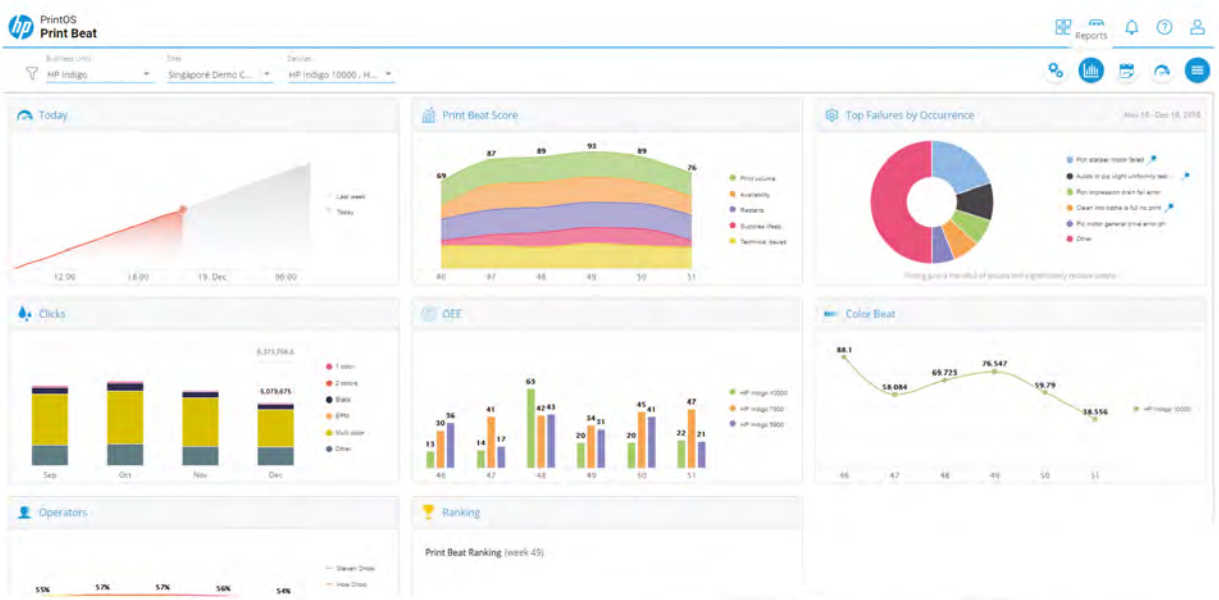
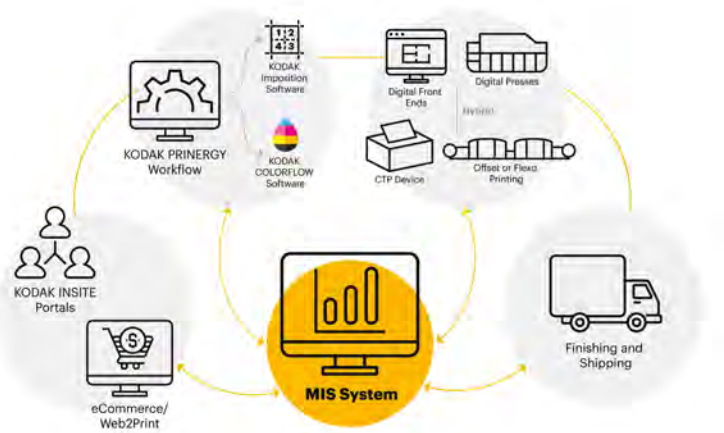


to provide production details and control of connected devices and operations. However, PrintVis print-specific functionality could utilize the capabilities of Azure ML.

They envision being able to automatically customize content for direct mail and catalog campaigns based on customer behavior analysis, provide predictive maintenance of printing machines with embedded sensor technologies, and even improve security between web-to-print interfaces and their end customers, using real-time anomaly detection.

Taking a lesson from Uber, to maximize the profit margin of an incoming job, you could conceivably tailor the estimate using deep data intelligence. Included criteria could range from the product being produced, specific and general customer preferences, the season, delivery conditions, and likely far more granular data over time and as technology and the learning increases.

This is just a sampling of some of the AI solutions supporting the print and packaging industry today. I would expect more to come to market at an increasing rate. Since one of the advantages of



ML enhanced deep learning is that it is continually increasing the base of information, the functionality and value will increase over time.

More to Come ...

I would like to address your interests and concerns in future articles as it relates to the manufacturing of print, packaging and labels, and how, if at all, it drives future workflows including "Industry 4.0." If you have any interesting examples of hybrid and bespoke manufacturing, I am very anxious to hear about them as well. Please feel free to contact me at david@zwang.com with any questions, suggestions or examples of interesting applications. ●

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THE GREAT UNBOXING

The packaging boom and what it means for PSPs

By Joanne Gore

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The advent of packaging goes back thousands of years, stemming from the need to store and transport food and water. Both the ancient Egyptians and Chinese used packaging in this way. The former would blow glass to make containers for food and water, while the latter used mulberry bark to wrap their foods. As they honed the ability to make paper, they used it to pack teas, medicine and foods – potentially the earliest form of flexible packaging.

Fast-forward to the Middle Ages, where the prevalent method of packaging involved wooden barrels and crates. They were rigid but not fragile, could

keep food and water from open contamination and were strong enough to hold valuables – all of which was important considering the vast Medieval trade routes network.

The next major evolution in packaging occurred with the First Industrial Revolution, with which came the cardboard box and tin can. While excellent inventions that are still used today, cardboard boxes and tin cans were not affordable commodities back then. Other than being used for packaging food and water, they were reserved for luxury goods - quite the contrast to today, where our grocery stores are brimming with both.

Over the Second and Third Industrial Revolutions there were numerous advancements and innovations made within the packaging industry. In fact, it was during this period that it became an actual "industry." Paper bags came along in 1852, followed by cartons in 1879, cereal boxes in 1906, cellophane in 1908, then plastic wrap in 1933. During the Post-War era, the creation of bubble, pop tabs and plastic bottles occurred.

The Evolution of the Packaging Experience

Think about the difference between today's cereal boxes and those of yesteryear. Whether it's on a box or a flexible bag, today's cereal packages are more friendly to the environment, boast bright colors, simple, crisp designs and touchable finishes. They also feature symbols/icons, many of which are governed by special category-based regulations – like the preservation or recycling process. Some even feature interactive print elements.

Touch is critical for consumers. As humans, we like to hold things in our hands – it can trigger or influence emotions and is proven to provide the strongest sensory recall. Bridging the physical world through which we feel, with the digital world in which we increasingly rely upon, has unshackled CPG brands.

For example, General Mills recently launched two new cereals. To help promote them, they partnered with 8th Wall and Eyekandy to create an AR mini-game to feature on the new box. This evolution of cereal packaging speaks to a larger advancement in the industry as a whole - an evolution accelerated by a pandemic that fueled the forces of change within the packaging industry.

Brands are recognizing that interactive print improves their customers' experiences – and ultimately attracts more business. For example, 19 Crimes created an app that brings their wine bottles to life via AR. They recently added rapper and entrepreneur, Snoop Dogg, who shares stories of how he achieved his success – available by simply scanning the bottle label with their app.

Another example is Hershey's use of QR codes on product packages. The code redirects consumers to a landing page that lists ingredients, allergens and an option to contact a representative.

Ynvisible Interactive and tech firm Innoscentia are partnering in an effort to create interactive food labels that can detect spoiled food, which would significantly reduce the amount of food that is wasted. Increasingly, this kind of transparency and open communication between brand and consumer is expected across all channels.

Unboxing – The Packaging Phenomenon

In 2014, Amazon delivered 20 million packages. In 2020, the number skyrocketed to 4.2 billion. According to Modern Retail, Amazon now ships more parcels than FedEx. One reason for this has been the explosion of online/e-commerce storefronts. In 2018, an estimated 7 million online stores existed, whereas in 2021 there are an estimated 12 to 24 million, according to Digital in the Round.

More online stores means more parcels shipped – and more brands that need packaging. And not just any old "need to ship the product" box – but brand-showcasing packaging that leaves a lasting impression for the unboxer.

Social media plays a big part in online shopping behavior; almost 75% have made online purchases after watching a video on social media. Did you know that the amount of time people have spent watching unboxing videos just on their phones is the equivalent of watching the holiday classic "Love Actually" more than 20 million times? Type in #unboxing on Instagram and over 700,000 posts pop up. Head over to YouTube and choose from nearly 90 million videos of boxes being opened.

Technology – Powering Change Within the Packaging Industry

Advances in technology, along with changes in consumer needs and behaviors, has shifted the ways in which packaging is not only produced, but how it's used to market and present products.

According to Statista, roughly 70% of consumers alter their buying decisions based on climate change concerns. The packaging industry, in response, has adapted. Increasingly, packaging is utilizing sustainable materials, and brands are searching for ways to create increasingly eco-friendly packaging. For example, Mars Wrigley recently partnered with a scientific firm to develop biodegradable candy wrappers.

Industry 4.0 – widespread use and advancement of technology, increased interconnectivity and advanced automation – has enabled the packaging industry to innovate and adapt to the constant shifts in consumer behavior, concern and expectation. Digital packaging continues to grow as an affordable, eco-friendly solution.

In its "Future of Digital Print for Packaging to 2022" report, Smithers predicts very strong growth in corrugated, carton, flexibles and direct-to-shape, with developments in metal printing. They predict that the rapidly expanding digital (inkjet and toner) packaging market will grow to exceed $22.0 billion in 2022.

Conversations around workflow, automation and e-commerce solutions have intensified within the print industry in the wake of the pandemic. Add on the packaging boom and voilà - Print MIS (Management Information Systems), ERP (Enterprise Resource Planning), and W2P (Web to Print) solutions are being developed specifically for the packaging industry. These solutions are designed to streamline and automate workflows, reduce costs and errors, speed-up turn-around, and improve ROI, profits and customer satisfaction.

Software vendors like CloudLab, which recently launched their own web-to-pack offering, are enabling PSPs to capitalize on the packaging and e-commerce boom – whether they're feeding digital or offset presses. Customers can order anywhere, anytime from an online store, personalizing and customizing every aspect of their order.

Even e-commerce behemoth, Shopify is getting in on the act. Together with Celtic House Venture Partners, Shopify's CEO invested in Creative Layer, a personalized printing platform for Shopify creators, expected to emerge as the leading personalized print-on-demand platform.

The Packaging Boom – And What It Means For PSPs

When lockdowns occurred in 2020, it changed consumer habits and behaviors. Wanted to eat out? You had to order in. Wanted to purchase something other than necessities? Order it online. For the most part, this mentality has formed into habit for consumers, and according to the OECD, it isn't likely to revert any time soon.

Food delivery and e-commerce – particularly retail e-commerce – exploded during the pandemic, and as a result the demand for packaging increased significantly. Considered essential, the packaging industry – along with food and beverage and medical – drove demand for packaging and tool and die components. In mid-April of 2020, when most businesses were shut down, the packaging industry continued to operate at between 83-95% capacity.

Today's boxes, bags and packages are eco-friendly, sustainable solutions that are worthy of the unboxing experience. They grab attention, intrigue customers, and persuade them to choose one product over the rest – both online and off. PSPs attentive to customer expectations, the unboxing phenomenon, e-commerce, interactive print and the science of touch can capitalize on the multi-billion-dollar packaging boom – and influence a fluid, seamless brand experience across any and every channel – from shopping cart to shipping box. ●

Joanne Gore is founder of Joanne Gore Communications. She has spent the last three decades helping companies maximize their marketing and communications efforts. Contact Joanne at joanne@joannegorecommunications.com.

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GET WITH THE PROGRAM

Automation starts with your Print MIS/ERP.

By Jennifer Matt

When I think about automation, my mind dives into the weeds of software, since my perspective on the print industry for my entire career has been from the software perspective. So, automation to me really equates to things happening in a programmatic fashion.

For example, a customer places an order in a web-to-print solution, and that order is programmatically added into the Print MIS/ERP by software rather than by a human using their brain power and time to input it into the Print MIS manually. Or an artwork file is automatically linked to a job in the Print MIS/ERP by a prepress automation tool, which provides the press operator with a single click to retrieve approved artwork at the time of production.

"Programmatically" is a very powerful word. And it is very different from "manually." The primary difference is that you must define everything precisely when you are programmatically implementing something. Software programs only do what you tell them to do. They cannot come up to the line of scrimmage and call an audible based on how they see the defense lining up. They can't abandon a screen and back cut to the basket when their defender is overplaying them. Programs just do what they are told. Humans can make audibles. Humans can make back cuts to the basket. Humans can look at a situation and decide the standard process does not apply here, and they can choose to do something else altogether.

You might be thinking, "I want my business to be able to call audibles. I want my business to be able to decide when to back cut to the basket." A lot of businesses are run this way.

The culture is that we are flexible to an extreme. We can constantly shift to adapt to our surroundings. Doesn't this sound like a positive thing? It is not. It is chaotic. It is slowing you down. It is making you highly inconsistent. It is costing you a lot of money, because you are managing everything that happens in your business as if it's a special project. Every single job in your print business is not special. Don't try to convince me of this.

There is always an 80/20 rule. There are patterns. There are recurring tasks that are done repeatedly, every single day.

Automation is about finding those recurring patterns and then taking them out of the hands of humans and into the realm of software, so that repetitive tasks can be done programmatically.

You know what happens when repetitive tasks are done programmatically? The humans working for you have more time to deal with the exceptions; the 20% of things that require an audible or a back cut to the basket. You don't want to waste expensive human brain power on the ordinary, on the non-special parts of your business.

"Programmatically" automating anything in your business will inevitably involve your Print MIS. This is (or should be) the system of record for your print business.

What automation often uncovers is that your use of your Print MIS/ERP is not consistent or optimized. Jobs don't always have the right status on them. Data isn't always filled in the same way. Some of your CSRs simply put everything in the notes field and ignore all the "structured data" fields all together.

Now you're in an automation cycle, and when you try to programmatically update systems, you find all the inconsistencies that humans have introduced into your system of record. This can be frustrating because it slows your automation progress down and it feels like a lot of work to get to the root cause of all the data issues in your MIS.

