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Special *SCAN: The DATA CAPTURE Report* Reprint

Datalogic ADC Leader Bill Parnell Shares Thoughts On AIDC Emerging Technologies

Big data, digital watermarks, new imaging advancements are just a few of the exciting areas of opportunity.

It's always great to have the chance to chat with a true pioneer of AIDC technology. Bill Parnell, president/CEO, **Datalogic ADC**, has easily earned a spot within this elite club of AIDC experts. He combines a long history in this technology arena with his present day role as a respected leader of one of AIDC's largest vendors.

Parnell travels the globe speaking at the top conferences around the world. Recently, he gave us an exclusive interview where he talked about the new technologies that will be providing sales opportunities for vendors involved in enterprise mobility, RFID, bar code scanning (laser and imaging), and printing.

Big data is one of the areas where Parnell believes vendors should pay close attention. With new advancements in 2D symbologies and the various flavors of RFID, businesses participating in the supply chain can receive huge amounts of data that has never before been available. The question is:

What do you do with all this data to drive value?

Predictive analytics

Last year, speaking during the cornerstone CEO Vision session at **ID WORLD** Rio de Janeiro, the third Americas summit on traceability, mobility, and security held recently in Brazil, Parnell presented his market insights. He told listeners, "The objective in



Bill Parnell,
president/CEO,
Datalogic ADC.

analyzing extremely large and diverse types of data is to uncover correlations and patterns, aiding fast decisions and improved business results. Business Analytics focuses on why events are happening, what will happen next, and how to optimize the enterprise's future actions."

Parnell posed the question: Why do retailers care about "Big Data?"

The answer is: Analytics driven **demand side** decision making disciplines such as:

- Price and Promotion optimization
- Store site selections using census data sets and satellite imagery
- Shopper behavior and pattern modeling - in-store and on-line
- Loyalty programs - individualized based on purchase histories
- Hyper-accurate inventory data and visibility for

the shopper that improves the shopping experience.

With respect to the Supply Chain and Big Data, analytics driven **supply side** decision making disciplines include:

- Inventory optimization - matching supply chain to predictive customer purchases
- Predicting demand for new products
- Modeling and Optimizing transportation and logistics networks
- Labor management and scheduling.

A variety of applications

To put things in perspective, regarding Big Data, Parnell cited the following statistics:

- **Walmart** handles more than 1 million customer transactions every hour-item-level sales by customer
- **Facebook** collects the data from 50 billion photos from its user base
- **Capital One Credit Card** evaluates customers based on credit risk and usage to match them to credit product offerings
- **Windermere Real Estate** uses GPS signals from 100 million drivers: helps home buyers estimate prospective commute times
- **UEFA League** collects data (heat maps) that show where the game's action takes place, how many miles players run, their speed with and without the ball, and nearest defender to shots on goal.
- Estimated volume of business data worldwide doubles every 1.2 years

Where's the info coming from?

When it comes to identifying sources of information fueling this trend, Parnell refers to it as "Feeding the Big Data Beast." He listed the following sources:

- 1D and 2D Bar Codes - Retail Transaction Data
- Invisible Digital Watermarks—Product Interaction Data
- RFID and NFC—Product Attributes and Payments
- Item Recognition Using Images and Video
- Sensors—IR, Temperature Maintenance, Orientation
- Geo Locating via Phone—Shopper Tracking/Promotions
- Click Data—On-line Shopping and Social Sites
- External—Weather, Seasonal, Census, Competition, etc.

Imaging a must

There currently is a lot of attention on item-level RFID, but Parnell says he believes advanced imaging technology, is just as important in the realm of predictive analytics and data capture. "As we talked about in our last interview, I believe item recognition will be very important in future check-out systems," Parnell told *SCAN/DCR*. "Our advanced imaging and check-out solutions will enable grocers to scan items while they are still in the shopping cart and obtain the necessary information through item recognition. It's a way off yet; data base optimization and management enhancements are needed, but it is coming. Advanced imagers, illumination technology, high-speed low-cost processors, and specialized software are enablers for better solutions and increased sales."

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- Bar coding, 1-D & 2-D symbologies
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- Magnetic stripe
- OCR products
- Voice recognition systems
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- EDI
- Smart cards
- Biometrics
- Application software
- Peripherals or supplies for the above

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Some of the benefits through the usage of advanced imaging technology include:

- Capability of very high speed data capture
- Reading bar codes from smartphones
- Reading e-coupons and loyalty cards
- Item recognition without bar codes
- Capability of recognizing digital watermarks.

Automated bar code scanning and item recognition

Once again, Parnell stressed that new technology is paving the way for previously unidentified applications. The benefits making this possible include:

- Items automatically scanned without human intervention
- Images of every item captured at 30 - 40 frames per second
- Enabling systems to "Learning" items without bar codes and identifying with item recognition software.

