White Paper

Understanding AI and How it Works

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YOUR CUSTOMERS EXPECT MORE THAN EVER BEFORE, AI CAN HELP

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NATIONAL ASSOCIATION OF WHOLESALER-DISTRIBUTORS

- How AI is changing the face of B2B distribution
- What AI is and how it works
- Why data is so important for AI systems

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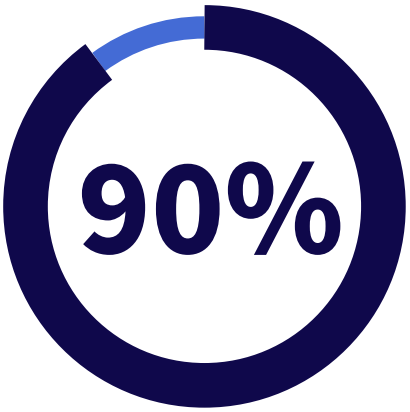
Introduction

Two interconnected forces are changing customer expectations for B2B distributors. Now, the bar is higher than ever before. Distributors that adapt to these changes can gain a decisive and sustainable lead over the competition.

One force is the COVID-19 pandemic, which according to McKinsey forced more than 90% of B2B companies to a virtual or hybridized sales model that includes more reliance on emails, video calls and ecommerce. Close to 9 in 10 decision-makers say that new go-to-market sales practices will be a fixture throughout 2021 and beyond. Distributors that win will turn these changes into an advantage by digitizing their business processes.

A second force is the rise of technology-first distributors and digital marketplaces. The most dominant player here is Amazon Business, the online B2B marketplace launched by the B2C behemoth in 2015. This enterprise racked up $1 billion in sales in its first year and continued growing at an amazing rate. By 2018, Amazon Business recorded over $10 billion in sales. In 2019, RBC Capital forecasted that it would make $52 billion in sales by 2023.

At the center of both these forces is Artificial Intelligence (AI). This technology can help distributors meet these new customer expectations by making their businesses run more efficiently and effectively, as well as enhancing the customer experience across all touch points. If distributors are going to fend off companies like Amazon Business and transform sales operations, they must adopt AI for their own business advantage. First, they'll have to understand AI and how it works. In this whitepaper we will explain why AI is a force that can't be ignored, how it works, and how early movers in distribution can use it to future-proof their business.



90% of B2B companies have switched to a virtual or hybridized sales model that includes more reliance on emails, video calls and ecommerce.

Beyond Digital Disruption: AI Is a Transformative Technology

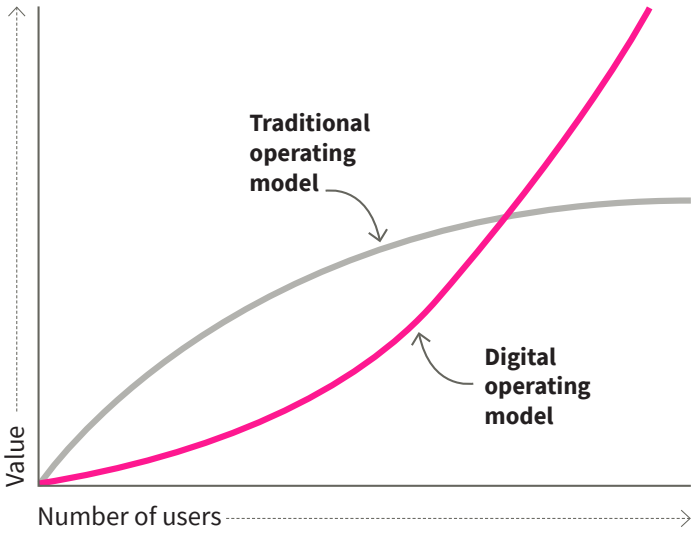
According to Accenture, 84% of executives say they won't achieve their growth objectives without scaling AI. These are leaders of companies that have experimented with AI, tried pilot projects, and are seeing promising results. But they have a long way to go to scale AI to anything like Amazon and other digital disruptors who place AI at the core of their business.

Why is AI a driver of disruption? Because it is, Accenture notes, a general purpose technology that will impact our lives at the same scale as electricity and the internal combustion engine transformed previous generations.

Electricity, for example, did more than light up homes. It made factory electrification and later automation possible. Electricity also led to telecommunications and later the transistor which led in turn to rapid advances in computerization.

The internal combustion engine led to automobiles and ultimately road networks that enable long-distance trucking and logistical networks. It also made the airplane possible and all that implies, including putting humans on the moon. That's a transformational technology working at an exponential scale.