There is a tendency to simply bypass this issue and try to push automation anyways. This is where the trouble begins.

Automation works when your people trust it. Suddenly software is creating jobs that will be manufactured. That's a big change from being able to walk up to a CSR who manually input a job and ask why they did this or that.

The trustworthiness of the integration is directly related to the trustworthiness of the data in your Print MIS/ERP. Often the best investment you can make in automation is to clean up and optimize the data in your Print MIS/ERP. Once a program is creating orders, you will see how consistent you can be because you tell the program to do precisely what you want it to do and it does it. Humans, on the other hand, tend to fluctuate based on levels of training, expertise and time constraints.

If you are on an automation journey, and your progress continues to get stifled by bad or inconsistent data in your Print MIS/ERP, I highly suggest you back up and take the time to truly address the situation. It is a worthy investment.

The foundation of your entire business is locked up in the data of your Print MIS/ERP. When that data is trustworthy, your whole business can move at a much faster pace. It is incremental across every aspect of your business, shaving seconds and minutes from almost all interactions. ●

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***Jennifer Matt** writes, speaks, and consults with printers worldwide who realize their ability to leverage software is critical to their success in the Information Age.*

OBSERVABILITY 101

If it moves, measure it. And use tools to act on that data.

By Adam Dewitz

If you look up "observability" you find a very academic definition on the "measure of how well internal states of a system can be inferred from knowledge of its external outputs." And while the concept originated from electrical engineering and control theory, it has become a buzzword in software engineering and product development in recent years.

From the halls of MIT to the command lines of Silicon Valley, observability has morphed to include tools and techniques that take system monitoring, such as how long a process takes to complete, exceptions, errors and failures, to a new level

that creates a single source of truth and instrumentation to provide actionable insights and business intelligence.

A few years ago, I was at a technology conference and an executive from Etsy told the audience, "If it moves, we track it. Sometimes we'll draw a graph of something that isn't moving yet, just in case it decides to make a run for it." In other words, they are monitoring everything and making business and operating decisions on how critical business infrastructure is working.

So Big Tech has utilized observability within its infrastructure to make business decisions bridging engineering, operations and business management.

But how can a printing business use these strategies? Here are few examples:

Customer Experience

How long does it take to provide a customer an estimate? How long does it take to order a product in a web-to-print store front? What's the abandonment rate in your digital storefront?

Sales

You can measure what products are selling or monitor how sales have been changing for different products and adjust marketing and other resources accordingly.

Workflow

How fast can files be processed? What are common errors that break file processing? How long does it take to go from customer submission to printed output?

Print Production

What is the productivity of a piece of equipment today, this week, this month?

And with measurement in place, here's a scenario enabled by system data coupled with observability and automation.

A customer needs a quick turnaround on a job, and places an order from your storefront. Your workflow software automatically catches a common file issue, because your developer had data insights to add a feature to catch that error, and queues up the print job. The print job goes to press and is sent to the bindery for cutting, but along the way the job cart gets misplaced. Your MIS/workflow system is tracking the status and raises an exception alerting staff but also requeues the print job so that it can be reprinted and finished, so it makes the approaching shipping deadline.

When you combine system monitoring data with instrumentation providing data analysis, machine learning and artificial intelligence, you open the door to a new level of automation.

From digital storefronts, to workflow, to hardware, modern print production systems now support the ability to monitor the state of system. We now have a tremendous amount of data at our fingertips. Using modern observability techniques, we can use data from software and hardware to make business and operation decisions that create better buying experiences for our customers and make production efficient and more profitable.

Adam Dewitz is the chief operating officer of WhatTheyThink. It is the printing and publishing industry's leading media organization. You can reach him at adam@whattheythink.com.

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CERAMIC TILES & THE RECIRCULATION REVOLUTION

How the history of inkjet technology changed interior design.

By Dr. Mark Bale

Ceramics tile decoration has become a crucial application for industrial inkjet. A brief retrospective on the market can set the stage for the technology advances that enabled the success in ceramics, particularly with respect to the importance of nozzle-based recirculation in print heads.

To understand the ceramic tile production and the reason inkjet proved so successful, you need to look at the way things were done before digital.

Print was done by a combination of flat-screen printing or rotary blanket printer, such as the System Rotocolor machine. Both techniques involved contact to the un-fired (green) tile, thus requiring a certain thickness to give the required strength to withstand the contact force. The printing also involved set-up related to patterning of the screens, or the blankets, and the changeover of these meant stopping the lines.

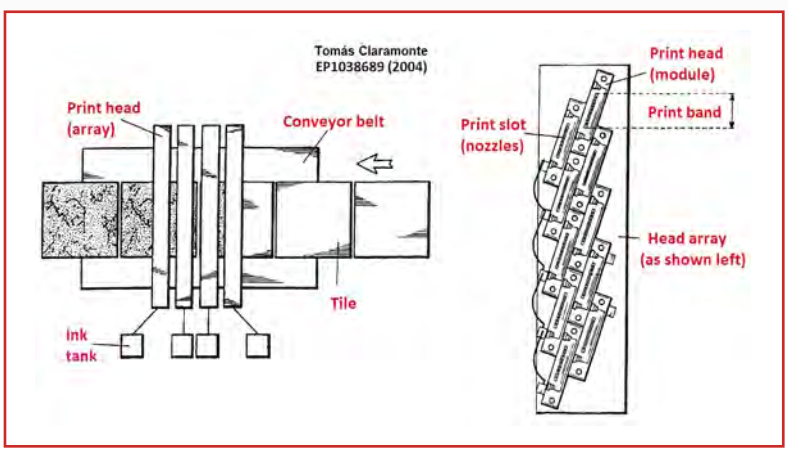
Shorter run lengths of seasonal designs were not economical and so the cash held in inventories was huge. Like it has in many other industrial segments we have discussed, digitizing the manufacturing of

ceramics allowed for much more freedom to realize the dreams of designers, this time to create modern living spaces such as shown in our lead image. As a result, the value proposition for buying a printer was undeniable and so the adoption rate was unprecedented, making ceramic tile production the inkjet case study.

The Defining Single-Pass Industrial Business Case

Digital printing addresses many of these challenges, but especially the number of tiles of a certain design that are needed to be kept in stock.

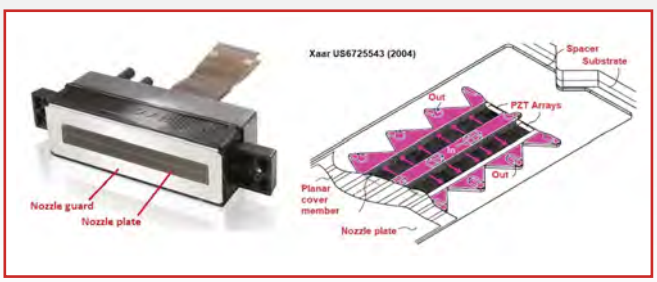
Ceramics has become the go-to inkjet proof-point for demonstrating the benefits of minimizing inventory where design versions exist, and can be re-printed when needed. To enable the digital printers to match the existing production style, single-pass printing was necessary: the tiles would pass under a print head one time each in order for the ink to be deposited.



This is shown in the patent image from early machine innovators Kerajet, shown below, filed in 1999. The print head is rotated to make the head stitch, a process common with earlier print heads, including the Dimatix S-class range. Although this patent disclosed The Xaar XJ500, the Kerajet printer would adopt the Seiko 510 version of the Xaar technology.

The main difference between ceramic tile printing and many other inkjet applications is that the green tile "body" is not a solid surface. It is made from pressed powder and has been coated in a base glaze that has been dried, but it is still wet and often warm when it enters the printer. This means the materials are very specific to the market.

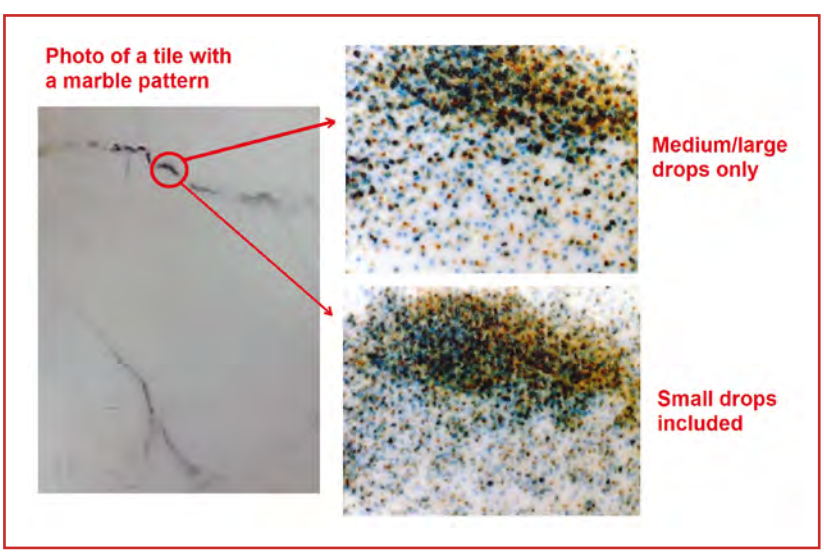
In their early patent on ceramic inks (US6402823), Ferro describes the printing of inks



based on oils that are printed onto a glaze, also from Ferro. By combining digital and conventional materials, ceramics suppliers have created a solution for manufacturing, a bit like an optimized primer-ink combination in paper printing.

The Recirculation Revolution

With the introduction of the Xaar XJ1001 in 2007, printer builders could improve the reliability of the system by



using the ThroughFlow (TF) feature of the print head and achieve a 360DPI resolution. The patented TF Technology allowed the ink to be constantly agitated throughout the ink system, thus reducing the chance of pigment settling.

The design concept is captured above. The photo shows the finished head, whilst the patent image reveals the ink flow path when the silver nozzle guard and plastic nozzle plate is removed.

(The images below demonstrate the differences seen when printing a tile with a Xaar head when different drop sizes are used. It shows how the smaller grayscale dots fill the space more evenly so that when viewed close-up they are not so easily visible. This reveals one of the reasons that tile printing was so successful early on – that some of the images can be a little more tolerant of defects than some other applications.

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As time went on throughout the 2010s the head designs began to respond to the needs. Xaar produced a larger drop size head in 2012 in the form of the GS12. In the same year, Fujifilm Dimatix launched their competing 27pL SG1026MC "Starfire" heads. Seiko and Kyocera released their RC1536 and KJ-4C alternatives in 2015, and Konica Minolta followed up soon after with most offering the same 360dpi.

Which head to choose for any application comes down to finding the right DPI and frequency combination that matches the customer needs of print speed versus drop size and coverage and getting the widest fluid compatibility, including compatibility with water-based inks, for example. I covered this on a recent Inkjet Explainer Webinar with Mary Schilling on Inkjet Insight.

Ceramic Materials – Aqueous Inks and Beyond

The majority of conventional fluids used in ceramics lines are essentially water-based, and this led early innovators to experiment with aqueous inks way before the head technology was ready.

In their early inkjet ink patent (US6402823), Ferro describes how it is useful to ensure the ink carriers were not miscible with water. They point out this reduces the migration of the ink when glazed. In that patent they also use soluble colorants to avoid settlement.

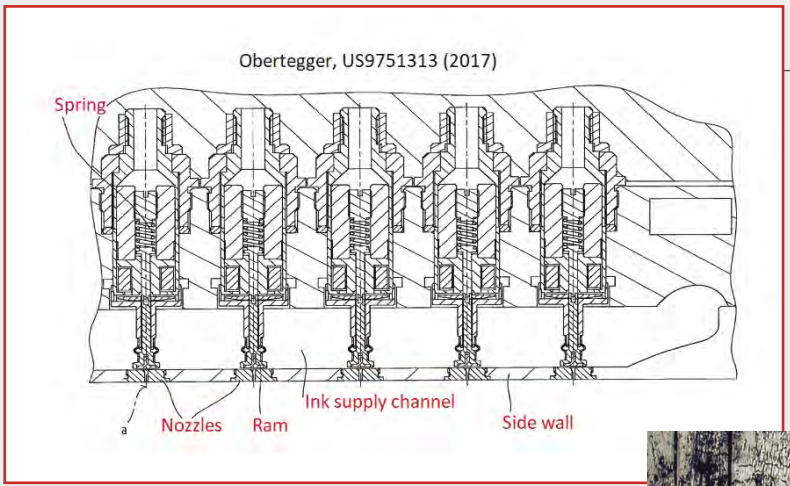
Quite quickly the market was driven by increasing cost competition toward solid pigments and lower cost carrier materials, the latter based largely on the price competition. Because the glazes contained water, additives were often required to prevent repulsion between the oil and water. It was therefore logical to look again at water as the carrier, which became a hot topic in 2013. This gave suppliers like Dimatix, a competitive advantage with their Starfire "SG1024..A" heads for Aq/UV/Solvent, complementing the "SG1024..C" for non-polar oil inks.

Whilst the traditional inkjet market drives to an ever smaller nozzle, ceramics have pushed the other way, demanding larger drop sizes driven by the desire to print effects. Tiles with mat, gloss and satin detail could be produced by adding extra heads into the printer layout. Such finishes allow for some convincing reproductions of wood grain, for example. This means the designer can mimic the look and feel of wood without the maintenance, especially when combined with underfloor heating. The challenges of such materials have again pushed print head development, with Dimatix now producing a higher flow (HF) variant of their Starfire head that is used in printers from System SpA.

Ceramics as Additive Manufacturing

Despite the piezo head advancements to provide 100-200pL at 360dpi, there is still a desire to increase the volume even further with the aim of achieving complete digital production line involving deposition of glazes to allow for structures prints. Therefore, the machine manufacturers turned initially toward valve-jet type designs that are quite common in large

Dr Mark Bale is a published author of academic papers, patents and online content on topics ranging from microfabrication, OELD devices and inkjet printing. He is the founder of DoDxAct Ltd, an inkjet technology consultancy.



character coding and certain textiles applications.

