Tech Takeover: Three Sectors Slated to Benefit from Artificial Intelligence

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Technology has entered a new frontier, as advancements in artificial intelligence (AI) push humanity to unprecedented levels.

E-commerce sales growth in 2017: 9.8%

No matter the name, AI personalities are enhancing the online shopping experience for consumers across a broad spectrum of products. The rapidly rising share of services conducted online, coupled with the convenience of shopping anywhere with an internet connection, has bolstered e-commerce sales growth at an annualized rate of 13.4% over the last five years, reaching an estimated $432.4 billion in 2017. AI’s contribution to the burgeoning E-Commerce & Online Auctions industry (IBISWorld report 45411a) is reflected in several key facets of the technology, and brick-and-mortar retailers have struggled to retain customers as a result.

Product personalization sits squarely at the intersection of AI and e-commerce. For example, just last year, The North Face Inc. began using IBM’s Watson supercomputer via a web-based app to help online shoppers choose the perfect jacket to fit their needs. Watson interacts with customers in a way that closely resembles a human, asking questions about when and where they will use the jacket. It then generates a tailored list among more than 300 online offerings.
Artificial Intelligence (AI)

AI-enabled voice and visual search technologies are also shifting the e-commerce landscape. Amazon.com Inc. has released Echo, a product that incorporates an AI personality called Alexa. The device allows users to shop from select online retailers, including 1-800-Flowers and Amazon itself. While online shopping does not represent the primary reason that consumers use the device, about one-third of Echo owners have ordered something on Amazon Prime at least once. Amazon’s revenue over the past five years has grown at an annualized rate of 24.2%, giving it a formidable 22.6% market share in the E-Commerce & Online Auctions industry. In addition, visual search capabilities lend consumers another option to upend their traditional shopping experiences. Canadian startup Slyce has fashioned image recognition technology to its mobile app, allowing users to snap photos of items they see in public. The app then scans its retail partners’ directories for immediate purchase. Major partners currently include Nordstrom, Express, and The Home Depot.

AI is expected to boost overall e-commerce sales 7.8% over the next five years. IBISWorld anticipates sales will slow as the market approaches saturation. Meanwhile, demand from department stores is projected to decline at an annualized rate of 2.5% over the five years to 2022, despite stores strengthening their marketing campaigns and increasingly offering promotional deals. This is partly because brick-and-mortar stores, such as Macy’s, pay high rent for retail space, and compete with the Warehouse Clubs and Supercenters industry (IBISWorld report 45291). These factors put department stores at a significant disadvantage relative to e-commerce operators, and their decline will likely continue as e-commerce evolves moving forward.

Food service sector

Fast Food Restaurants industry wages as a share of revenue in 2017: 24.9%

For many industry operators in the larger food service sector, automation has long been used to streamline operations and create efficiencies throughout the supply chain. As competition continues to rise within the saturated US market, restaurant operators, particularly those within the Fast Food Restaurants industry (72221a), are steadfastly optimizing their business operations in order to stay ahead of the pack. Furthermore, as wages comprise some of the highest costs for the fast food industry, methods to streamline services in order to pressure wages downward have always remained appealing to business owners. With the rise of affordable computing power and AI, many industries are capitalizing on new opportunities to deploy data-driven approaches to customer service in order to increase sales. More specifically, many operators are implementing automated systems in order to mitigate the rising cost of human labor, especially with mounting local, state and federal pressure to increase the minimum wage.

Over the five years to 2017, absolute wage growth has outpaced revenue growth both within the Fast Food
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Restaurants industry, as well as throughout the larger food service sector, at an annualized rate of 4.9% and 4.2%, respectively, resulting in a slight gain in wages as a share of revenue over the period. This rise has compelled industry operators to double down on automation investment. For example, McDonalds recently announced major technology initiatives, including the rollout of self-serve kiosks in all of its US locations, as well as the development of a mobile ordering system on the company’s mobile app. While these measures aim to diminish the role of the cash counter, the company also announced the introduction of table service in all of its US locations. While seemingly antithetical to the concept of quick service, the company believes that more point-of-sale (POS) options, augmented with increased customer service, are expected to lower lead times and improve overall customer satisfaction, resulting in increased sales. Similarly, major competitor Wendy’s also announced plans to add self-serve kiosks to nearly 1,000 of its restaurants nationwide, while pizza chain Dominos has invested significantly in online and mobile ordering infrastructure in order to eliminate the need to speak with an actual employee.

The use of digital platforms for ordering food is expected to become increasingly popular over the next five years. Through these mediums, consumers are able to customize orders, build profiles and reorder previous meals, which provides companies with crucial data that could assist in timelines for future promotions. Additionally, it could shorten the entire transaction process. In the Fast Food Restaurants industry, wages as a share of revenue is expected to decline from 24.9% in 2017 to 24.8% in 2022, lagging behind revenue as these automatable models are well suited to cut labor costs and streamline operations throughout the industry. Nevertheless, it could also foster a more streamlined and smarter approach to deploying one’s workforce in the form of better service. As the price of computing power continues to decline and data driven approaches become more prominent, automation is expected to continue to promulgate throughout the food service sector over the next five years.

Automotive sector

Research and development expenditure growth in 2017: 2.3%

In recent years, vehicle manufacturers and technology companies have been increasing investment and focus into the development of self-driving cars for the masses. Additionally, in 2016, the Department of Transportation announced a $4.0 billion spending program to accelerate the development of autonomous vehicles.

However, while many of the world’s largest companies are racing to develop the first affordable and mass-produced, fully-autonomous car, steep regulatory, technological and safety challenges remain. Nevertheless, as investment into autonomous technology continues to increase, new cars are expected to be fully autonomous within 10 years, which is very worrisome for ride-share companies such as Uber.
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These developments have spurred ride-share companies to invest millions of dollars in autonomous technology. For example, Lyft has partnerships with General Motors (GM) and Waymo, which is the driverless-car division of Google parent Alphabet Inc. Over the next five years, GM is expected to build thousands of Chevy Bolts equipped with prototype versions of the automaker’s self-driving system, and a large portion of these self-driving Bolts will go to Lyft. Furthermore, other manufacturers, including Ford and Mercedes-Benz, are also considering launching Uber-like taxi services upon deployment of autonomous cars. Consequently, these kinds of partnerships are forecast to bolster vehicle production, benefiting the Car and Automobile Manufacturing industry (IBISWorld report 33611a).

However, as companies within the automotive sector race to self-driving, ride-sharing primacy, one industry is expected to lose out: The Taxi and Limousine Services industry (IBISWorld report 48533). As more people opt for ride-share services, such as Uber or Lyft, demand for taxis or limousines will decline. Although employment in the industry is expected grow 16.0% over the five years to 2022 (compared with the nationwide 7.0% rate), employment is expected to dwindle in the long term due to an anticipated lack of demand.

While new technology will create new jobs, just as it has in the past, the impact of self-driving cars will not be limited to the taxi industry. This new technology will hinder bus drivers, tractor-trailer drivers, people employed in delivery and logistics and many other indirectly related sectors. While the vast majority of the country is expected to reap the benefits of safer and more affordable transportation, there will undoubtedly be significant fallout.
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