AI-driven companies like those mentioned above outpace traditional counterparts because digital operating models, according to Harvard Business Review, can scale faster and farther than the people- and process-dependent traditional operating models, which inevitably reach a point of diminishing returns. In short, the value of traditional operating models eventually plateaus past a certain number of users, while AI-driven models continue to improve exponentially as more and more users are acquired. The AI-driven digital model can also produce greater scope because it can connect with other digital businesses and their data to create new opportunities and growth.



From: "Competing in the Age of AI," by Marco Iansiti and Karim R. Lakhani, January–February 2020 HBR

What's all this digital transformation worth? McKinsey places the potential value of AI at between $3.5 trillion and $5.8 trillion annually across the global economy. By 2030, McKinsey says, AI could potentially deliver additional economic output of around $13 trillion for a 1.2 percent annual boost to the global GDP.

AI and the Distribution Industry

The impact of AI will be particularly strong for distributors, for three solid reasons:

- Unlike companies in many other industries, distributors already have a ton of data and lots of repetitive activity, the perfect use case for AI.
- Compared to highly regulated industries that handle sensitive personal information, like healthcare, financial services and even retail, data in the distribution industry is under much less scrutiny and presents minimal ethical concerns.
- Due to limited technology being developed for the distribution industry until recent years, there is a large technological leap required of distributors.

What's more, McKinsey points out that the impact of AI is likely to be most substantial in marketing and sales — an area of distribution that is ripe for innovation. And that is why digital marketplaces like Amazon Business — as well as distributors that have adopted AI — pose a disintermediating threat to B2B distributors who stick with the traditional way of doing business.

What Is AI, and How Does It Work?

The most basic definition of AI is any form of intelligence demonstrated by machines. In that sense, AI has been around since the 1950s. However, the technology has recently become a multi-trillion dollar industry due to exponential increases in computer processing power and data storage, as well as breakthrough programming techniques.

Today, AI is a collection of tools and technologies that can be brought together to enable a machine to think and learn like a human. How exactly does that work? Start by thinking about how humans learn, and then apply the analogy to machines. Humans first need examples. From examples they learn patterns. Then they apply those patterns to new examples. AI works in a similar way. The primary difference here is that humans are great when it comes to generalized intelligence and require very few examples to learn, while AI excels at performing specific tasks at scale and requires many more examples.

Consider what a person would need to do in order to successfully build a "complete the cart" function for their ecommerce site. They would need to get deeply familiar with thousands of SKUs within their product catalog, study client order history, categorize products that go together, then decide what items make sense to suggest depending on the products that are in the cart. AI essentially replicates this process, but likely

does it more accurately than a human, and in much less time.

How AI Models are Built

You, and your business, have likely been using AI solutions like email spam filters and GPS navigation to optimize business for years. These solutions use machine learning models, or algorithms, to find patterns in data and produce certain outputs from what they learn. They learn and perform better as they are exposed to more data over time, changing how they process data, identify patterns and make predictions from future data inputs.

The spam filter algorithm, for example, scans your incoming email to look for keywords and source email addresses that match the patterns it knows to be spam. As spammers change tactics, like putting spaces between letters in an email subject line, the spam filter learns to recognize new patterns, getting smarter over time.

Before an AI model can perform its intended function, it undergoes training. There are two types of training, or learning: supervised and unsupervised. For supervised learning, the model is given a set of labeled training data and asked to make predictions from that information. Based on the accuracy of the predictions, the model may be tweaked or given more training data with accurate labels in order to improve its performance. Unsupervised learning, on the other hand, infers patterns from an unlabeled dataset. This type of model doesn't make predictions in the way supervised models do. Instead, it works to understand the data itself and its patterns and groupings.

Deep Learning and Neural Networks

The next generation of AI tools encompasses deep learning, a subset of machine learning. They still gather data, analyze the information to identify patterns and outliers, and perform specific tasks. But deep learning uses "artificial neural networks" that operate on multiple layers, similar to how the human brain functions. Deep learning has drastically improved in performance to the point where it can learn from data alone, without the need for human inputs.

Deep learning models improve exponentially as they get more data, while the more linear classical models eventually plateau and won't gain any additional performance even with more data. Before deep learning, machines were 5 times more likely to make an image identification error than humans. Now, with advanced deep learning, machines are actually 2.5 times less likely to make image identification errors than humans. But to exponentially improve, deep learning models require massive amounts of data to be successful.

As a result, the tasks that many AI technologies perform today can be far more complex. Deep learning algorithms are being used to predict customer behavior, handle stock trades without human intervention, analyze X-rays to identify cancer, and determine whether or a customer is happy or dissatisfied based on tone of voice.

Together, these types of models comprise the AI that you encounter in everyday life, from recommendations on what to buy (Amazon) and what to watch (Netflix), to smart speakers and digital assistants that understand and respond with speech (Alexa, Siri), to search engines that fill in what you are looking for based on the first few letters you type (Google).