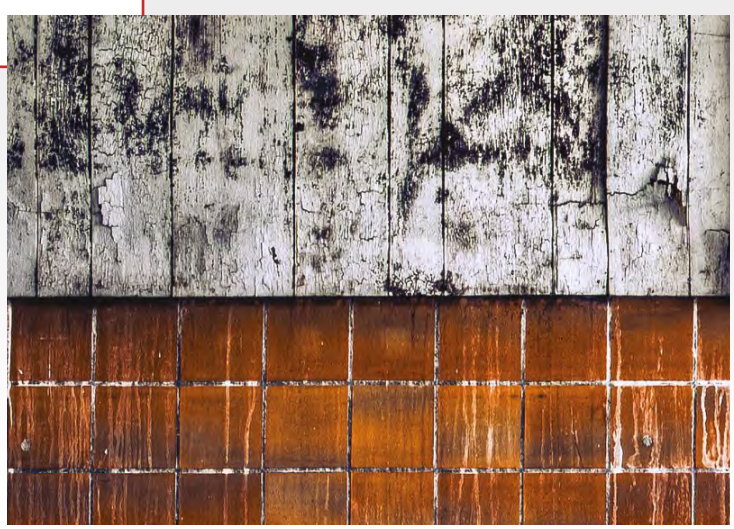
In valve-jet, the ink is generally pressurized behind an actuated valve seal which opens to let some of the fluid out. Back in 2014, Sacmi and Colorrobia both show the capability at the Tecnargilla using the prototype Xaar 001 head. Since then, Durst has commercialized their RockJet, and other OEMs, like Kerajet, have also made their own solutions. Although generally lower in nozzle density, these large nozzle technologies more than make up for this with volume to achieve glaze coverages ~ kg per m2.

Suppliers are not making the printing line digital just for the sake of it. The new technology allows new designs to be taken one step further in terms of deposition. Of different materials with endless design options for combining topography, color and effects, including sticking powders or "grits" by the use of inkjet deposited glues. Production lines are becoming fully digital.

All About Design

Older ceramic surfaces and chipped items can be re-created with near-infinite variation in texture and color to create interior designs mimicking real dereliction.

Of course, the ceramic market has also adopted standard wide-format printer and inks (like UV cured) in some niche applications. Mohawk tiles, for example, print a sandwich of ink and a primer/overcoat to decorate the edges of already-fired tile, whilst Italian finishing experts, Cefla, have decorating lines for ceramics using UV inks post firing.



Mimicking nature also requires a tactile appeal. 3D scanning of real surfaces has taken the décor industry to a new level of design. Re-creating such materials through print and image slicing has expanded the building and flooring industry's decorative surfaces. Jetting various layers and patterns from the 3D slicing offer decorative layering, which builds into natural topical surface effects creating a realistic look and feel without infringing on nature itself. ●

TRANSFORMATIONS; THE KEYS TO SUCCESS

Alon Bar-Shany discusses the transformation to digital printing.

By David Zwang

Graphic arts, printing and packaging have been going through a digital transformation since the late 1980s. We first saw the shift in design and prepress, then to commercial print and of late, packaging and industrial print and production.

Alon Bar-Shany has been on the front line of this transformation for over 25 years at HP, rising to general manager of HP Indigo, one of the leaders in the transformation to digital printing. Since leaving HP, he has continued his journey in industry transformations, most recently as the Chairman of Highcon, Executive Chairman of Redefine Meat Ltd. and Chairman and CEO of Twine Solutions.

Alon Bar-Shany

While we can see the similarities of digital printing and digital finishing transformation, what does the production of plant-based meat, or the treatment of thread and yarn have in common with digital printing?

Recently, I sat down with Alon Bar-Shany to discuss the dynamics of industry transformation and what has driven him and kept him going down this path.

David Zwang: *So, if you're leading a company that is developing and manufacturing a new technology and has the vision, I would guess that it's not just about technology, it's also very much about people. How, do you get people to begin to appreciate that the need for transformation is important and to take that leap?*

Alon Bar-Shany: I think today when I look back, first of all, being out of Indigo for a year and a half, you have a little bit of a different perspective. I've been doing things in other similar industries with Highcon, but also in the fashion world with Twine Solutions, and in food with Redefine Meat, in addition to some other things I'm doing. So in the end, I agree a hundred percent. It's way beyond the technology. It's about people, the people you bring into the company, their values and how they work together. But also it's about being extremely close to your customers. And one of the values that I learned from my time at Indigo is launch fast, talk to your customers and then constantly approve. Don't go to the next thing, and don't launch too broadly so that you create a total chaos, but most importantly work with your customers.

I have to say one of the most fun parts of being at Indigo and in the printing industry is that to large extent, we worked with entrepreneurs and with startups that were saying, "I'm going to transform my company from analog

to digital, and I'm going to partner with Indigo." The people we worked with were content experts. They love what they're doing, and they actually drove us, and we helped them.

From there we created advisory boards and personal relationships with schools, other affiliations and through trade shows. We had this joint mission of changing the industry in line with the customer needs, and the needs of the environment. So it's the right people who sort of enjoy this innovation and who enjoy, in this case, working very intimately with very emotional and demanding customers. We loved that. I love that. That's what I'm doing today with other businesses and industries. Some people don't enjoy that, and they feel they're not good at that, but they're very good at other things, and ultimately you need both skills to make a transition.

DZ: *How do you change behavior? It's really not just about technology. It's almost about creating a movement. It seems that's kind of what you did and that's how and when everybody begins to feed off each other and create that momentum, and even get people to get over the reluctance to make the leap.*

ABS: Yes, including the jump from saying, "I'll buy your machine, but promise you're not going to sell it to anybody else in the Chicago area," to saying, "I actually want five people in the area, because we'll still be a tiny part of the industry." But when there are five people, we can educate the brands, we can work on generation of demand. We can do open houses, etc.

Eventually every business becomes commoditized. And then the next wave of innovation comes. But working together as a community and sharing was one of my "aha" moments in the United States initially and then globally. It was also fun because in the end we develop relationships where we can get into philosophical discussions. Like the value of virtual events vs. trade shows. By the way, personally, I hate that. Life is short and you want to be with people and you want to work and negotiate hard. Then you want to go and have a good dinner, a drink, tour, dance and discuss other things in life beyond printing. And then the next day go back to work and continue this movement as you call it. I think it's very hard to transform without creating this community and this sharing.

DZ: *Does this process work for other industries?*

ABS: Highcon has gone through a pretty significant transformation over the last two years since Shlomo Nimrodi became the CEO. There was a redefinition of the purpose and the focus primarily around packaging, folding carton and corrugated, but the focus is packaging. What I did learn from Indigo is an understanding that it needs to be an end-to-end solution, or you get stuck with an analog process for finishing. It doesn't matter if it's folding cartons, corrugated, labels or making photo books. The bottom line is that the bottleneck very quickly moves to the finishing.

Today, all of the megatrends are working in the favor of a need for transformation of many industries, even in the production of plant-based meat in the case of Redefine Meat. As the chairman of Redefine Meat, which is based in Israel, but expanding quickly to Europe and beyond, the intent is to develop, market, produce and sell a product,

Continued on page 62

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David Zwang talks to Clarence Penge, EVP Product Management at Heidelberg US.

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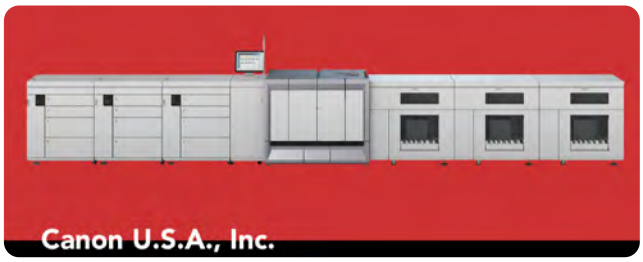


Duplexed Monochrome Printing with the Canon varioPRINT 6000 TITAN

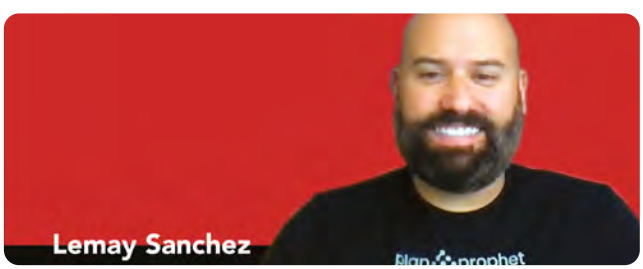
In this video sponsored by Canon USA, learn about the Canon varioPRINT 6000 TITAN.

Find video here: www.printingnews.com/21158073

David Zwang on the Latest Developments in Inkjet

WhatTheyThink contributor and industry expert David Zwang talks about some of the latest, post-COVID developments in production inkjet and industrial printing.

Find video here: www.printingnews.com/21158175



PlanProphet's Lemay Sanchez on Print Business Optimization

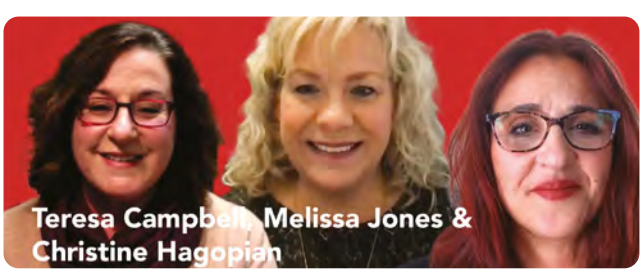
Pat McGrew and Ryan McAbee talk to Lemay Sanchez, managing director of PlanProphet.

Find video here: www.printingnews.com/21158128

Graphic Communications Leadership Institute: Preparing Future Industry Leaders

Industry veterans Joe Truncale and Mike Philie have implemented a new program. Hear what they have to say.

Find video here: www.printingnews.com/21158215



Affiliates Update: New Leadership, New Energy

For the first time in the history of the Affiliates, the top three leadership positions are held by women. Meet Teresa Campbell, Melissa Jones, and Christine Hagopian.

Find video here: www.printingnews.com/21158502

The Target Report Interview: Ed Cook of ECI Screenprint (Part 2)

Rod Bristol of Graphic Arts Advisors talks with Ed Cook, President of ECI Screenprint, a "boutique" industrial printer.

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Adding Textile Printing to the Mix? What You Need to Know about Color Management

Print & Packaging Portfolio Manager for X-Rite/Pantone Ray Cheydleur shares his thoughts.

Find video here: www.printingnews.com/21158428

Hudson Printing Installs 2nd Perfecting Landa Press in the U.S.

Paul Hudson, CEO of Hudson Printing, chats about his recent acquisition of a Landa S10P B1 digital press.

Find video here: www.printingnews.com/21158563

SCREEN USA's Ken Ingram on Commercial Printers Moving to High-Speed Inkjet

Ken Ingram, President of SCREEN USA, talks about the latest market trends as well as new products.

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Warren Werbitt Goes Printer to Printer with GAA's John Braceland

Warren talks to John Braceland, one of the founders of the Graphic Arts Alliance (GAA), founded in 2002.

Find video here: www.printingnews.com/21158595

Jim Raffel Geeks Out with X-Rite's Ray Cheydleur

Resident Print Geek Jim Raffel talks to Ray Cheydleur of X-Rite about what has been happening in color standards and instrumentation in 2021 and what to look for in 2022.

Find video here: www.printingnews.com/21158646

Selling Inkjet to Clients

Marc Olin, eProductivity Software Executive Chairman, provides some background and a look what customers can expect from the company.

Find video here: www.printingnews.com/21158802

Why Limited Color Palettes are Important in Textile Printing

Mike Scrutton, Director, Print Technology and Strategy at Adobe, discusses how color management is different.

Find video here: www.printingnews.com/21158699

Coloreel Explained

Mattias Nordin, SVP of Business Development for Coloreel, explains how their on-demand thread coloring technology works.

Find video here: www.printingnews.com/21158731

Ironmark Makes Its Mark

Frank interviews president Jeff Ostenso, of Ironmark, who has built his 150-employee company into a Top 500 printer through growth, mergers, and innovative thinking.

Find video here: www.printingnews.com/21158818

Automated Marking Inc. Launches "CAMI JET", a New Line of Inline Thermal Inkjet Printers

Automated Marking Inc. has launched a new line of thermal inkjet printers called "CAMI JET", CAMI is an acronym for Coding Automation Marking Intelligence.

The CAMI JET line consists of three models, the Athena, Atlas, and the IP65 rated Poseidon.

The Athena and Atlas thermal inkjet (TIJ) systems are both single head, compact and practical, perfect for manufacturing environments. Each has a print height up to 1/2" (12.7mm). The Athena can print up to two lines of code, while the Atlas model can print multiple lines, barcodes, images and is made out of anodized aluminum.

The Poseidon is IP65 rated, providing complete protection against water, moisture and dust. It is capable of printing up to 1/2" print height and can print barcodes and images. The rugged construction consists of stainless steel.

No maintenance contracts are necessary for these printers as they have no moving parts.

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INX International Debuts new XJL UV Curable Inkjet Inks

INX International Ink Co. has introduced a new addition to the TRIANGLE brand of alternative inks. XJL UV Curable pigmented inks are a cost efficient, fast curing and low odor premium formulation that delivers high performance using Xeikon Jetrion 4830, 4900 and 4950LX series digital label printers. A special limited offer for scheduled conversions is in effect until April 1.

Test results have shown XJL produces remarkable consistency and unparalleled quality, which will help printers wanting to achieve GRACoL standards and G7 targets. It offers flexibility on a variety of commonly used label materials such as paper, durable and VIP films and BOPP. Available in Cyan, Magenta, Yellow, Black and White, XJL is supported by INX Digital's Ink Train warranty for TRIANGLE brand inks.

Free onsite ink installation with two custom ICC color profiles is available to printers who act by April 1.

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New WhatTheyThink White Paper Clarifies Environmental Certifications for Wall Décor Applications

One of the hottest growth markets for digitally printed display graphics has been wallcoverings and décor, especially "environmental graphics" for offices, healthcare facilities, schools, etc. Print service providers looking to tap into this market must understand environmental issues—not just overall sustainability but health and safety requirements for materials used in décor. To that end, various classification and certification programs have emerged to confirm not only the "greenness" of the assorted components of print production processes but also their compliance with health and safety requirements and regulations.

