

Don't Walk Away from Just Walk Out

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Retail Mindsteps (def): Key developments that have caused dramatic and irreversible changes to paradigms and world views in the fast moving consumer goods retail industry.

Retail Mindsteps INNOVATION BRIEF



Gary Hawkins has lived his career ahead of the curve, putting him in the right place at the right time to lead the fast moving consumer goods retail industry into the future during a time of exponential technology growth using never-before-available capabilities to innovate the future of shopping.

His expansive industry view and early insight into disruptive technology makes him a sought-after keynote speaker at conferences in the U.S. and around the world. Hawkins is the author of *Building the Customer Specific Retail Enterprise*; *Customer Intelligence*; *Retail in the Age of I*, and *Bionic Retail*, along with the *Retail Mindsteps Innovation Briefs* and *White Papers*. Hawkins lives in Colorado with his wife Heather, and Remington, their Bernese Mountain Dog..

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Can you hear that giant, collective, sigh of relief from traditional retailers as they read about Amazon pulling the Just Walk Out technology from its Fresh stores? Those retailers believing that there is now one less technology that they have to keep up with. Or some other retailers saying "I told you so", believing that it's another sign that Amazon just can't make grocery work.

There have been a multitude of stories and articles about Amazon's failed computer vision initiative. Many experts claiming that the technology was just too expensive, too complex, and unfit for a full size grocery store.

I agree that in the near term it makes sense for Amazon to pull back from the computer vision tech and invest in getting the store, and shopping experience, right. The company's smart carts offer a similar frictionless shopping experience and have the added advantage of being another channel for Retail Media.

But I also believe that in the long term, computer vision offers too many benefits to just walk away from Just Walk Out.

As many of the articles, and Amazon itself, have called out, the technology works just fine for smaller footprint stores. And that is where the technology has already claimed a solid toehold in retail, powering up a growing number of smaller stores. That's where Grabango is claiming success, as they focus on a growing number of convenience stores. And AiFi powering up c-stores and small retail venues at stadiums, arenas, and universities.

Scaling computer vision platforms into larger stores is largely a technology challenge, not a shopper acceptance challenge. From my experience shopping in Amazon stores, and reading of others' experiences, shopper pushback was largely focused on the lag time getting the digital receipt to the shopper after they left the store; in some cases this was taking several - or more - hours. That's unacceptable.

That lag time producing the digital receipt is a result of overloaded computer processing and the need to verify the product put in the basket when camera images don't meet a certain confidence threshold.

Scaling computer vision into larger stores is not just a matter of installing more cameras. The processing power and speed needed grows exponentially as larger stores mean more shoppers and more products that all need to be correctly captured. Faster network speeds are required to move ever-larger quantities of data from the edge to the cloud to ensure getting a shopper's digital receipt to them as they walk out the door, not hours later.

As I wrote about in my latest book, *Bionic Retail*, (LINK) computer processing power, data, and artificial intelligence, are all growing exponentially, constantly accelerating. And we are past the inflection point on those growth curves. What may not be possible today, very well may be possible tomorrow because of this incredible growth.

Some of the more pessimistic articles being written about Amazon's pullback have focused on the 1,000 or so workers behind the curtain that are reviewing video to verify a product picked up by a shopper if the camera image wasn't good enough. While I'm unable to be sure, what Amazon should have been doing is using humans to train the machine learning algorithms through that verification process. Effectively a human telling the machine "yes, that's a Chobani yogurt" or "no, that is a Chobani yogurt, not a Dannon yogurt".

One of the handful of solution providers bringing computer vision tech to market that is not often spoken of is Trigo, an Israeli company that has attracted over \$200 million in funding and is very active in Europe. And I think Trigo is an interesting company to watch.

While its been some time since I checked in with them, my past understanding was that Trigo was using sensor mats on shelves where small products were sold; think small candies, things like Tic Tacs, etc. While cameras were 'seeing' what product the shopper picked up, the sensor mats were providing the verification (instead of a human). Trigo was - and I hope still is - focused on an autonomous machine learning system to continuously train its AI recognition. And I would suggest that Trigo is onto something, otherwise why would retailers like Rewe, Aldi, Tesco, Netto, Shufersal, Auchan, and others be deploying Trigo's tech in an increasing number of stores?

But why does any of this matter? What's the big deal about computer vision, systems like Just Walk Out? Because the technology is capable of providing a multitude of benefits to retailers with physical stores. Benefits like:

- *Labor savings as cashiers are no longer needed.*
- *Reduction or even elimination of shrink.*
- *New store performance scorecards reflecting shopper traffic along with depart, aisle, and category, and purchase, conversion rates.*
- *New measures of merchandising efficacy by linking merchandising activity - endcap displays, signage, and more, to those shopper traffic scorecards.*
- *With evermore sophisticated visual recognition algorithms, systems can provide data around merchandising compliance, a continuing point of contention between retailers and vendors.*
- *24x7x365 out of stock data depending on camera location relative to the store shelves.*
- *Automatic detection of product spills or aisle hazards to minimize slip and fall incidents and the accompanying liability.*
- *More selling space as the space devoted to traditional checkouts can be repurposed for sales.*

Technology never goes away

I think it is rare, if not impossible, to find any examples of a technology that, once created, entirely goes away. Such will be the case with computer vision systems.

Artificial intelligence seems to have exploded out of nowhere in the past year, though AI was first envisioned in the early 1950s when Alan Turing published "Computer Machinery and Intelligence". By the mid 1960s AI research was being heavily funded by the Department of Defense. But ChatGPT, and the other generative AI systems that are taking the world by storm, are only possible because of the dramatic increase in computer processing power.

AI systems for language understanding, image recognition, and reading comprehension, already outperform humans (Source: OurWorldinData.org). By some calculations, computing power for artificial intelligence is doubling every 3.4 months, a rate far faster than Moore's Law. Further proof of AI's rapid advancement: in the beginning of 2017, it cost \$10,000 to classify one billion images using the latest computers. By the end of 2019 it cost 3 cents to perform the same task. (Source: Medium; The future is going to happen a lot faster than the past did. Aug 24, 2020)

AI has - and will continue to - grow in lockstep with the growth of computer processing power.

I don't believe Amazon is walking away from Just Walk Out, they are hitting the 'pause' button while computer processing speeds catch up to what's required to scale the technology to full size stores. And I think that retailers who may now dismiss computer vision tech do so at their own peril..