Watermarking-the wave of the future

Parnell told SCAN/DCR, There are many aspects of watermarking that make it very interesting, with respect to data collection. CPGs like **Procter & Gamble** and retail chains are very concerned about branding. They want to make their packaging as appealing as possible. With the ability to embed a bar code into the graphics on a label—one that is invisible to the consumer—it opens up their avenues for enticing customers to buy their products. Think of a small item—it can be any retail item. Leaving room for a bar code on the packaging can severely limit the branding space. Watermarking solves the problem."

"With our Magellan line of in-counter imaging scanners, we can read bar codes regardless of the orientation of the product on the counter," the Datalogic leader continued. "Imaging can be used not only for supermarket checkout scanners but in various form factors including kiosks, mobile computers and smart phones to scan watermarks and improve productivity and customer service. It will take time for retailers to migrate to this technology, but the incentives are obviously in place and quick progress could be made with store brands since the retailer controls their own packaging. In some cases, a store with its own line of goods could use watermarking to encourage shoppers to buy its own in-store brand which would likely be more profitable than selling a more well-known name and common brand."

Taking it to the streets

Parnell discussed many of his visionary beliefs at the **NRF** show, held this week. He said getting the word out will require a lot of energy. "We'll need to

set up pilots," he explained. "We'll need to educate our customers, whether in a face-to-face situations or by presenting at trade shows. With improved speed in capturing information, and the software to analyze the Big Data input, businesses will be able to achieve greater efficiencies than ever before. Item recognition and digital watermarking recognition are made possible with advanced imaging."

"We need to let retailers know that this technology is not just for the check-out area," he continued. "It can also be used for itemizing shelves and providing information at the point of decision for consumers. As a bonus, we have integrated other technologies into our scanning systems, such as EAS (electronic article surveillance) and RFID ready configurations, but for now, we believe imaging is where we should be focusing our attention."

Why imaging?

Maybe our subhead should read: Why not RFID? Clearly, much of the AIDC industry and the retail world are banking on item-level RFID as the answer to many in-store and supply chain problems. Parnell said it really comes down to the age-old argument that bar codes are still the least expensive technology for tracking. "Whether you embed the bar code in a label graphic or if it is printed normally, the cost is still essentially free," he stated. "That's hard to compete with."

"Really, all technologies are just enablers...they're problem solvers," he continued. "To enable big data gathering and analyzing requires a number of hardware options, as well as specialized software. We simply believe that high speed processing, lower entry costs, and greater illumination choices make imaging a better choice in many applications."

Follow the leader

As we all know, some retailers are followers and some are leaders when it comes to technology adoption. Parnell says it makes sense to let the early adopters handle the pilots, at this point. But, he also said that almost any application requires some type of partnering, whether it's multiple hardware providers, hardware vendors and software providers, or combinations of many...including the user community.

"Think of everything associated with an in-store pos system," Parnell explained. "You have check-out scanning, but you also have cash handling, bagging, loyalty card scanning, etc. It takes many components to do all that is required. Some major retailers are just sitting back-watching and waiting to move into technology adoption. Then you have the obvious leaders like **Walmart** that are very

good when it comes to innovation and adopting new technology. Walmart is always looking for ways to lower prices for consumers. Because it has so much clout, it can mandate what CPG manufacturers do. They look to technology providers to improve the customer experience. In the grocery sector, **Kroger** is the leader and seeks the best available solution in order to improve the shopping experience.

Parnell went on to say that Datalogic also frequently works with early adopters like **Wegman's** and **H-E-B**. and that they are good partners when it comes to testing new offerings. "Although we are working with in-store automation at the moment, it is important to realize that emerging technologies will need to be integrated into all areas," said Parnell. "This includes logistics, distribution, manufacturing, the supply chain, etc."

Online sales changing the playing field

As Parnell noted several times, everything is aimed at improving the customer experience. He also noted that online sales are the biggest challenge to brick&mortar business models. He indicated that retailers are looking for the sweet spot where online and brick & mortar coexist and multiple channels

can fully satisfy customer needs.

"**Amazon** has done a fantastic job at showing consumers [and other retailers] why online shopping can be a pleasant experience for customers," he told us. "Now, many retailers are allowing customers to order a product online and have it delivered to their local store for pick-up or to their homes. Retailers are spending huge amounts of time and money studying buying habits. In some cases, they are designing their stores to meet the needs of very specific local buying habits."

Closing

As we closed, Parnell said vendors will need to meet the challenges created by online shopping, including distribution, warehousing, and supply chain. He advised the industry to pay close attention to emerging AIDC technology, products and services. He cautions we must not introduce new technology for technology's sake, but rather, we must listen carefully to the voice of the customer and work hard to truly solve their problems.

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