A new white paper, "On Your (Green) Guard: Understanding Environmental Certifications for Wall Décor Applications," sponsored by Canon Solutions America, sorts out the details of the various programs that have certified the consumables used for wallcoverings and décor, with an emphasis on the materials used by the Canon Colorado Printer Series, a rollfed wide-format family that has proven ideal for wallcovering and décor printing.

In this white paper, you'll learn:

- What are the specific consumables and other materials used for wallcoverings and décor?
- What are the important certifying organizations and programs for wallcoverings and décor materials?
- What health and safety issues are involved in wallcoverings and décor, and what do print service providers need to know about them? How does this knowledge give you a competitive edge in tapping into these markets?
- How is the Canon Colorado Printer Series well-suited for décor applications, and with what certifications do its consumables comply?

Download the white paper: https://bit.ly/3tnOOCQ

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Konica Minolta to Retire Muratec Brand

Konica Minolta Business Solutions, U.S.A, Inc.announced it will transition the Muratec America brand this year. Muratec, a leading supplier of multifunction solutions and a provider of managed document and cloud services in North America, was acquired by Konica Minolta in 2017. At that time, the company contracted for use of the Muratec brand for five years, and will therefore retire the brand this coming year.

The move will also serve to take advantage of operational efficiencies from streamlining Konica Minolta's product lines. While the Muratec brand will be officially discontinued, all remaining Muratec branded inventories will be sold until depleted.

Konica Minolta is committed to continuing to deliver the high-quality sales and maintenance business Muratec has provided since its acquisition and will fully support its dealers and their customers during the transition. In the coming days, Konica Minolta will be contacting all Muratec dealers regarding next steps based on location, market needs and dealer representation.

www.printingnews.com/21158721

EFI Prioritizing Technology Investments in Inkjet Technologies; Sells Productivity Software Business

Electronics For Imaging, Inc. is announcing that it will be prioritizing technology investments to accelerate growth in its fast-growing industrial EFI Inkjet business to continue to lead the industry in the analog-to-digital transition, as well as in its market-leading Fiery business. As part of this focused strategy, EFI has completed a sale of its eProductivity Software packaging and print productivity software business to an affiliate of Symphony Technology Group. EFI and EPS will continue to collaborate with their joint customers and partners to ensure mutual success.

This realignment allows EFI to accelerate investment into its Inkjet and Fiery business units to capitalize on the growth opportunities available in existing segments the company serves, as well as drive expansion into markets that are beginning the transformation toward digital.

EFI Inkjet will continue to drive its leadership in high-volume, shuttle and single-pass inkjet technology, which the company has currently implemented in award-winning, high-performance products for the Packaging & Corrugated, Display Graphics, Textile, and Building Materials/Decor verticals.

Following the realignment, EFI is making investments in R&D to strengthen its position in core markets while entering new categories – including the development of technologies to address new applications for the textile space and for packaging.

www.printingnews.com/21158747

Nano Dimension Acquires Global Inkjet Systems; Implements Its Vision for Specialized 3D Printing and Additive Manufacturing

Nano Dimension Ltd., announced the acquisition of Global Inkjet Systems Ltd. (GIS).

GIS has more than 130 customers around the world with a focus on high-value, precision-oriented applications such as specialized direct-to-container packaging, printed electronics functional fluids, and 3D printing, which can all be controlled by the proprietary software system - Atlas.

GIS is a growing company with revenue for the 12 months ended March 31, 2021, of approximately $10 million and a gross margin of 51%. Nano Dimension paid GIS shareholders $18.1 million in cash. In addition, it will pay between $1.3 million to $10.7 million within the next 27 months, if GIS achieves certain financial performance over this period.

The foundation of Nano Dimension's vision is to provide advanced, digital production technologies for Additive Manufacturing (AM) and 3D printed electronics that meet the speed and efficiency standards of Industry 4.0 fabrication demands. The combined expertise of both Nano Dimension and GIS will enable faster product development, including the technology that is at the center of next-generation systems.

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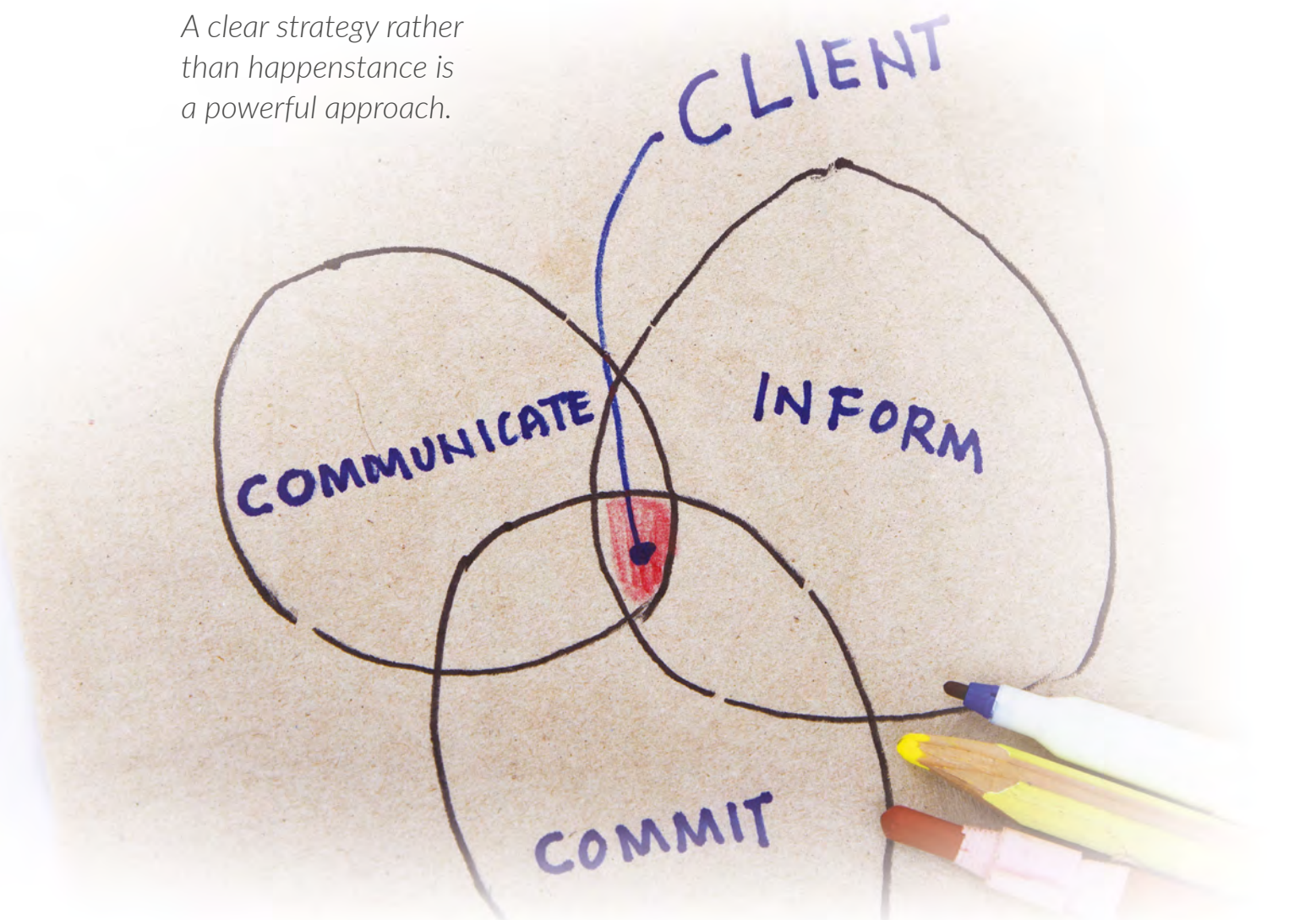
CLIENT LOYALTY BY DESIGN

A clear strategy rather than happenstance is a powerful approach.



We all know the statistics. It takes an exponential amount of effort to secure a new client versus retaining the clients you have. Also, your existing clients tend to do more with you over time. According to the latest Gartner research:

- Seventy-nine percent of key customers who clearly understood the benefits available to them from the

relationship provided their supplier with benefits in return – including increased access to senior executives and more visibility into business strategy.

- Sixty-nine percent of key customers who said they collaborated with their supplier to determine shared goals of the relationship found the supplier more effective in aligning its strategy with their objectives.

A clear strategy for client loyalty by design rather than happenstance is a powerful approach. However, market conditions and prospects have changed dramatically over the past year or so. Prospects are:

- Distracted
- Laser focused on their priorities
- Looking for solutions with immediate impact
- Expecting value during every interaction as well as clear outcomes and results from your products or services
- Resistant to any type of risk

These new realities make it harder, but more important than ever, to have a long-term and deliberate approach to retain your best clients.

Thought Starters: Client Loyalty by Design

Here are a few considerations as you build your client loyalty strategy. The ultimate measure of success is client retention, client expansion and return client rate.

- Your client loyalty plan should be multiyear in scope. Plan beyond the current year. Discuss long-term objectives and key results with clients. Align with their priorities. Collaborate!
- Consider your high-value client checkpoints. Set up systems for valuable touch points with your executive sponsor(s) and key stakeholders. For example, schedule twice-annual executive review and planning sessions. Add a dash of spontaneity to important interactions to keep meetings fresh.
- Capture program results and outcomes and produce reviews and reports. Communicate on a proactive and regular basis. Don't assume your client understands the full impact of your services.
- Address new realities. Your day-to-day approach should embody recent developments in your clients' markets. Work hard to make things easy for your clients. Put yourself in their shoes to determine how you can add value to every interaction. For example, share timely resources and new information or share fresh ideas.
- Stay top of mind between projects. Develop several ways to offer value regularly, such as monthly newsletters, webinars or weekly tips. Surprise clients from time to time with something extra and unexpected.

Ring the Bell!

"Ringing the Bell" with your existing clients is tremendously gratifying. Add an element of celebration with your clients as you launch new endeavors or complete big projects. ●

Lisa Magnuson is an author and founder of Top Line Sales in 2005. It has a proven track record of helping companies overcome the barriers to winning TOP Line Accounts. Learn more at www.toplinesales.com.

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THE GREAT WORKFORCE

Quit thinking like a printer.

By Lou Caron

While we seem to be focused on Omicron infections and paper shortages, the long-term crisis remains the shortage of workers. At PIASC, we provide a service to our members that works to connect candidates with open jobs at our member companies. In the last six months, this service team has been swamped.

As reported across the country for the last several years, there is a growing shortage of trade workers caused, in part, by the focus on STEM curriculum in our high schools. Wood shop, auto and printing classes went the way of budget cuts. The focus on driving young people to four-year colleges has created a real drain on the supply of technical workers, and our industry is suffering.

The shortage was exacerbated by the pandemic, which caused companies to downsize and furlough or lay off employees. We all thought they would come back as soon as the pandemic passed. The reality is that many had time to reflect on what they were doing and ultimately concluded, in my opinion, "Life is too short for me to be unhappy or unsatisfied at work." In large numbers, older workers have opted for retirement. Other workers have decided to change careers. The result is a large number of unfilled open positions.

So, what is the answer? I suggest that we must first accept the fact that the problem is not going to be resolved quickly. It may not be solved in some of our work lifetimes. I also believe that throwing money into wages is not going to cure the problem. It will come back and haunt companies, because higher wages are not going to address the need for fulfillment. It has always

EXODUS

been the belief that people do not work merely for money. Those who do, lack engagement and will likely cost more due to lack of attention to quality while they focus more on clocking in and out.

The first focus must be on retention of the existing workforce. It is likely foreign to the Baby Boomers, but we need to get in touch with what our workers' need to feel engaged and fulfilled. How can we make their jobs better and more productive from their perspective? This could be as simple as the management team being more accessible and asking open-ended questions and listening (e.g., it takes two to communicate). It could be as complex as giving up some control and engaging workers, the experts in certain operations, to make and/or to participate in decisions or, at least, to make recommendations that are pursued.

That leaves attracting new people to the industry. I am bewildered as to how we expect people to find our industry when we do so little to promote it. In my opinion, much of what we communicate is focused within the graphic communication industry, including print buyers. Unfortunately, this is not the only audience we need to reach.

We must devote ourselves to telling our story to the general public. We need to promote our significance and technologies to the younger generation and their parents, who are ultimate consumers of print. Doesn't it seem strange that such an important industry that touches almost every waking moment had to fight a fierce battle to be considered part of the critical infrastructure during the pandemic? In California, we only solved this problem when the politicos realized that ballots by mail required the printing industry.

Google "Imagine: A World Without Print" and watch a couple of the videos. We need to get this type of messaging out to the public, coupled with showcasing the great things produced by the industry, along with insights into our incredible machinery and new technologies. We need to create excitement. When we can do this, we not only will create interest in young people but we will also give our employees a sense of pride and acclaim, which will further engagement and retention.

As I was told by an industry veteran, we need to quit thinking like printers. ●

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Lou Caron is a CPA with extensive business experience in both the insurance and printing industry, and has served as the chief financial officer of companies in both industries. He is the President/CEO of Printing Industries Association, Inc. of Southern California.

How to gain a competitive advantage with the right mindset.

By Wayne Lynn

TALENT AND CULTURE

Talent and culture have not been given the deep attention that strategy and capital have historically had. The printing industry is no exception. However, competition grows stiffer with the passage of time. Rapidly changing technology has created a transparent world where any sort of advantage rapidly deteriorates.

Your competitors are smart. Most of them have access to the same technology, capital and strategic ideas you do. The question is: How do you create separation in the market so that you attract more of the available profit pool the industry offers? The answer has increasingly become people. As in, people who have a talent edge on their competitors and when effectively led, create a culture where growth, performance and innovation can be generated. It seems these are the companies that eventually emerge as the winners.

