

FOOD JUSTICE: HOW TECHNOLOGICAL AND REAL ESTATE TRENDS IN THE FOOD INDUSTRY WILL BENEFIT LOW INCOME COMMUNITIES

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Restaurants both feed and employ low income America. This duality has led some commentators to conclude that the restaurant industry contributes to socioeconomic inequality for two reasons.⁶ First, it has been argued that poor nutrition delivered to low income people through fast food chains impacts behavior, physical health, and mental health. Second, critics maintain that the industry also serves as an employment trap for low income Americans that are not exposed to technological skills needed to compete in higher wage sectors. Technological and real estate trends in the restaurant industry promise to benefit low income communities in the near future. New technologies, including artificial intelligence, robotics, and indoor vertical farming, could reduce the labor and food costs associated with producing food, enabling the restaurant industry to make higher quality, healthier products at substantially lower prices. The burgeoning real estate infrastructure to support virtual kitchens may enable these higher quality food products to be delivered direct to homes in low income communities. Finally, the introduction of AI-driven tools in the restaurant industry can provide higher income and more rewarding jobs for low income Americans without necessarily reducing the total number of jobs available.

Substantial evidence suggests that low income neighborhoods across America are primarily fed by fast food chains, not grocery stores or casual dining chains.⁷ Even when there are grocery stores within driving distance of low income neighborhoods, data shows that limited access to transportation prohibits families from accessing the higher quality food at grocery stores.⁸ The reliance on fast food to feed low income neighborhoods arguably results in diets that are high in calories and low in nutrients, causing disproportionate levels of obesity, diabetes, and other physical disorders in poor communities. Additionally, data suggests a strong correlation between poor diet and mental and psychological disorders.⁹ The physical, mental, and psychological impacts of poor diet likely contribute to stifled academic performance, limited employment opportunities, and job instability.

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⁶ See, e.g., Chin Jou, *Supersizing Urban America* (U. Chicago Press, 2017); Max Holleran, *How Fast Food Chains Supersize Inequality*, *The New Republic*, August 2, 2017.

⁷ Food Research & Action Center, *Why Low Income and Food Insecure People Are Vulnerable To Poor Nutrition and Obesity*, available at <http://frac.org/obesity-health/low-income-food-insecure-people-vulnerable-poor-nutrition-obesity>.

⁸ *Supra* Note 2.

⁹ *Id.*

In addition to highlighting poor nutrition as a perpetuator of poverty, it has also been argued that the restaurant industry traps workers into low wage jobs that do not provide technical training needed to earn higher income in the 21st Century.¹⁰ Historically, teenagers took part time, minimum wage jobs at restaurants to earn extra income and gain meaningful business experience before moving on to better paying jobs. Economic data today, however, suggests that a growing number of Americans, particularly those in low income neighborhoods, continue to earn minimum wage as part time workers in the restaurant industry for a longer period of time.¹¹ While technological progress has ushered in dramatic changes in other industries, the restaurant industry has remained relatively stagnant. In many cases, an employee that worked at a restaurant decades ago would have the skills to work in the same restaurant today. The experiences gained at working at a restaurant today are not providing any meaningful training and skills development for workers to move onto higher paying jobs in other industries. Additionally, because workers are increasingly unsatisfied with restaurant work, turnover is greater than ever before. When workers change jobs more frequently, they are less likely to secure career enhancements.

At Cali Group, we are investing in a family of companies that could enable the restaurant industry to improve the lives of people in low income communities. Specifically, we are seeking to: (1) democratize food by lowering the food and labor costs associated with producing food, allowing production of higher quality food at lower prices; (2) deliver higher quality food to low income communities that could not previously access it; (3) enable low income workers to have increased job satisfaction and self-confidence while receiving “on the job training” for skills that will lead to higher paid jobs in the restaurant industry or other industries; and (4) maintain the total amount of job opportunities available in the restaurant industry while meeting increased consumer demand. While much of this article is focused on America, the technologies that Cali Group is investing have global application and appeal – and are arguably even more relevant for developing economies that suffer from higher income disparity and less knowledgeable and health conscientious population.

New technologies will enable the restaurant industry to make higher quality food at lower prices by reducing both labor costs and food costs associated with food production. The American restaurant industry is now approaching 70% labor turnover.¹² Operators are constantly dealing with termination issues, interviewing and hiring new workers, and training new workers to work different jobs. As a result, the American fast casual restaurant industry has reached an average labor cost of 28.4%, and this is expected to continue to increase.¹³ At Cali Group we are investing in new technologies to reduce labor costs in the food industry. The QSR segment of the industry is embracing self ordering kiosks, which have been shown to reduce the costs associated

¹⁰ *Supra* Note 1.

