



# Disruption Leads to AIDC Opportunity

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The cloud of COVID has a silver lining for the AIDC industry. It has underscored the need to track and trace in real-time, accelerated the digital transformation wave that was rising before the pandemic, and prompted organizations to prioritize supply chain operations in their digital agendas. Amid all the talk about “supply chain disruption,”

AIM members have insight into what businesses and public sector organizations are actually doing to improve their supply chain and overall business resiliency. Based on that insight, we believe 2022 will be a year of strong growth for AIDC use, both for traditional use cases and emerging ones involving blockchain and sensor technologies.

The term “supply chain disruption” is seemingly included in every news story and analysis of business events, and “digital business transformation” and “transformation journey” are typically called for as the antidote.

Unfortunately, those terms are used and overused so much they can easily lose their meaning. Through our work with businesses of all sizes, healthcare organizations and government policy- and standards-setting bodies, AIM and its members have a good view into not only what is being talked about, but what organizations are actually doing to change their operations.

This view gives us confidence that the recovery the AIDC industry underwent in 2021 will gain momentum in 2022. Businesses are applying the lessons learned from the pandemic by truly investing in modernizing and digitizing to become more automated, agile and responsive. While this creates widespread opportunity, we see particularly strong activity and prospects in several areas:

- Track & trace use cases involve tracking, data capture and information sharing among multiple organizations, not just across one company’s production and distribution processes.
- Upgraded temperature-controlled logistics operations take advantage of temperature sensors and automated, real-time alerting.

AIM members educate enterprises about these capabilities and build systems to bring these and other Internet of Things concepts into operations at scale. So while IoT is another widely used and widely misunderstood term, its interest and adoption growth is real. The real-world track & trace and sensor-based production and logistics projects we’re contributing to prove that.

Tech-enabled processes to provide supply chain visibility can be adopted across many industries, so the AIDC-related growth we’re seeing has a lot of potential to continue. Based on current interest levels and projects, we expect new AIDC implementations to be especially strong in several industries in 2022, including food and agricultural products, notably cannabis, other agricultural products, medical devices and other segments of the life sciences and healthcare industry.

The cannabis industry presents an outstanding opportunity for AIDC solution providers. It is fast-growing, but more importantly, has strict documentation and product traceability regulatory requirements that AIDC technologies are well suited to meet. It is an ideal market for AIDC solutions but there is a caveat: the businesses in this industry show strong preference to working with providers that are known in the industry and can demonstrate they understand its specific requirements. Winning customers requires making an ongoing commitment to the industry.



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Food and medical products have similar traceability requirements as cannabis, and their producers and distributors strongly value automation. These are more traditional markets for AIDC solutions. AIM works closely with several global and national regulatory and standards bodies, including the FDA. We expect its efforts to boost the need for AIDC-enabled processes in 2022 and beyond, separately across the food, drug and medical device segments that the FDA regulates. There are similar opportunities worldwide.

The industry sectors and use cases highlighted here all have specific needs that can be met with blockchain technology. AIM expects blockchain to have one of the highest percentage growth rates within the AIDC technology spectrum in 2022, although it will remain a somewhat specialized technology. In most cases, blockchain will be used with, not instead of, other data capture and communication technologies.

AIM and its members are involved in many more promising technology and industry developments besides those discussed above. We encourage you to get involved to help your business help others take advantage of these technologies and developments. **SCAN**



## 2022 AIDC Outlook and Opportunities

Staying ahead of the latest trends was always a challenge, but it's been even more difficult in the midst of a pandemic. Luckily, we can lean on the knowledge and insight of industry leaders for some direction. We recently chatted with Bree Bergman, director of vertical and field marketing for Zebra Technologies, to learn more about the opportunities expected in 2022.

### **SCAN:DCR: What are the biggest opportunities facing data capture solution providers in 2022?**

**Bree Bergman, our Director of Vertical and Field Marketing, Zebra:** While the labor shortage has been hard on many industries this year, it has presented an opportunity for data capture solution providers. As organizations address how best to address the labor shortage and retain the employees they still have, heavy investments are expected to be made in technologies that make tasks physically and/or mentally easier for front-line workers. Organizations will go to great lengths to prevent burnout and data capture solutions can help address this challenge. These technologies not only reduce onboarding time and speed time to productivity, but they also don't require specialized knowledge or experience that will rise to the top of spend priorities. Furthermore, the intelligent software powering the cameras, mobile devices and scanners being used in these technologies can handle critical thinking, make objective decisions, and allocate assignments. This leaves workers the final task: execution. It also frees up their time for problem solving, leaving organizations with employees that can be valuable advocates for both the company and its customers.