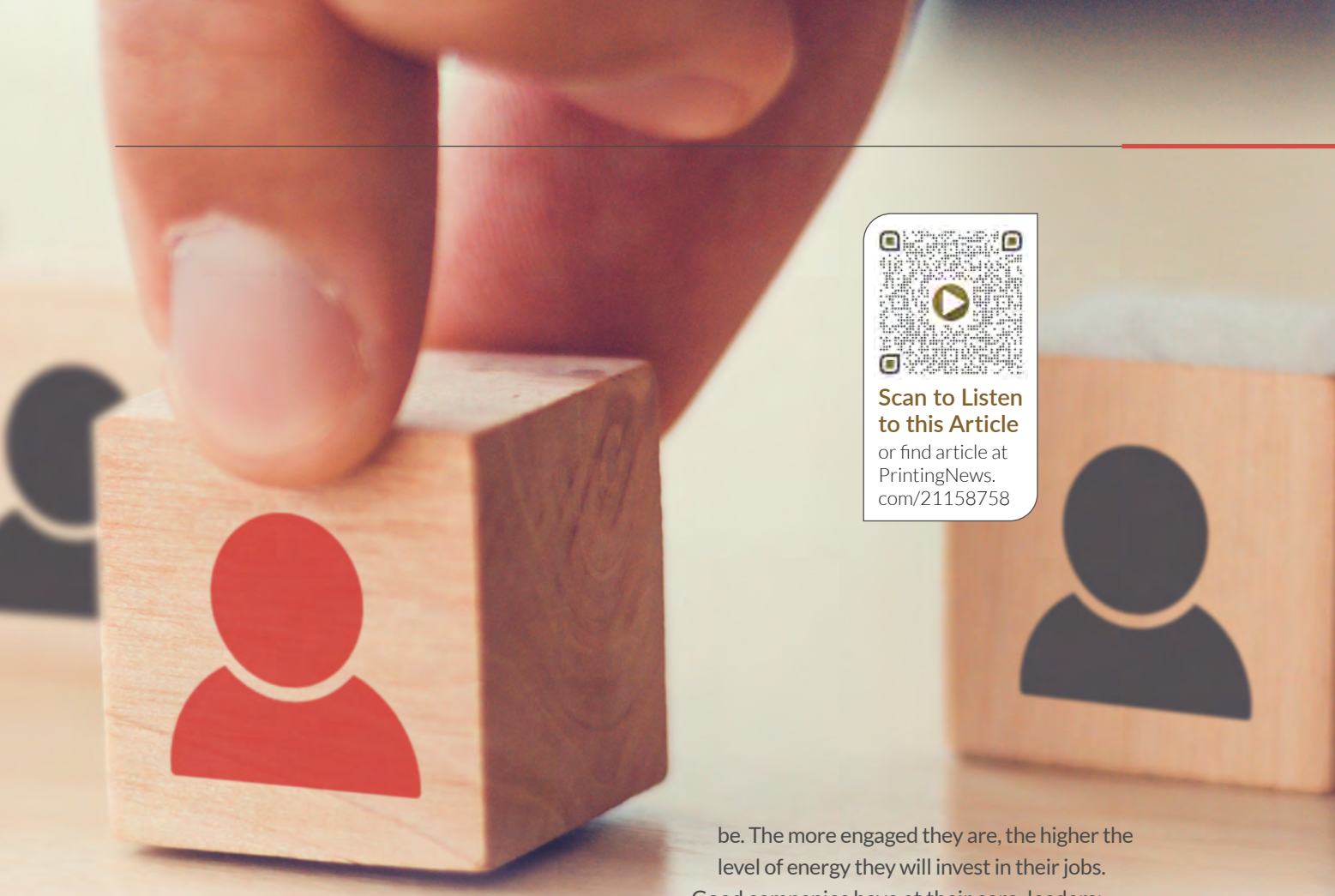
Your competition likely doesn't know if their talent/culture provides an advantage in the market. This is where, if you're smart and progressive, you can begin to separate your company from your competition.

In its simplest terms, people are considered talented if they do something well. For a business to have a lot of talent it is usually based on having a lot of people who do their jobs well. Typically, talented people are assumed to have some combination of factors that enable superior performance. These factors include knowledge, experience, job-specific skills and behavioral tendencies. These combined factors make it highly probable they will enjoy their jobs, consistently do the job well and be resilient and able to deal effectively with change.

Culture, simply put, is a predisposition for a team or an organization to behave in a certain way.

Every company has well-known common internal behaviors that are shaped by the leaders. In addition, there are underlying mindsets that govern what is acceptable or not. These mindsets are often called the "organization's values."

The alignment of company behavioral norms and values with individual employee values creates or destroys energy. A high level of alignment turns employee discretionary energy into engagement. A high level of engagement breeds positive and innovative cultures. Research indicates there is a strong correlation between high engagement and strong cultures. A useful proxy for culture is assessed by measuring the average level of energy and engagement



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your employees bring to their jobs every day.

How do you determine if your talent and culture provide a source of competitive advantage? It's a process requiring a few steps. First, have everyone take an on-line survey to generate the data needed. Then do the following:

- Measure the behavioral suitability of your leaders (executives, managers and supervisors), key contributors and sales people. These are the jobs/roles where better talent can make truly outsized contributions to the organization's performance.
- Run three reports for each one that shows the percent match of their behavioral factors to those of high-performers. The closer the match, the higher the level of talent they possess for their current jobs.
- For the majority of your employees, run one report that tells how well they are getting their expectations met for a number of higher level psychological needs. The better these needs are being met, the more engaged in their jobs they tend to be. The more engaged they are, the higher the level of energy they will invest in their jobs.

Good companies have at their core, leaders:

- Whose behavioral attributes match well with the attributes of successful leaders;
- Who work to engage and energize their employees in a way that meets their higher level needs and creates superior performance;
- Who develop the people who are not good behavioral fits for their jobs into better performers;
- Or who move those people into jobs where they are more suitable fits and replace them with better fitting people for the job in question.

Over time, the overall talent level and collective performance levels will improve significantly by working this process individual by individual.

The synergy of these factors creates dynamic, innovative and forward-looking organizations that stand apart in their markets and outperform their competition. ●

Wayne Lynn brings focus and discipline to the task of creating and sustaining success in today's chaotic environment. He has guided organizations through a number of diverse market sectors including magazines, catalogs, inserts, direct mail, and general commercial printing. He can be reached at wlynn8697@gmail.com.

ARMS OF LOVE

New automation options for wide format

By Richard Romano

It took some time, but automation is gradually creeping into wide-format printing, especially on the flatbed side. Many wide-format printers pride themselves on producing bespoke projects and specialty "one of a kind" applications. And, after all, haven't us industry pundits and analysts—and vendors—been pushing this kind of approach?

However, as competition increases—it's the rare print shop these days that doesn't offer some kind of wide-format printing—and as pricing gets tougher, margins get smaller, and the

labor situation gets tighter, wide-format shops are seeing the need to automate at least some parts of the business.

On the Soft Side

One key to automation in commercial printing is a templated approach to products like business cards, postcards and other items that have been easily "commoditized" so that users can go to an online storefront, pick a template, enter their custom content, OK a proof, and click "send." Likewise, certain wide-format products like banners, rollups and posters, have reached a similar level of commoditization. We saw a lot of wide-format shops adopt this kind of approach for COVID materials during the pandemic. A storefront containing standard items then frees up design and production staff to focus on those bespoke applications that are often the pride and joy—and bread and butter—of the business.

Estimating is another area that is primed for automation, or at least an automated approach, rather than relying on the equivalent of "Karen in the back" to do all estimating by hand. Time was, wide-format estimating was an arcane process that required an almost Delphic oracle-like approach to figuring out how to price bespoke applications. But most if not all of today's estimating software will handle wide-format estimating, be it commoditized, bespoke or somewhere in between.

The Inca Onset X3 HS features a Hostert Loader that collects, feeds, and aligns the substrate, which is then collected by the robot.
(Image courtesy Fujifilm)

The Kongsberg cutting table (formerly developed by Esko before Kongsberg was spun out as a separate company) added a robotic arm for loading and unloading several years ago.

There are other specialty areas of automation that have been available for a while. Some common wide-format-specific tasks include imposition, which unlike the use of the term in commercial or book printing, means something more along the lines of "job planning." Think about retail display graphics for a chain store, where the same graphics and branding elements may vary slightly depending on the specific store dimensions. Imposition software can determine the order in which these retail graphics need to be printed based on which need to be shipped first.

Nesting is the process of orienting all the images to be printed such that you can fit as many as possible on a single board, or, in rollfed workflows, minimizing the amount of substrate that is used. Nesting optimization has traditionally been done manually, but advanced shape nesting—which any self-respecting DFE for wide-format printing will now offer—is an automated approach to what had been a laborious, manual process.

On the Hard Side

Wide-format printing—especially on the flatbed side—is starting to see greater and greater use of new kinds of hardware automation—including robots.

One unique approach was the subject of a white paper I wrote last year about Canon's FLOW technology used in its Arizona 2300 Series of flatbed printers. You can download the white paper at **https://bit.ly/3HSyxto**. In a nutshell, it involves a zoneless vacuum system that applies suction only where it is required, while three-sided pneumatic registration pins allow edge-to-edge printing as well as the ability to align the substrate to either the left or right edge—or both edges—of the vacuum table. This means that media can be secured to the printer's bed without the need for masking or taping. This leads to faster set-up times and quicker job changeover, as each board can be loaded in under a minute.

Naturally, your mileage will vary, but in one side-by-side face-off between the Arizona 2300 and "Brand X" featuring traditional taping-and-masking board loading, the job output on the Arizona was loaded and printed in 4:32 compared to the other machine that ultimately finished printing at 8:32. That's time for almost a whole other job.

But perhaps the sexiest aspect of hardware automation is robotics, which are gradually coming to wide-format printing. Some high-end systems like the Inca Onset X series have long featured robotic arms for automated board loading and unloading. Units from Durst and Canon have also allowed integration of robotic systems. And on the finishing side, Zünd and Kongsberg cutting tables have featured robotic arms for loading and unloading.

In an EFI press event in September 2021, support for robotic integration on the Vutek XT and Nozomi systems was highlighted, and, likewise, in a Mimaki virtual press conference in October 2020, made much of the ability to integrate select Mimaki flatbed printers with third-party robotics.

"When people use the term 'robotics' today, they are still thinking about the classic arm," said Sean

Roberts, product manager at EFI. "There's a 'spider-based robotic' that allows you to have different types of pickup capability. Then there are what they call 'cobots,' which are a little bit smaller scale."

Adding robotics is ultimately a communication issue.

"You enable through an SDK [software developer kit] the communication technology," Roberts said, "and then an integration company will take that software code and plug the pieces together."

That is, getting printer and robot to talk to each other. Basically, these are referred to as "hooks" which allow third-party robotics systems to be integrated so that the arm knows when the printer is ready to receive a blank sheet/board, and/or when an arm knows a board is ready to be offloaded.

Especially on flatbed printers, as print speeds increase, human-based loading and offloading can be bottlenecks, and fast-moving arms and other robotics can move much faster and accurately than humans, which at the high-productivity end of the market, is highly desired.

In 2016, Fujifilm initially launched the robotic handling system on the Inca Onset.

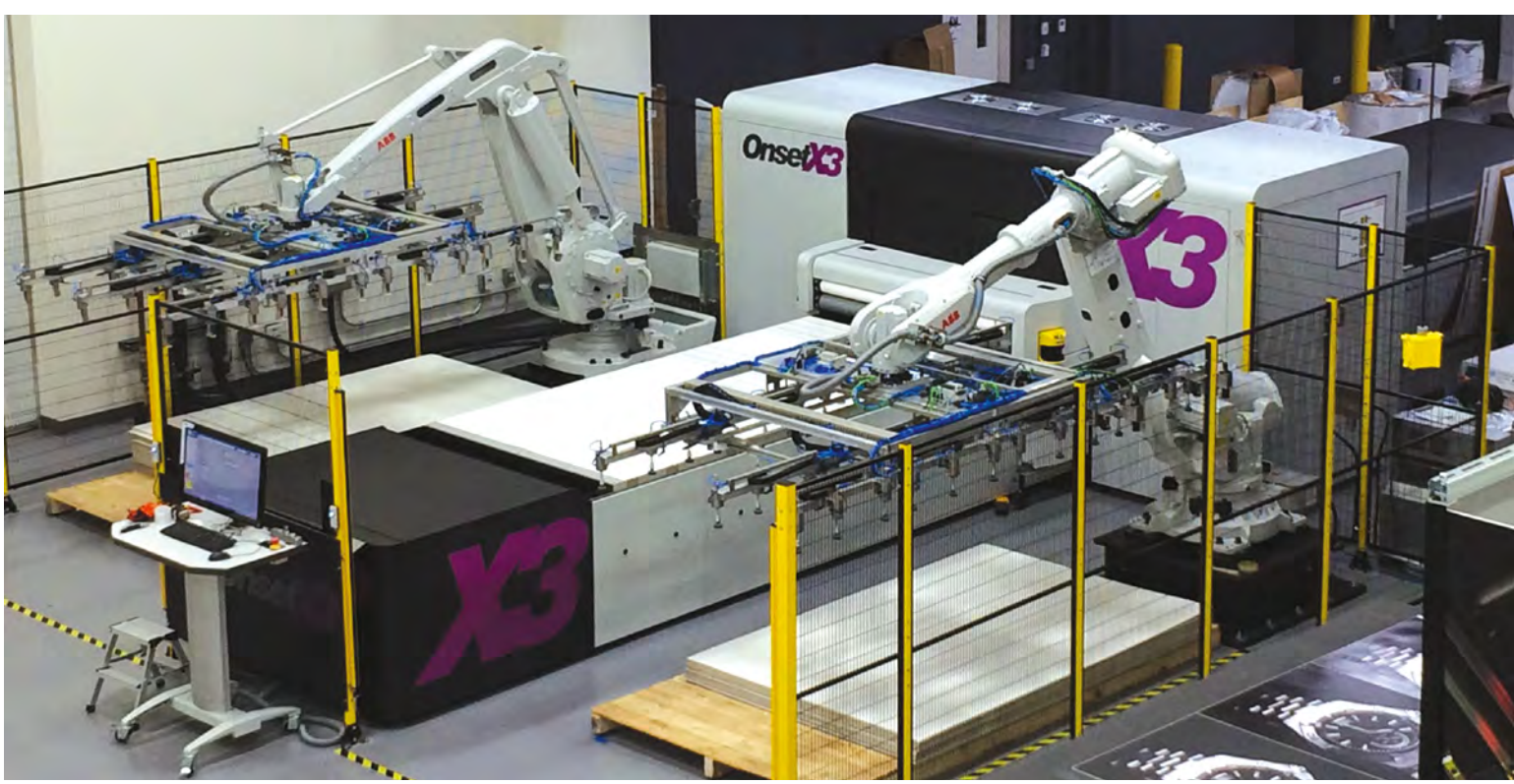
"We had introduced the Onset X series [in 2016], we had increases in speed, and we knew where the future was headed from a throughput demand standpoint and where the Onset sits in the marketplace," said Becky McConnell, segment marketing manager, Wide Format Inkjet Fujifilm North America. "We haven't sold any non-robotic automation systems since it was introduced. So the demand certainly was there." (UK-based Inca Digital's Onset series is sold globally by Fujifilm.)