¹¹ See Economic Policy Institute, *6.4 Million Americans Are Working Involuntarily Part Time*, December 5, 2016, at <https://www.epi.org/press/6-4-million-americans-are-working-involuntarily-part-time-employers-are-shifting-toward-part-time-work-as-a-new-normal/>.

¹² See *Local Restaurant Industry Shows 90% Employee Turnover Rates*, at <https://sf.eater.com/2017/8/4/16072804/restaurant-industry-study-turnover-instawork>.

¹³ See *Food Costs Fell In 2016 as Labor Costs Rose*, at <http://www.nrn.com/sales-trends/food-costs-fell-2016-labor-costs-rose>.

with training staff members to work at the traditional cash register. Cali Group's majority owned subsidiary, POP-IQ, uses AI-trained facial recognition algorithms to increase the speed of kiosk ordering and enable customized interactive experiences between guests and ordering kiosks. Cali Group has also invested heavily in Miso Robotics to develop a suite of collaborative kitchen assistants to automate repetitive tasks in the kitchen. Miso's first AI-driven robot, named "Flippy," has already been commercialized in CaliBurger. Flippy cooks fresh beef patties on the grill and transfers them to an assembly area. Every patty is cooked always consistently and to precision, and the patties are less likely to be contaminated by human born pathogens. Miso will be launching additional robots to automate frying processes, chopping of vegetables, and other kitchen tasks. Kitchen assistants such as Flippy will reduce labor costs. Early evidence suggests that turnover is decreasing at CaliBurger, because staff members appreciate that they no longer need to perform the greasy and painstaking task of flipping patties on the grill. Indeed, they are excited at the prospect of learning new skills associated with "co-botic" working environments, where the robots perform the arduous tasks and humans focus on monitoring the robotic systems and spending more time with guests. More importantly, the CaliBurger experience demonstrates that automation technologies increase output per worker, which reduces labor cost as a component of total sales.

In addition to reducing labor costs and improving job satisfaction associated with producing freshly prepared food and reducing the risk of contamination and health and safety risks for employees and customers, new technologies may dramatically reduce food costs. Spoilage of food ingredients is a key contributor to food costs. In particular, fresh food expires over a short period of time. If a restaurant orders too much fresh food ingredients and the products are not sold, food costs increase. We have been investing in an AI-driven software tool to more accurately predict future demand in restaurants and grocery stores. We can feed an AI algorithm data such as expected weather and temperature, local events and traffic, and social media chatter; the AI ingests the data and makes predictions about food ingredients that should be ordered to address expected demand; linking this to POS to track actual sales will improve efficiency and ensure stock is replenished based on sales. AI-driven robotics might ultimately be used to replace human hands in picking fruits and vegetables on farms. Food consolidation firms such as US Foods and Sysco will increasingly automate their warehouses, using robots to prepare food, cameras to track inventory, and robots to move inventory. Finally, autonomous vehicles will reduce the costs of transporting food.

In addition to food spoilage, general food wastage is at alarming levels in the United States. According to a research study conducted by the National Resource Defense Council (NRDC):

"America does not eat 40% of its food....America throws out more than 1,250 calories per day per person, or more than 400 pounds per person annually. That's a loss of \$218 billion each year, costing a household of four an average of \$1,800 annually. At the same time 42 million Americans face food insecurity – and less than one-third of the food we throw out would be enough to feed this population completely..."¹⁴

¹⁴ NRDC, *Wasted: How America Is Losing Up To 40 Percent of its Food From Farm To Fork To Landfill*, August 2017, at <https://www.nrdc.org/sites/default/files/wasted-2017-report.pdf>.

Cali Group's investment in technology enabled restaurants and grocers will enable data science and analytics required to optimize inventory management, reduce obsolescence, enhance creativity through new recipes, and provide for timely and efficient secondary markets (including charities).

Longer run, indoor vertical farming could further reduce the costs of high nutrient food inputs. Indoor vertical farming utilizes hydroponics, LED lighting, and climate controls to grow fruits and vegetables on the walls of city buildings. Plenty, a start-up based in San Francisco backed by SoftBank and Amazon founder Jeff Bezos, has demonstrated that it can grow in a warehouse "vegetables and fruits" that are as good or better than what is currently available on the market. Plenty uses smart sensors to precisely control environment factors and optimize growing conditions. In theory, vertical farming could produce lower cost and higher quality, organic food by eliminating the need for fertilizer, transportation, storage, and distribution, as well as reducing spoilage and wastage. In 2019, Cali Group will begin experimenting with indoor vertical farming.