### **SCAN:DCR: What technology or service do you think will have the most significant impact on end customers in the next few years?**

**Bergman:** Real-time location systems (RTLS) used for data capture and input into barcode scanners and other tracking tools will have a significant impact on end customers in the next few years. They provide an accurate picture of what items are where and when. This level of visibility has improved the customer experience and will continue to accelerate in the new year.

Inventory management solutions such as RTLS not only improve efficiencies for businesses, but they also improve customer satisfaction along the item's journey. For example, RTLS can provide customers with real-time updates on where their item currently is, whether it's being packed in the warehouse or put on a truck. This prevents a customer from wondering where their product is and also reduces the burden on the organization who doesn't have to field additional status inquiries.

### **SCAN:DCR: What are some complementary technologies or services solution providers should be offering customers in 2022?**

**Bergman:** Software-as-a-solution (SaaS) will be a popular complementary offering that solution

providers should consider for their customers. Providers should consider intelligent workforce management solutions and software for their customers in 2022 in order to forecast labor needs and generate efficient schedules that maximize worker productivity. Predictive analytics will also be critical in 2022 to identify and react to issues in real time so retailers can avoid losses.

Customers will be fine tuning their inventory management strategies in order to prevent future disruptions, such as shortages brought on by supply chain disruption. With inventory management top of mind for companies globally right now, being able to manage and move product as quickly as possible will be important in 2022. Traditional demand planning will not be enough to overcome bottlenecks and inventory stocking and sourcing challenges, which is why more businesses will be evaluating other options, such as forecasting demand with SaaS solutions. Having a way to see why sales may have dipped via predictive and prescriptive analytics solutions will help retailers improve revenue performance.

### ***SCAN:DCR: Which vertical(s) hold the greatest opportunity in 2022?***

**Bergman:** Companies don't want to be caught off guard by supply chain issues anymore. They want to be agile and ready to address market or demand shifts as they occur. As a result, the retail industry will hold great potential for data capture solutions providers in the new year. As previously mentioned, the impact of the supply chain on inventory management was a huge challenge for retailers and businesses alike everywhere last year.

Having the ability to improve demand forecasting and be able to respond dynamically and frequently to decisions will help retailers execute better and avoid empty shelves for their customers. In an industry where consumers are more impatient and unforgiving than ever before, making sure the product they come into your store looking for is there is critical to keeping their business and preventing them from going elsewhere or looking online. According to Zebra's 14th Annual Global Shopper Study, more than 70% of surveyed consumers say they recently left a store without all the items they wanted, with nearly half of them citing that out-of-stocks were the reason they did not make an purchase in -store.

In addition to the retail industry, another vertical that holds some of the greatest potential for data capture solution providers in 2022 is manufacturing. Manufacturing does not start or

end at the production line, and with the increase in demand driven largely by the spike in online shopping, manufacturers are under more pressure than they were before. New solutions such as fixed industrial scanning, RFID, and real-time location systems will undergo a reboot in 2022 as manufacturers receive pressure from retailers, hospitality service providers distributors and even hospital administrators. These industries are all looking for ways to better manage and track and trace assets in real time, with complete accuracy.

Manufacturers will be expected to take on additional accountability for order fulfillment and loss prevention and will be a big driver of RFID adoption in the coming months. As a result, DCS providers who leverage this opportunity will see huge gains in the coming year as these solutions offer customers instant verification of inventory/asset status and can help expedite inventory counts that inform stocking security and labor strategies.

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## **How 2021 is Influencing Labeling in 2022: Cybersecurity, Workforce Shortages, and Sustainability**

***While the recent Log4j vulnerability continues to unfold, companies – especially IT teams – are under additional pressure to ensure all software products and services are secure.***

**By Jenna Wagner  
Global Marketing Director, TEKLYNX**

Log4j is a hugely popular piece of computer code. The bug discovered has been described as the most significant software vulnerability of all time in terms of the number of services, sites, and devices exposed to hackers. Once the issue was discovered, nearly every software company went into crisis mode – figuring out how their products were affected and, if they were, how to patch the bug and release updated



software to users quickly.

Outside of software releases to patch a known vulnerability, developers are continually improving solutions through the latest version releases with bug fixes and enhancements to help applications run smoothly and securely. Therefore, staying on the latest version of barcode labeling software and upgrading when a new version or point release is available is vital in minimizing the risk of security threats and downtime.

For companies with small IT teams, consider cloud-hosted label printing to take some burden off internal resources. In addition, hosting a browser-based label printing interface in the cloud on Amazon Web Services (AWS) is highly secure – AWS supports more security standards and compliance certifications than any other cloud platform.