Automatic peripherals can be used for loading or offloading, or both, although, Roberts said offloading is a bit easier for robotics to handle.

"Robotics are really good at doing the same thing with a high degree of repeatability," he said. "They typically don't handle a lot of variability. On the delivery side of the press, when a sheet comes out, as long as that sheet is always in the same location, the robotic arm is really good about getting that signal to know the sheet is ready, picking it up, and putting it over on a pallet, putting it in the same place every time."

The infeed side can be a little trickier.

"An operator brings in a pallet of material with



Two arms good: Inca Onset with dual automation system.
(Image courtesy Fujifilm)

a forklift or something, but is it always going be exactly in the same spot?" he said. "So the infeed side typically does require some level of 'intelligence,' or camera-based systems that can register where the unprinted sheet is, pick it up, and transport it onto the printer."

Another issue—albeit not an insoluble one—that robotics can run into is mixed substrates. A lot of wide-format work isn't long-run jobs on the same material. Sometimes a pallet of substrate for loading can contain a variety of substrates with different thicknesses or other properties that a conformity-loving may not be able to handle effectively. This can impact job changeover time, another big part of the productivity equation.

"That robotic system enables a media database," said Roberts. "Within which you can spec the weight per sheet and sheet size. Based on that arm's hardware, it's going to automatically adjust. The intent is it becomes push-button simple for the operator. It says, 'Here's the media I just loaded.' Hit play on that run sequence, and the system will then wait for the printer to trigger its print signal and the number of copy counts."

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Inca Digital in developing the Onset X HS a few years ago, sought to improve not just speed, but also job changeover time. And improving the robotics was a big part of that.

"We saw that there was a lot of efficiency that could be gained if we could automate some features that the operator was manually doing," said McConnell.

One of those is adjusting the ends of the robotic hands, or what are called "end effectors."

"The effectors have suction cups going across them, and the bars that hold the suction cups are adjusted for the sheet size. With the HS model, that feature is automated."

Other features, such as vacuum table adjustments, the type of vacuum hold-down needed, and a shutter system that covers up the unused portion of the bed can now all be automated.

"What was previously done manually now takes 30 seconds for it to be adjusted automatically based on the job," McConnell said.

Inca Digital also developed software called Inca Connect.

"That plays a big role in how jobs can be automated as well."

According to McConnell, robotics are about 20–30% of the cost of the printer, and adding robotic systems to other printing systems can be an expensive proposition. Then there are other considerations which, if you have ever seen a robotic arm swinging around at top speed, make perfect sense: the need for safety fencing.

Cobots have long had bump-stop sensors on them, meaning if someone or something bumps them, they stop immediately, although this is slowly coming to robotic arm systems. Still, you want to maintain a discrete distance from a fast-moving arm.

Ultimately, the choice of robotic feeding is going to be a function of a shop's production volume. After all, you wouldn't put robotics on a comparatively low- or mid-volume flatbed, right? Or would you?

"Even a device within our portfolio that doesn't have that same level of high-speed throughput, does allow you the ability, especially with some of our mobile app tools, to really remote print and have the robot do the feeding while you can stay connected to the printer," said Roberts. "If I were a business owner, I could see maybe if I put a skid in over there, I know that printer's going to continue to run for the next shift and a half."

And of course if labor continues to be scarce, print business owners may have little choice but to look to robots and cobots.

"I would imagine as this technology develops and as the robotics come down in price and the economies of scale work in their favor, we'll probably see more of that kind of automation on the lower-end, mid-range units where it's not as much of an investment as it probably is right now." ●

Richard Romano has been writing about the graphic communications industry for 20 years. He is an industry analyst and author or co-author of more than half a dozen books.

New Fome-Cor Sirius, Dispa Sirius with Colorpro Technology Introduced for Enhanced Digital Print Performance

New FOME-COR SIRIUS and DISPA SIRIUS with ColorPRO Technology – a set of paper enhancement technologies that visibly enrich inkjet print quality – have been introduced by 3A Composites USA in conjunction with HP.

FOME-COR SIRIUS and DISPA SIRIUS were developed through a multi-year collaboration between **3A Composites** and **HP** to enable printing system performance that delivers color excellence in digital printing.

FOME-COR SIRIUS and DISPA SIRIUS graphic display boards were developed to exploit the unique capabilities of the HP PageWide XL Pro printers, which are designed to print to rigid substrates up to 10mm thick and 40 inches wide. By incorporating ColorPRO Technology, these exclusive rigid substrates conform to a strict set of industry-leading specifications and utilize advanced technologies.

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Massivit Expands into the Defense Market

Massivit 3D is, for the first time, entering the defense industries market: the company, which engages in the development, manufacture and sales of 3D printers and printing materials, signed a strategic collaboration agreement with Kanfit to install its state-of-the-art Massivit 10000 printer at Kanfit's plants and for the purpose of customer beta testing.

Kanfit is an Israeli manufacturer of metal and composite products for the aviation, aerospace, medical devices and security industries.

The Massivit 10000 printer will be used for producing molds for the manufacture of composite (carbon and fiberglass) parts for industry, as it can be used to print large-scale molds and production tools. Massivit is continuing its preliminary sales of the Massivit 10000 printer, before it's official 2022 launch.

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MUTOH's New XpertJet 1641SR Pro Elevates Eco-Solvent Roll-to-Roll Output with New AccuFine Print Head

MUTOH America announces the launch of its latest Eco-Solvent roll-to-roll printer, the 64" XpertJet 1641SR Pro, featuring MUTOH's new AccuFine print head, VerteLith RIP software and i-screen technology, which combine to deliver high-quality output and high-speed printing and an increase in productivity up to 200% over the XPJ-1641SR.

The XPJ-1641SR Pro is the successor to the XpertJet 1641SR and is updated with the latest MUTOH technologies and hardware. The AccuFine print head achieves best-in-class dot placement and accuracy with increased nozzle row length for higher productivity, while i-screen technology reduces banding to create smoother print images and optimizes the capabilities of the AccuFine print head. This Eco-Solvent printer features MUTOH's new VerteLith RIP software, bundled with FlexiDESIGNER MUTOH Edition 21.

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Intec Launches Premium, Fast and Productive, Automatic Digital Die-Less Flatbed Cutter

Intec Printing Solutions Limited, released the ColorCut FB9000PRO Automatic Digital Die Cutter as its flagship flatbed cutting model.

The new FB9000PRO lands itself right at the top of Intec's ColorCut product offering and becomes the new flagship model through its impressive new features! By combining cutting, creasing, perforating and scoring in a single pass ensures that the FB9000PRO offers rapid, automated and unattended production for the creation of packaging and P.O.S, paper, synthetic projects and kiss-cut sheet label production. The system is completed with a 2,000 auto feeder/stacker, vacuum suction conveyor belt cutting table and media collection tray.

Processing jobs at speeds of up to 1,200mm/s with an SRA3 sheet cut in 15-45 seconds (depending on file complexity), the FB9000PRO can handle a variety of media types up to 1,000 micron thick including folding box board, card, paper, synthetics, soft boards, vinyl and label stocks and large sheet sizes up to 550mm x 850mm.

www.printingnews.com/21158715

IT'S ABOUT TIME

Expand your tool kit with e-commerce.

By Carrie Wood, *Alliance Franchise Brands*

As we continue to adjust and adapt to the conditions caused by the COVID-19 pandemic, one of the best tools that our Image360, Signs By Tomorrow and Signs Now Centers have available to them has proven to be our e-commerce platform.

The growing importance of e-commerce – which involves transactions that are conducted online – has been difficult to miss, especially during these turbulent times. The flexibility that e-commerce enables has been key to navigating the pandemic for both our centers and their clients.

Simply put, if you're not already integrating e-commerce into your sign and graphics business, you're leaving money on the table.

Alliance Franchise Brands' e-commerce platform allows our clients in the U.S. and Canada to customize and order materials from our centers on their own time, and per their own needs. By focusing on B2B e-commerce, we're able to help businesses as best as we possibly can – even outside of standard business hours.

We've been doing e-commerce since 2005, so we're all too familiar with the benefits that it provides. Our proprietary platform is now in its fourth generation, and provides value in automation and production workflow for both our centers and their clients.

Image360, Signs By Tomorrow and Signs Now clients are provided a customized, branded online store that they're able to populate with their most frequently-ordered items and can include design templates. They're also able to instantly see prices and quickly reorder items from their past order history.

The stores that we build on the platform are simple and easy to use on the client end, meaning anyone in the client's business can quickly understand how to order or reorder – no lengthy tutorial sessions required. Anything our franchise members or their clients can dream up can be added to the

store, so the inventory available to each client can change as quickly as their needs do.

These custom client websites are especially useful in sectors that may have multiple locations repeatedly ordering the same signage items, yet require the ability to customize certain creative elements. For example, a retail chain holding a seasonal sale can quickly order feather flags, banners and other outdoor signage for all of their locations. Details can also be changed in e-commerce templates, such as how a real estate agency can easily customize yard signs with each agent's name and phone number via their website.

By consolidating our clients' information and resources online in a way that is user-friendly, easy to navigate and easy to use, it can help save on one of the most valuable resources of all - time.

Here's a good case study from our system: One of our centers was all too familiar with the kind of time that a multi-location client can consume. With more than a dozen different office managers calling with orders for a wide variety of products, this client took a lot of time.

But after adopting our e-commerce platform, this customer can now have every office manager log into their store on their own time, approve proofs online, and immediately place orders. Those order details flow straight into the center, and approved artwork enters the member's production workflow. By automating these tasks through e-commerce, they save about 15 minutes per order – which averages out to about five "found" hours each month that can now be used for other projects.

While many multi-unit accounts and businesses have an obvious benefit to gain from e-commerce, many centers have seen success with clients of all sizes. Any customer that frequently reorders products – even ones with content changes, should be looked at as a client that could benefit from e-commerce options.

Another benefit to e-commerce? It's a solidly "sticky" platform – once customers become familiar with it as a solution, they very rarely leave. And once the ball gets rolling with e-commerce, it quickly picks up steam. Our owners typically see a client start their e-commerce journey with just one or two specific asks, only to quickly grow beyond that.

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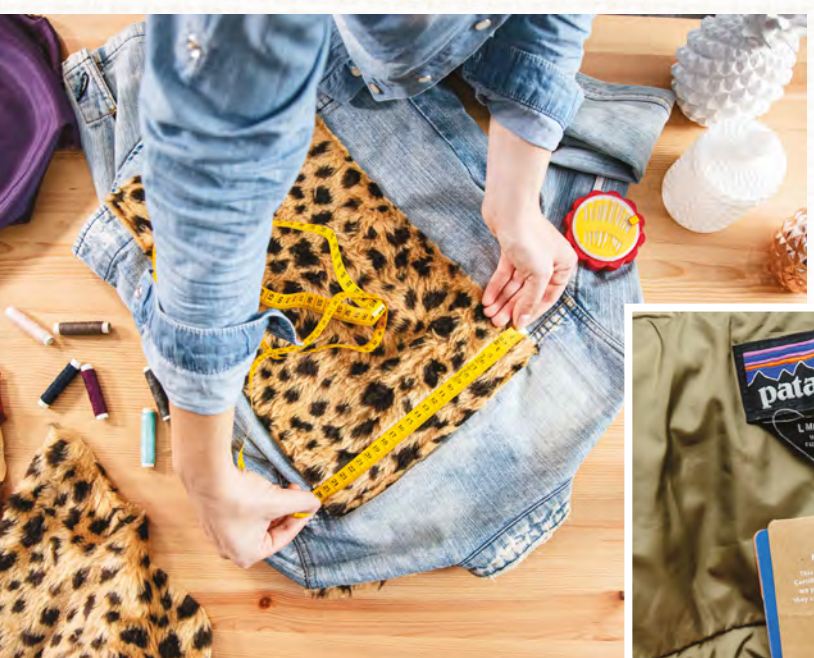
Ultimately, e-commerce is now considered a part of the large portfolio of tools that an Alliance Franchise Brands Center uses as part of the total client value proposition. If you're not already using an e-commerce tool, it's time to start. ●

RESIZING OUR CARBON FOOTPRINT

Is sustainability within reach for textiles and apparel?

By Cary Sherburne

I recently read a Fortune op-ed that truly alarmed me and prompted me to write this article. Patagonia, which has long been held up as a model for a sustainable future, was one of the first – most likely the first – clothing brand to put a take-back program in place with its Worn Wear website. This gives customers the opportunity to return merchandise that is in good condition



in exchange for new merchandise credits, with the company cleaning, repairing and selling the used items.

Fast forward to today, and the alarming Fortune op-ed. Beth Thoren, environmental action and initiatives director, EMEA, for Patagonia, stated that at Patagonia, they don't use the word "sustainable." For a company that has long been held up as a sustainability example, that is alarming. But even more so is the reason why.

It's because we recognize we are part of the problem. Previously, we set ourselves the target of carbon neutrality by 2025. But purchasing offsets to get us there doesn't erase the footprint we create and won't save us in the long run. We must first put the weight of our business behind drastically cutting emissions across the full length of our supply chain.

What is unsettling is that, right now, we aren't entirely sure how to do this.

Thoren cites the fact that recycled content comprises 68% of total usage – quite an achievement, but still not enough. And if Patagonia doesn't know how, who does?

With that question in mind, I recently spoke to Tiffany Hua, senior research associate at Lux Research, and the analyst focused on textiles and apparel, contributing to the company's recent 2022 Foresight Report. The report highlights analyses and predictions from Lux Research on emerging technologies and potential scenarios that might unfold in 2022.