The lower labor costs and lower food costs resulting from deployment of new technologies in the food industry will enable higher quality food to be produced at lower costs. We believe that fast food chains might seek to take advantage of these technologies to further their goals of improving the quality of their offerings. For example, McDonald's has elected to remove artificial preservatives from various products; and in 2017, McDonald's announced a global initiative to no longer serve chicken treated with antibiotics.¹⁵ Taco Bell has introduced the lower-calorie Fresco menu, the high-protein Cantina menu, and a vegetarian menu certified by the [American Vegetarian Association](#). Taco Bell now boasts of a 15% reduction in sodium across all of their product offerings.¹⁶

While efforts by fast food chains to improve the quality of food offerings are certainly a welcome benefit for low income neighborhoods, meaningful food justice will require a new paradigm for eating in low income communities. Consumption of freshly cooked vegetables and fruit will have a much greater impact on health profile than consumption of chicken nuggets without artificial preservatives. Casual dining restaurants adopting new technologies could be in a position to sell their products at lower prices that can be afforded by lower income neighborhoods, but how can these food products physically reach the inner cities? We believe that the answer lies in another trend, which could radically change the build out and occupancy costs in the restaurant industry. Cali Group co-founded and has been investing in Kitchen United, which is transforming industrial warehouses into fresh food production facilities. The kitchens in these warehouses can be used by restaurant chains to mass produce food that can be delivered by various delivery services direct to homes. Instead of having to build new restaurants in inner cities at substantial costs, casual dining restaurants in the future will be able to occupy KU facilities without any upfront costs and with low occupancy costs to expand their product offerings to lower income communities. These chains can easily price discriminate: serving the same products in high income neighborhoods and low income neighborhoods at different price points and having

¹⁵ See Geoffrey Mohan, *McDonald's Expands Its Move Away From Antibiotics In Poultry*, LA Times, August 23, 2017, at <http://www.latimes.com/business/la-fi-antibiotics-mcdonalds-20170823-story.html>.

¹⁶ See Monica Watrous, *Taco Bell Making Menu Changes In 2017*, Food Business News, January 3, 2017, at <https://www.foodbusinessnews.net/articles/8707-taco-bell-making-menu-changes-in-2017>

profitable (but different) margins on each. The costs of using these “virtual restaurants” to supply lower income communities will substantially decline in the future if autonomous vehicles begin to deliver food.

Separate from enabling access to higher quality food in low income neighborhoods, we believe our investments in food technology will also give members of low income neighborhoods the opportunity to gain skills and self confidence that can be used to earn higher incomes in the future. At CaliBurger, for example, we have demonstrated that staff members that were previously flipping patties on the grill can be retrained to work with Flippy. These staff members have learned basic principles for working with AI-driven robotics, including start-up procedures, monitoring diagnostics systems, and emergency protocols. This “co-botic” experience will be useful in a variety of new, higher income jobs that require human / robotic interaction in the restaurant industry and other industries. Additionally, early anecdotal data suggests that the deployment of automation systems in the fast food industry will increase job satisfaction and confidence. At CaliBurger, we have changed the title of members of our kitchen staff to “Chef Techs”, and we market job openings as positions in “the high tech food industry” (instead of “fast food industry”). We expect technologically advanced restaurant environments will allow employees of firms investing in automation to take more pride in their work and arm them with greater confidence as they seek to secure higher paying jobs in the future.

Some commentators have expressed concern that automation technologies will reduce jobs in low income communities. If our thesis is correct that automation platforms will reduce turnover and increase productivity, labor costs will decline in a restaurant industry seeking to meet increased demand without any job elimination. CaliBurger has publicly maintained that it will not cut the number of workers at any location deploying robots; rather, it will transition staff from the tasks that are most undesirable such as patty flipping and frying to new tasks such as explaining the firm’s new facial recognition system to guests as they approach self ordering kiosks. Not all restaurant chains will follow CaliBurger’s example; we acknowledge that there is a possibility that some chains use automation to reduce the total number of workers in the restaurant. To the extent this occurs, there is reason to believe that new employment opportunities created by the upcoming wave of automation will dwarf the jobs that are eliminated. While beyond the scope of this article, we expect automation to spawn new sectors of employment ranging from robotic hardware maintenance to robotic insurance. Indeed, history is replete with examples illustrating the impact of automation on net employment in America. In 1800, 90 percent of working Americans were employed by farms. Time and again, automation has resulted in new industries with jobs that are higher paying and less physically and psychologically stressing on American workers. The technology revolutions that have transformed the automotive, media, and other industries are finally catching up in the food industry.

At a global level, food and technology are at the beginning of a significant and long-term thematic convergence. Technology in the broader food industry is a “must” for better quality and nutrition for all, reduced healthcare costs, less spoilage and wastage, more productive farming, better supply chain logistics from farm to table, a re-skilled and re-tooled labor force and many other positive benefits. In 2019, the authors will be launching a private equity fund, affiliated with Cali Group, to invest globally in food technology ventures and related companies that can serve as platforms for technology enabled and data-science based execution.