As dual variants of COVID-19 spread, workforce issues continue to escalate – causing higher demand for automation and leveraging technology to help get the job done.

Automation is vital in helping manufacturers compensate for a worker shortage, eliminate time-consuming and error-prone processes, and keep up with consumer demand. It also sustains the need to continually improve operations to support e-commerce and an industry shift from B2B to B2C as ways to recoup costs from the pandemic.

Automation drives digital transformation – turning manual processes into digital steps and is critical to success. By automating labeling processes, companies can easily make their workflows faster and more efficient, enabling them to do more with less:

- **Reduce IT interaction:** Once label printing automation software is configured, little to no maintenance is required.
- **Convert data to labels:** Label printing automation software automatically populates the labels by pulling the data directly from business systems, eliminating manual data entry.
- **Ensure label accuracy:** Automating label printing processes reduces human interactions, requiring fewer people and decreasing the opportunity for error.
- **More user-friendly label printing process:** Eliminating unnecessary steps in labeling environments creates a more straightforward process for current or new print users to learn.



Across industries, sustainability is a significant purchase criterion for 60% of consumers globally – with the US number just over this average at 61%, according to the Global Sustainability Study 2021.

Managing operations in a sustainable and environmentally responsible manner is now a business imperative across the industry. Companies require more visibility into where their products go and how much of their product is used to measure the impact on the environment and eliminate waste. Tracking products throughout the supply chain starts with a barcode. GS1 standards provide the framework for real-time tracking, traceability, and supply chain efficiencies – it's the global language of business between suppliers, partners, and customers.

Beyond tracking products, companies should also be measuring any physical waste caused by barcode labeling within their four walls. When outsourcing label printing, companies surrender the option to make any changes to labels once they are ordered – likely in large quantities – and shipped. If something changes in products or environments that require a labeling change – such as the expansion of products sold, migrating from 1D to 2D barcodes or changing regulations – it may require the purchase of new label stock. This means the remaining stock is now an (expensive) pile of waste. Bringing label printing in-house saves recurring consumables and services expenses and regains control of labels.

2022 will surely be another year of digital transformation and adoption, creating opportunities for stability and agility with technology.

The last two years have forced technology providers to develop hyperflexible solutions, companies to become more agile, and the supply chain to become more stable. For companies to be set up for success in 2022 and beyond,

barcode labeling processes should be assessed for improvements and partnerships made with experts to create a secure, efficient, and sustainable barcode labeling environment. **SCAN**

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## MobileDemand Unveils Rugged Case for Lenovo Tab K10

MobileDemand, provider of rugged tablets, cases, and mobile all-in-one computing solutions for enterprise productivity, recently announced the launch of its xCase for the new Lenovo Tab K10. With its durable rugged construction, extreme protection, and unlimited mounting solutions, the xCase extends the tablet's capabilities even further. Mobile workers among energy, manufacturing, retail, and healthcare industries who rely on the Tab K10 will benefit from a rugged device that can withstand the inevitable bumps, drops, and spills. Through its partnership with Lenovo, MobileDemand is the preferred provider of industrial grade rugged cases for the Tab K10.

The xCase for Lenovo Tab K10 meets MIL-STD-810H from a 5-foot drop and has sealed ports to protect from dust and water — allowing companies to work efficiently while protecting their investment. The case is lightweight to support mobile applications yet highly durable for tough jobs where off-the-shelf, consumer solutions would fail.

With the xCase, the Tab K10 can be mounted where the work is. It includes a snap plate for an easy-to-use and implement, patented Snap Mount system. The optional mounting rail is ultra-slim and sturdy, adding functionality in the field to mount the device to walls, beams, sides of machinery, counters, desks, cabs of vehicles, and even secure mounting in forklifts. The mount is engineered for quick insertion and release of the Tab K10 tablet. An innovative magnetic mount system is available for attaching to metal walls, sides of machinery, and vehicles without having to drill holes.

Additionally, the case features ergonomic considerations like a glove-fitting back hand strap and convenient briefcase handle. These standard accessories make the tablet easy to carry and hold while in use and secures the tablet in the hands of workers, reducing its chance of being dropped.