Throughout the report, the analyses are structured via the Lux Sustainable Innovation Model, which is comprised of three key pillars: Climate Tech, Circular Economy and Future Consumer Tech.

"These three pillars represent the priorities that corporate leaders should put front and center when developing their sustainability strategies," Hua said.

According to Hua, The Climate Tech pillar

focuses on technologies that support the elimination and remediation of greenhouse gas (GHG) emissions. The Circular Economy track focuses on circular solutions and business models that reduce and eliminate waste and optimize resource consumption. The Future Consumer track focuses on supporting health, wellness, safety and transparency across a number of industries.

Note that digital transformation is integral across these three pillars. Data and being able to measure and manage one's impact is at the center of achieving sustainability.

The Sustainable Innovation Model is embedded in Lux Research's business, where Hua looks at the textiles and apparel industry through this lens.

Hua said that large apparel brands are being pressured to solve the industry's sustainability challenges, where building a sustainable innovation strategy is key to surviving.

Key Sustainability Challenges for Textiles & Apparel

Hua identified key challenges for textiles and apparel in 2022 and beyond, relative to achieving sustainability goals.

Referring back to Lux's Sustainability Innovation Model, Hua said that companies in the apparel and textile industry must form a sustainable strategy. First, she said, apparel brands have to gain visibility within their own supply chains. This was exactly the challenge Patagonia identified in its recent op-ed, citing the fact that 95% of its emissions come from its supply chain, within which Patagonia is a minor player that produces in shared factories, often alongside large brands.

"Transparency and digitalization via auditing of supply chains give an organization the full picture of supply chain risks and fragilities when developing long-term strategies," Hua said. "While companies can tackle transparency and sustainability internally, we can expect to see additional efforts to create a more transparent, flexible and resilient supply chain. Transparency is the first step to understanding the sustainability impact of raw material and processing of textiles. Transparency will also help to understand and to gather more information on the material lifecycle assessment."

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Another challenge is the broad availability of sustainable materials.

"[Use of] sustainable materials and fibers will continue to increase as many companies have made commitments to move to sustainable materials by 2025 or 2030," Hua said. "Many apparel brands currently use what is available today at scale - recycled polyester made from plastic water bottles and cotton certified as sustainable by organizations like the Better Cotton Initiative. But the simple fact is that there are not enough sustainable offerings currently on the market at scale and at a reasonable cost, with more demand than supply for these sustainable materials. In 2022, we can expect apparel brands to struggle to identify and acquire more sustainable materials."

Finally, Hua identified textile recovery and recycling as a sustainability barrier for textiles and apparel.

According to Hua, textile recovery and recycling is the key to unlocking the circular economy in the apparel industry. However, recovering and recycling a garment is not that simple. Many garments are made from multiple material types and have accessories, such as buttons and zippers that must be removed prior to any recycling.

Meanwhile, the textile recovery infrastructure and recovery technologies are still a work in progress, although she expects we will see innovations in the next year focused on waste management, including textiles.

In addition to processes that collect and separate textiles, there is a huge technical challenge in the recycling of textiles – especially synthetic and

blended textiles like poly/cotton blends. To truly recycle these garments back into garments and not downcycled products, chemical or advanced recycling processes must be used. Polyester, for example, must be chemically reduced down to its petrochemical base and reconstructed as new fibers that fit into the circular economy model.

Development is underway by several companies, including Worn Again, Ambercycle and Circ, to address this issue of separating the polyester from the cotton, using chemicals or heat. These developers claim their advanced recycling methods result in little material loss and a quality of yarn that is almost undistinguishable from virgin feedstocks.

Another option is mechanical recycling, which does not use any chemicals. Most mechanical recycling, however, is limited to downcycled products, like insulation or carpet padding. But there are some companies, like Circular System's Texloop and Pure Waste Textiles, that are targeting quality fibers from mechanical recycling technologies. This involves shredding and carding to extract fibers from the fabric, and then spinning the resulting fibers into yarn. Waste fabric can also be shredded and downcycled to insulation, carpet padding and a variety of other uses that extends the fiber life and contributes to landfill diversion.

There Are Other Options ...

First and foremost, we need to eliminate the concept of fast fashion from our closets and our production mindsets. Producing cheap clothing that doesn't last, and is perhaps worn only once, is clearly not a sustainable model.

Other options for improving sustainability for textiles and apparel, in addition to efforts to reduce GHG emissions across the entire supply chain, include the following:

- Brand take-back programs. More brands should follow the lead of companies like Patagonia, Levi's and Eileen Fisher in establishing these programs. Not only do they extend the life of garments, but they also increase brand loyalty. Another advantage is the fact that brands know exactly what fibers and materials are used in a particular garment, and at the point they need to be recycled, they can more easily find the best way to get that done.
- Resale. Brands can re-sell garments they receive as part of their take-back programs. But there is a growing consumer-driven market for resale, facilitated by apps such as DePOP, real-real, Poshmark, ThredUP and more. ThredUP has an aggressive Resale-as-a-Service (RaaS) program with a wide range of partners that helps keep apparel items out of landfill.
- Upcycling. "Recycling breaks products down into their raw materials to be made into totally new things, while upcycling creatively repurposes old materials while maintaining some of their original characteristics," according to EarthHero. An example in apparel is San Francisco-based unspun. Not only do a pair of unspun jeans naturally have a longer life cycle, since they are custom fitted to the consumer via 3D imaging technologies, but the company has a take-back program that includes upcycling – turning a pair of jeans into cut-offs that can be resold, for example. The company is also using thread that dissolves with heat to make disassembly more efficient.

Another option is to find new homes for unwanted apparel through programs like Boston-based SwagCycle, a platform that matches donors with recipients for materials that can be re-used or recycled, giving them a second life and keeping them out of the landfill. This includes such things as donations to charities like Dress for Success and Boys & Girls Clubs, to finding ways to use ground-up materials in insulation, mattress stuffing, carpet pads and more.

There is hope for improved sustainability in textiles and apparel, but it is not without its challenges. Obviously, a major need is to get a handle on how to make the supply chain more sustainable. But the efforts to establish take-back programs and find ways to recycle, resell and upcycle garments are not trivial either, and present options for all of us to participate in this important effort. ●

CUSTOMERS DEMAND GREENER OPTIONS

A guide to eco-friendly, sustainable fabric and textile printing

By Ella Faulkner, Soyang Europe, compliments of Texintel

(Image courtesy Texintel)

Print customers are increasingly requesting and specifying greener materials, helping their supply chains become more sustainable. Large-format printing is no exception; and the industry has responded by providing machines that use less electricity, processes that use less water, curing that utilizes less heating, while also focusing on developing newer, greener substrates and materials.

When and where to consider eco-friendly fabric and textile materials?

Large-format digital printing is widespread and used for showroom and retail displays, exhibition graphics, flags and banners, as well as flooring projects. The print quality of the latest range of large-format printers can produce remarkable imagery, with clear lines, high resolution and vivid colors. Yet sustainable textile printing can only exist in tandem with supply chain transparency; and with effective collaboration, the large-format fabric sector can make big strides in becoming an eco-friendly solution.

Public sector spaces are under ever-increasing pressure to offer a sustainable environment filled with sustainable products. So, too, are educational and health care facilities. But the biggest market is found in retail, where showing off green credentials is demanded by customers.

What type of textile printing is greenest?

- Latex is by far the most eco-friendly printing method. It's often fully recyclable and is a technology that has greatly advanced in the last few years. Latex ink works well with any fabric, synthetic or natural. There is no need for additional waste processes like transfer papers.
- Eco printing on fabric using large-format UV technology means that the ink is sublimated to the substrate using an inline fuser. It can adhere to almost any surface, including a wide range of fabric, both synthetic and natural.
- Dye sublimation remains a popular form of printing because it can reproduce photo-like quality on a wide range of fabrics, where the ink is printed onto screen paper before being pressed into the fabric to transfer the image. From textile flooring to retail exhibition displays, this type of printing absorbs water-based inks, ensuring the inks penetrate the fabric weave. However, it still produces waste in the form of excess ink and transfer papers.

Reducing Waste in Textile Printing

More than ever, digital printing technology is able to realize the promise of a greener future and cleaner environment. Print consumers are more conscious of their carbon footprint and are specifying more sustainable products from suppliers. And these processes are being continually developed to improve and replace older, unsustainable manufacturing practices.

For instance, using laser cutting technology minimizes excess material waste. Using a large-format cutter can cut and seal all types of fabric, at the

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THROWING SHADES

What you need to know about textiles and color management

By Cary Sherburne

Color management continues to be a hot topic in commercial print, packaging and display graphics. But what about textiles?

As the industry continues a migration to increased use of digital textile printing technologies, what is the same and different? We turned to two experts for answers: Mike Scrutton, director of print technology and strategy at Adobe; and Ray Cheydleur, printing and imaging portfolio manager for X-Rite/Pantone. Both have a long history of color management expertise in printing and packaging, and both have also applied this knowledge to textiles.

Mike Scrutton, *Director of Print Technology & Strategy*, Adobe

Printing News: *Mike, how would you characterize color management in the textiles industry?*

Mike Scrutton: Textile color workflows fall into two separate, very discrete camps. Although as with most things, there is some blurring in the middle. The first is very much a named spot color workflow where the designer is provided with a color palette that can be reproduced faithfully, limiting the colors that can be used in a design. The second is where you just let the designer go at it, and you try to resolve any color reproduction issues later.

PN: *Let's talk about the first one. Clearly, this makes a lot of sense when you are talking about conventional textile printing, such as screen printing, where the technology limits the number of colors that can be used, right?*

MS: Exactly. Brands care about the color and consistent color reproduction for a variety of reasons. You may have a color in a print blouse where it is alongside something else you might be wearing, such as a pair of pants, that is a solid color. And each uses a completely different technique. You are not going to screen print a solid color on a pair of pants – you are going to dip it. Let's say the blouse print has a particular shade of cerise in it, and the pants are also cerise. You want those two colors to match as precisely as possible. Complicating it further, you likely have two different fabric types you are dealing with.

It's different in commercial print. Color management is still stringent, but if you think about a magazine, I only worry about color management within the context of that magazine. But in textiles and apparel, the end customer will be assembling their

own ensemble that they want to look nice together. You never tend to see a single product in isolation, whether it is in apparel or home décor.

PN: *In terms of the second one, you could call it, "Designers Gone Wild." How do they know that the color is achievable in the production world?*

MS: The first issue is how the designer specifies the color. Many times they will use the standard Pantone color swatch books used in commercial print, which is a color standard for printing on paper, and it wasn't designed for textiles. It may not deliver the expected outcome. Then it is up to the printer to try to work out how to reproduce the color. This is often the case with independent designers or smaller brands that may not have as sophisticated a color workflow.

Designers are also using an RGB workflow, and when I speak at conferences, I always say, "Please, if you are defining an RGB color, please be explicit and specify sRGB or Adobe RGB or whatever." That will help the producer have more of a chance of reaching the desired color.

PN: *Good advice. What about a designer ordering something produced by a supplier like Spoonflower? Are there ways in that model they can ensure the desired outcome?*

MS: Absolutely. You can tell the provider what fabric you will be printing on, and in the case of Spoonflower, you can order a print sample on the target fabric. It will have a variety of colors, and each patch will have a hex code printed below it for that particular color. So you ask for that specific hex code when you order the piece, and you can be pretty confident you are going to get the color you expected. It's basically an RGB workflow that emulates a spot color workflow.

PN: *Of course, another important aspect of color management is measurement, and that's where your expertise comes in, Ray. Maybe you could start by just talking a little bit about what our readers are typically familiar with in terms of color management in commercial or display graphics printing and how that translates over to textiles.*

Ray Cheydleur, *Printing & Imaging Portfolio Manager*, X-Rite/Pantone

Ray Cheydleur: I would start by saying there are a lot of things that you see in digital textiles today that are in some ways, in the state digital color printing was 10 or 15 years ago. The tools are there, but

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THE SHOW GOES ON

Visit us in May at the ISA International Sign Expo 2022.

We're on! ISA International Sign Expo 2022 is scheduled for May 4-6 in Atlanta. And yes, it will happen in person.

Over the last two years, ISA has had to cancel or convert to virtual this due to the pandemic and related uncertainty. As I write this, we are in the midst of yet another surge, and the numbers are truly daunting. But we will go forward.

Let me explain why.

First, we have every reason to believe that things will be so much better by May – and that's not just optimism speaking. Last fall, ISA contracted with data scientists who have provided modeling for case counts and surges in the pandemic. As far back as October 2021, they were warning us to expect another surge in late December/early January – at a time when it looked like the pandemic might finally be winding down. Fast forward to just past Christmas, and it became clear that they would be correct.

Their modeling data shows us that by May, the surge will have subsided and we should be able to safely hold the event, specifically in the Atlanta area. Recent modeling from the Centers for Disease Control and Prevention also anticipates an easing of the current surge by late January.

But we're not data scientists or public

health experts. We are an industry that thrives when we come together. And after two years of missing out, it's time to regather.

So much has changed in the past two years. New products are waiting to be introduced. Supply chain issues have threatened our businesses. Worker shortages have demanded a solution. All of these are problems waiting to be solved. And our industry is stronger when we put our heads together to find the next great idea or innovation.

I believe there is pent-up demand, with companies just itching to buy, to grow, to solve challenges.

We simply cannot go on without gathering. Our industry has always become stronger when we've been able to get in a room, convention hall or restaurant/bar and do business. Our products must be seen. A computer screen can't convey just how bright that printer's ink is, nor can it convey just how easy that channel letter bender is to operate.

Gathering in person may be different, but ISA is working hard to make sure that any changes will enhance your experience.

What won't change is that you still will find the latest products, the most valuable connections and the most strategically targeted education, designed to solve the problems facing your company.

It isn't lost on me that this marks the 75th year of ISA International Sign Expo. Just imagine: Those leaders were coming out of World War II – a time that was also challenging. Businesses had been upended as workers went off to war or production shifted to war goods. Supply shortages meant steel, aluminum and other goods at the base of our industry were designated for tanks and guns, not signs.