It's All About the Data

To improve the accuracy of the recommendations they make, AI solutions need very large data sets that are continually updated. For example, the computer vision system that identifies animals caught on camera in the wild was trained using a database of 3.2 million images.

Data quality is also a key factor in the success of any AI project. Inaccurate, incomplete or "noisy" data — corrupt data caused by random errors, human errors like transposing digits, or programming errors — will produce inaccurate or unreliable results. On the plus side, data engineers are now using deep learning models to clean up poor-quality data, and deep learning algorithms are able to reach extremely high levels of accuracy even with "noisy" data. This is good news for distributors, who often have "noisy" data and worry that it won't work for AI.

Amazon and Netflix have the entire history of their customers' behavior on which to base very precise and accurate predictions about what any one consumer will want to "buy with this item" or watch next. That's true of most AI applications in the B2C space, and it enables AI-driven companies to deliver a hyper-personalized experience.

How B2B Data Differs from B2C

For B2B distributors, it's not so simple. The good news is that distributors have large data sets to work with, much more than they think. However, that data is siloed across multiple internal systems: ERP, financials, CRM, customer support, PIM, ecommerce, marketing, and more, including spreadsheets.

These silos — which map to your customer channels — limit the usefulness of data and how your sales and customer support teams function. Your outside and inside sales reps, for example, don't know what your customers last purchased online or when the latest shipment went out if all they can see is what's in your CRM system.

One more important point of difference: consumers tend to buy one or just a few items at a time, while B2B customers buy large numbers of SKUs in regular or semiregular intervals.

Collecting and Aggregating Data for AI

For distributors to gain value from AI, they first need to aggregate all their data — customer information, firmographic data, product data, transaction histories, sales touches, marketing actions, and so on — into one place for complete analysis. In doing so, distributors can make full use of their data, achieve a

360-degree view of the customer, and unify their sales channels with a single version of the truth.

Distributors tend to have large volumes of structured data, which is typically stored in a relational database. It consists of numbers and text that are organized into fixed fields within a file or record. Think of transactional data and customer data as examples of structured data.

Increasingly, however, unstructured data is being used to glean insights. Unstructured data can be stored in applications or non-relational databases. Examples of unstructured data that distributors have include emails, PDFs, notes from customer support interactions, social media, product description documents, even audio or video files.

When data is aggregated across silos and systems, whether it's structured or unstructured, it is typically replicated from the source system, processed for a specific purpose, and stored in a data warehouse. This is a data management system designed to support business intelligence and analytics. A data lake can supplement a data warehouse by storing a vast pool of raw data that has not been processed or designated for a specific purpose.

Become an Early AI Adopter and Future-Proof your Business

Consider the growing gap between early AI adopters like Amazon and the retailers and distributors that compete with them to see the value of an AI-driven approach. For example, the average Amazon user spends more than 7 minutes shopping and clicks through 9 pages. By comparison, Walmart and Target visitors shop for around 5 minutes and click only 5 pages.

Moreover, Amazon's product recommendations account for 35% of its online sales. Given that the company's online stores made $141 billion in 2019, calling AI recommendations a multi-billion dollar strategy is a bit of an understatement.

With AI, distributors can find gaps in wallet share and predict when a customer is due to reorder an item with a greater level of confidence. And by mining the rich product data available to match related items, distributors can also offer product recommendations through all sales channels. Using these strategies can drive a 5-10% uplift in sales for most distributors. But in order to win and gain a maintainable lead, distributors must beat the competition to market.

A Final Note: The Key to Employee Adoption

The point of AI is to develop smart systems that increase the effectiveness of employees. AI remains a tool that helps your people do their jobs better, with more information about your customers. The biggest barrier to AI adoption is culture, and the key to fostering a culture that embraces AI is training. Be sure the AI vendor you use will provide training to get your employees up the learning curve quickly so they can provide a better, stickier customer experience.

About Proton.ai

Proton.ai was founded in 2018 by Benj Cohen, fourth-generation distributor and Harvard alumnus. Proton is an AI-powered sales enablement platform, purpose built to increase revenue for distributors by helping sales reps and customers navigate the complexities of managing lots of products through multiple channels. Proton helps distributors grow revenue by 5%-10%+ and gain market share.

About NAW

The National Association of Wholesaler-Distributors (NAW) is composed of direct member companies and a federation of international, national, regional, state and local associations and their member companies, which collectively total more than 30,000 employers, with locations in all 50 states and the District of Columbia. NAW-affiliated companies are a constituency at the core of our economy—the link in the marketing chain between manufacturers and retailers, and commercial, institutional and governmental end users. Industry firms vary widely in size, employ more than 5.9 million American workers and account for $5.3 trillion in annual U.S. economic activity.