With a long-standing commitment of providing add-on functionality to the mobile workforce, MobileDemand will continue to seek opportunities to enhance the case to include productivity-boosting components such as integrated barcode scanner, three-in-one payment modules, magstripe readers, and more — expanding the frontline worker's capabilities while protecting the investment. **SCAN**

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## Loftware Releases Smartflow 26.3

Loftware ended the year with the launch of a new release of its automated artwork management solution, Loftware Smartflow 26.3. This new release strengthens connectivity to Master Datasheets, which helps users to store and manage reusable packaging artwork content for artwork projects. This saves time and ensures consistency by leveraging pre-approved common phrases and translations for product lines or product portfolios.

Smartflow 26.3 enables users to access common phrases they have stored in its Phrase Library, therefore eliminating the need to re-enter approved copy in Master Datasheets. This enhancement can track where phrases are used, both in Master Datasheets and in projects, allowing users to administer bulk updates across projects.

“This release saves our customers time and improves the accuracy of their output, speeding time to market,” says Glen Bradlee, Loftware Director of Product Management. “The update also makes it easier to identify where phrases and assets have previously been used in Master Datasheets and projects, again saving time, reducing errors, and improving efficiency across packaging artwork processes. This capability is essential for companies concerned about adhering to customer, regulatory, and branding requirements across their global operations.

Additionally, Smartflow 26.3 provides more flexibility by allowing users to include a Master Datasheet Admin Workflow, which manages the process to edit, update, and approve content used in packaging projects, as a sub-project of a longer project workflow. This eliminates the need to manage two projects separately, making it easier to

manage the end-to-end packaging artwork process.

Other enhancements in Smartflow 26.3 include better oversight of storage usage and concurrent user logins within the platform, as well as more flexibility in changing roles between different departments. It also adds new email preferences to reduce the number of notifications sent to users.

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## The Problem with Data

By Steve Halliday  
President, High Tech Aid

Many of us have seen the advantages of using RAIN RFID. As a data capture technology, RAIN has many benefits – no line of sight needed, no batteries, up to 1000 tags read at a time etc. In 2020 there were over 20 billion RAIN RFID tags sold, many into retail apparel applications, but many into a wide variety of other applications.



After working through the logistics of using the technology, what type of tags to use, best reader types and locations etc. you will arrive at the question of what data to store on the tag (if you want help with the other questions, visit the RAINRFID.org web site, where the many documents available to you include “RAIN RFID Lessons learned from the field.”

So, what data should you encode on the tag? The first inclination is to just encode your serial numbers in the tag and leave it at that. WRONG. It is important to understand that when a tag is read, the application controlling the reader needs to know if the tag belongs to this system. Ah, I hear you say, of course it belongs to my system; it’s my reader. Again WRONG. Today more and more people are using RAIN tags for their applications. Many retail stores are using the technology. There are RAIN tags in automobiles, on airline bags, and in many other places. What’s to say that the person holding that reader isn’t wearing a RAIN tag in their clothing?

You do not want to be reading any of the “other” tags in the vicinity of the reader (we call that tag clutter). You want only to read your tags, so you need to differentiate your tags from everyone else’s. The ONLY way to do this is to ensure that

your tags are encoded with a standards-based numbering system. That numbering system will be controlled by an organization that will help to ensure that:

1. your tags are uniquely encoded; and
2. that you can easily filter them out from the rest of the clutter you may be seeing. When you just encode your “serial number,” you run a considerable risk that the company next door made the same decision, and your tag is no longer uniquely assigned to you.

The numbering system you select will depend on your application: if you are in retail, you should be talking to GS1 about your numbers. If you are tagging airline baggage, then IATA is the organization to speak to. These organizations (and the many other organizations that issue numbers) have all created systems based on standards that allow for the elimination of tag clutter.

The RAIN Alliance has recently announced a numbering system to help those applications that currently do not have a governing organization to help them ensure the uniqueness of their numbers. You can learn more about tag clutter and sign-up to get a number at <https://rainrfid.org/technology/rain-alliance-iso-numbering-system/>. But remember, you should be using the numbering system already in use in your application for the best fit with other systems.

The other important thing is to ensure that your tags are encoded correctly. I don’t just mean at the number level. There are control bits in a tag that define how the data is stored and where it comes from. The reader must understand these bits correctly, and the application must understand how to process them. If you are not sure if your reader or system can interpret the data correctly on a tag, then the RAIN Alliance has a set of test tags that have been encoded to allow you to see if the encoding has been done correctly and if the reader is passing on all the information that the application needs. You can buy a set of these standardized test tags at <https://rainrfid.org/product/rain-reader-and-system-test-tags>.

As a final word, if you are not convinced of the need for a standards-based numbering system, think about this: You are positioning yourself as the bad actor in the scenario by not using a system where other users can filter out your tags. You are the odd company out that doesn’t follow the rules, and you might be blamed for problems. **SCAN**