And yet, as the world began to emerge from the pain of war, the country rallied to venture out to meet, to connect and to grow. That set off an unprecedented time of expansion for our industry and the broader global economy.

We've been through a struggle of our own. And that same promise to recover and reignite inspiration awaits us, just as it did 75 years ago.

I hope you'll plan to join us at ISA International Sign Expo, or at least reach out to learn more at www.signexpo.org. It's time to get back to work, back to creating the kinds of products that grow strong businesses and support strong communities. ●

Lori Anderson is president & CEO of the International Sign Association (ISA) which serves the international on-premise signage and visual communications industry.

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Kavalan PVC-Free Banner Materials Awarded Certifire - Ts62 Certification

CMYUK has announced that Kavalan Sunlight Weldable Frontlit Banner and Kavalan Spiderweb 300 Mesh Banner have both successfully passed the stringent Certifire - TS62 certification program.

Certifire - TS62 distinguishes PVC-free Kavalan building wrap materials from any competition. These products will now bear the Certifire mark and once printed, can be used on any scaffolded buildings and construction sites, along with the many other promotional and branding applications for which banner and mesh are used.

Certifire is an independent third-party certification scheme that assures performance, quality, reliability and traceability of products and systems. It is recognised by regulatory authorities worldwide as an international mark of fire safety across a diverse range of products.

The Certifire - TS62 scheme guarantees that temporary printed protective coverings used on construction sites have the highest level of fire protection and comply with stringent safety performance specifications.

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Blur Uses Kornit Digital for Scalability, Operational Versatility, 24-Hour Production

Kornit Digital Ltd., a worldwide market leader in sustainable, on-demand, digital textile production technologies, announced today that Portuguese textile specialist Blur has installed the Kornit Presto S with Softener solution for sustainable, single-step direct-to-fabric production of multiple fabrics in any quantity. The print services provider, which supports the production needs of high fashion brands has previously installed multiple Kornit Atlas and Avalanche systems for industrial-scale digital direct-to-garment (DTG) production on demand.

Using Kornit's efficient, eco-conscious, proprietary technology and consumables, Blur provides rapid fulfillment of orders ranging from a single piece to mass production, with an average order of about 500 items. Since implementing the Kornit Presto S, the system has been in operation day and night, producing samples during normal business hours and fulfilling diverse incoming orders overnight.

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MUTOH's New XpertJet 1341SR Pro Offers Remarkable Print Quality and Speed in a Compact Package

MUTOH America announces the launch of its latest Eco-Solvent roll-to-roll printer, the 54" XpertJet 1341SR Pro, a compact powerhouse featuring MUTOH's new AccuFine print head, VerteLith RIP software and i-screen technology, which combine to deliver high-quality output and high-speed printing. The new 1341SR Pro is 42% faster than the previous model in a production 600x900 mode.

The XPJ-1341SR Pro is the successor to the popular ValueJet 1324X and is updated with the latest in MUTOH technologies and hardware. The AccuFine print head achieves best-in-class dot placement and accuracy with increased nozzle row length for higher productivity, while i-screen technology reduces banding to create smoother print images and optimizes the capabilities of the AccuFine print head.

www.printingnews.com/21158727

Roll Flex Label Company Plans for the Future with New Durst Tau RSC-E

Roll Flex Label Company, located in Hackensack NJ, recently invested in the Durst Tau RSC-E.

The Durst Tau RSC-E operates at speeds of up to 170ft/min (upgradeable to 262ft/min) with native 1200dpi native resolution and available with up to 8 colors. Durst RSC high opacity white ink delivers a smooth white which is ideal for printing on metallic and clear materials. Best in class quality and productivity, combined with highest uptime, result in a competitive package with lowest total cost of ownership.

Equipped with Durst Workflow Label software solution and the monitoring tool Durst Analytics, this printer is a production unit from day one. Steve Lynn, Director Label & Packaging for Durst North America, offered, "We are delighted to welcome Roll Flex into the Durst family and look forward to a great partnership as they transform their business with Durst 1200dpi inkjet production capabilities."

www.printingnews.com/21158799

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same time, reducing the need for overlapped edges and additional machinery for sealing the finished product. It also promotes longer life expectancy for a product where fraying and unstitching are expected tradeoffs for flexibility. Additionally, laser cutting ensures accuracy first time, every time. Furthermore, as we head toward more responsible manufacturing, recycling can offer extended life for textile fibers.

All the choices made in the design process will impact the future life of the large-format print, and repurposing offcuts can also help improve and fulfil those same recycling initiatives.

It's also interesting to know that textile manufacturing across multiple industries that used analog technology once consumed immense amounts of resources and generated (now viable) waste. This included water, energy and waste material like inks and dyes and chemical solutions, which are toxic to the environment.

Eco-Friendly Benefits of Latex and UV Printing

In digital printing, the more advanced the technology, the cleaner and greener the process tends to be. Latex, more than any other method, is considered the most sustainable, closely followed by UV printing, which has made huge technical strides in energy efficiency. And with it a whole new light can be shined on the eco-friendly capabilities of modern textile printing.

Less Waste

- When printing directly onto the garment there are no secondary processes required. So while transfer printing uses a substantial amount of ink, much of which will be wasted during transfer, latex and UV only use the amount of ink required to print.
- When less equipment is required during the setup of the print process (there are no screens or plates needed to create and transfer designs), then no bulky waste products are produced—all of which will eventually need to be disposed as waste once each print run is completed.

Water Conservation

- It is well known that a huge amount of water is required to produce textiles, but it is also the case that it takes a lot of water to produce printed fabrics, too. This is the same with the cleanup process involved in screen printing.
- With more modern machinery and advanced ink in sublimation technology, it can save millions of tons of water. Colorfast pigments are now used to impregnate the textile fibers.
- Using heat or UV eliminates the need for either pre-wash treatments or post-production processes involving water, like steaming or washing.

Energy Efficient

- Digital submission of large-format designs enables prints to be sent directly to the printer.
- No transfer paper means less physical waste, only the ink required to print, and it is quicker.
- Add in the adoption of low energy using UV lamps, and the process of screen transfer can look positively analog.

Moving Forward with Eco-Friendly Textile Printing

Modern improvements to digital printing have allowed eco-friendly textile printing to be done in a manner benefiting the environment. It allows environmentally aware consumers the luxury of choice when it comes to their textile print needs.

Digital printing technologies are constantly moving forward. In large-format textile printing, positive steps are being made to replace traditional, but ultimately unsustainable, printing methods.

Choosing sustainable textiles is now corporate policy for many retailers and brands, seeking to improve their environmental credentials and impact, both locally and globally.

Find out more at Soyang Europe or at www.texintel.com.

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which looks and tastes absolutely the same as today's meat, but there's nothing there from animals, it's all plant based.

There is a lot of technology there. It's complicated technology. It's chemistry. There's a printing element involved, because we take components and convert them through printing and artificial intelligence into slabs, which are basically whole cuts. But more importantly is that we've tried to reverse engineer meat to understand, what is it that people love about it?

> "There are a lot of lessons that carry over of how you build the brand, how you build the community, how you launch and learn."

There's also a lot of marketing. There's a lot of relationship building with printers, with chefs, and if you think printers are interesting and emotional, spend some time with chefs! But, it's fascinating, and again there are a lot of lessons that carry over of how you build the brand, how you build the community, how you launch and learn, because the product may not be perfect at launch. But ultimately it's a transformation of the meat industry from analog to digital, and there are compelling reasons to do it since the environmental impact is mind-boggling. With more than 7 billion people on this planet, and a billion cows that we use for milk and food. The cows and all the humans have about the same negative impact on the environment in terms of carbon footprint, water usage, waste, etc. If you can convert 10% of the meat people consume today to plant based, the impact on the environment is fantastic.

In the case of Twine, they have developed a machine that it's a bit like an Indigo, but instead of putting color on paper or plastic, it puts color on an individual thread. So you put in a white color, and out comes any color you want. It replaces very complicated and environmentally detrimental water and dying solution with on-demand, digital solution which is much better for the environment. But it's also still about transforming an industry, and convincing conservative people that have solutions that have worked well to change. In this case, the motivation is also a result of the supply chain issues' wake-up calls related to the global pandemic, and people are looking for ways to move production back locally. In the end, transformation is still really about business. You have to have a return on investment to the shareholders, but there's also a mission of literally making the world a better place.

More to Come ...

I would like to address your interests and concerns in future articles as it relates to the manufacturing of print, packaging and labels, and how, if at all, it drives future workflows including "Industry 4.0." If you have any interesting examples of hybrid and bespoke manufacturing, I am very anxious to hear about them as well. Please feel free to contact me at david@zwang.com with any questions, suggestions or examples of interesting applications. ●

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some of the practitioners are not aware of all the tools, or they're not aware how the tools are different between analog and digital technologies.

In a specific example, a designer was having custom wall coverings made, and the printer she chose could replicate the colors, but only with a lot of tweaking. It then becomes very difficult to replicate this in the future. She switched to another provider in the same city using the same device, but this second provider taught her about preparing her files for that device. That marries the upfront expectation with production and makes for a happier customer and a more profitable printer.

PN: *You obviously work with color measurement devices, which I assume are also included in that set of tools you referenced. Can you talk a little about the role those devices play, from creation through production, and which type is more suited to textiles?*

RC: In traditional textiles, people mostly, but not exclusively, use sphere-based color measurement instruments. But people also tend to use what they are familiar with. They might use a device that worked well for electrophotographic printing, but which isn't optimum for textiles. They end up with a controlled process, but one that is not optimally controlled.

PN: *Can you give me an example of a color measurement instrument that you have optimized for textiles?*

RC: As you know, we have had i1Pro's in the market for almost as long as I have been in the industry. Most recently, we developed the i1Pro 3 Plus, a large aperture version of the i1Pro 3, that has some additional capability and a different illumination fill that enhances color measurement in textiles. These tools are not inexpensive, of course, but if you look at the entire life cycle of the process, they save you money and frustration in the end.

PN: *So how does that independent designer or small brand go about selecting and specifying the colors they are going to use in a particular design?*

RC: There's no one workflow that works for everything. But the key here is working well with the production side. They can either give you an optimized set of colors, or they can give you an ICC profile that you can use to see whether the colors do what you expect them to do. And it needs to be color managed on both ends. Production has color management; and ideally, design has a color managed screen and an idea of how some of these preview tools work in their design application.

PN: *What makes the textiles process different from paper-based printing?*

RC: On paper, we have finishes, and these tend to be relatively straightforward. But in textiles, the texture of the fabric combined with the finish presents an issue for color management. This, again, points out the importance of the designer not simply handing off a file, but to actually communicate withtheir producer. The file might have encapsulated within it information about particular Pantone colors and their achievability. But with proper communication, the provider can say, "Based on this ICC profile, I can hit this color perfectly, but perhaps this other one will suffer. Is that okay?" It makes both of them smarter and develops a better long-term relationship.

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PN: *So in your experience, what is your recommendation for designers and producers in textiles relative to choosing a 45/0 or 0/45 spectrophotometer versus a sphere-based spectrophotometer to overcome some of these issues?*

RC: The difference is a 0/45 tends to do a better job of illuminating the way your eye sees color. But for control of color, a sphere is very powerful, particularly when you get to textured substrates such as textiles. And for a producer of digital printing, it's also important to know what your RIP and color management tools work with. It doesn't matter what instrument you have, if it won't connect to the RIP, it probably won't be used very much. ●

***Cary Sherburne** is a well-known author, journalist and marketing consultant whose practice is focused on marketing communications strategies for the printing and publishing industries.*

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THE LIZARD AND THE WINDOW WASHER

How to hit the jackpot when things go wrong

The sun was shining as I parked my company car next to a window washer's truck on the main street of a small midwestern town. I was calling on a prospect whose office was above a downtown retail store. My visit was productive; after an hour I left in good spirits but was surprised to find overcast skies and drizzling rain outside. I quickly hopped in my car. For some reason my backup sensor went crazy when I shifted into reverse, but I could worry about that later.

Turning on my windshield wipers I noticed a piece of paper under the wiper blade. I pulled under the canopy of a gas station and retrieved the scrap. It was a note from the window washer who had been parked next to me.

In his hurry to leave when the rain began, he had hit my car. With a sinking feeling I stepped out to survey the damage. Sure enough, the left rear corner was smashed, the lights broken, and the backup sensor was dangling from the crumpled bumper, causing it to sound whenever I shifted into reverse.

I dropped the car at the body shop next door to my office and called the number on the note. The window washer gave me his insurance company and policy number. My next call was to my business insurance broker.

"Look," he said. "I know you prefer me to handle everything, but it would be better for you to submit the claim directly to his insurance carrier. That way your insurance company won't even know about it."

I have no time for such hassles and told my broker so.

"It's really easy," he countered. "Just go to their website and fill in the form."

I pay him for advice, so I decided to give it a try, although I'm an old-fashioned guy who has always assumed that an internet-based insurer with a comedian lizard frontman must be a fly-by-night operation.

My broker was right. The website was quite user friendly, the proper form easy to locate and simple to fill out. I soon received a phone call from a live claims adjuster, who stayed on the case throughout the process. The claim was approved and paid promptly, and he personally followed up to verify my satisfaction.

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My opinion about the lizard's company turned around 180°. When my personal insurance came up for renewal (three kids with four cars between us) I reached out. The rates from the lizard (actually a gecko) were significantly lower than my current premium. I already knew their service to be impeccable, so there was no reason not to move my policy.

But wait, there's more. My mid-century modern house is mostly windows, which need washing. I called, you guessed it, the window washer. Crazy? Not at all. I had his number. He had already demonstrated his honesty and integrity.

Whenever a customer called about a problem with a job, Gary Glaser, former sales manager at Bindagraphics in Baltimore, Md., used to say: jackpot! Crazy? Not at all. His point was that when everything goes smoothly people rarely notice. It is simply what they expect.

It is when things go wrong clients stand up and take notice. Blow it, and you've not only lost a customer, but in today's world you'll be publicly tarred and feathered on social media. Handle it well and you've made a friend for life. ●

***Steve Johnson** is a successful print owner and digital pioneer. Each month in Johnson's World, he offers up his take on the day-to-day world of graphic communications.*

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