

## Foodservice and the Art of Industrial Engineering

Eight steps to optimize your operation's store design, labor and menu

By Juan Martinez, cofounder, Profitality

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ou may have read recent numbers from The NPD Group that showed c-store visits declined in the fourth quarter of 2013. You can blame it on the polar vortex, but instead of making excuses, I suggest that c-stores use such news as a rallying battle cry and motivation to go after a larger share of stomach.

There is no doubt in my mind that c-stores can compete well with restaurants and beat them at their own game. And the market has taken notice. A recent report by Sandelman & Associates on the top 25 insights over the past 25 years in foodservice includes Sheetz, which in its stronger markets has been able to achieve as many as one in 20 QSR lunch occasions.

And a recent study from Technomic mentions that more than half of consumers say they have purchased prepared foods from c-stores. That is not to be scoffed at. The study also found that consumers would visit c-stores more often if freshness and quality, along with décor and atmosphere, were improved.

The best way to steal share of stomach from res-

# 25%

**Potential improvement of peak hourly throughput by using industrial-engineering practices in your foodservice operation.**

taurants is to make it easier for your employees to deliver the brand by optimizing all the operating and investment parameters. If you take an "employee-centric" approach to design and make it easier for your employees to deliver the customer experience, sales and profits will follow.

What follows are eight steps to help increase your share of restaurant visits by optimizing your design, labor and menu.

### **Step One: Develop an MTO Offering**

Just the fact that you are assembling products to order will raise the quality perception of your foodservice program. Over the past decade, fast casual

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has been the most successful segment in the restaurant industry. Inherent in this segment is assembling items to order. This may or may not include cooking or finishing items to order; that depends on the concept's level of service.

The pizza segment is the latest to adopt the made-to-order operational style. A large number of fast-casual pizza concepts are expanding across the country—all touting bake times of 5 minutes or less.

## Step Two: Open Up the Production Area

In addition to making the concept pure and real in the eyes of customers, this step is almost a must with today's consumer—especially millennials. Visual production is a trend that is here to stay. Take a quick look in the marketplace and notice the number of concepts that have opened up their assembly lines.

Fast-casual success story Chipotle, for example, does not cook any food to order, but a kitchen serves as the backdrop to the prep table, with employees sautéing aromatic meats just steps from the ordering line.

## Step Three: Mind Your Grab and Go

Make sure that you are conveying freshness in your hot and cold grab-and-go offerings. The way to do this is not only to communicate that the product is made fresh through effective signage, but also show the customers that you are actually producing it right there in an open kitchen.

Open kitchens can be a scary proposition for some, because it converts that back of house to a middle of house, creating some customer sight challenges. But like it or not, this is a strong way to drive a higher level of freshness perception for the grab-and-go offering for those consumers who are pressed for time but still want to be assured your product is fresh.

If you don't buy into the fact that grab and go can drive both quality and sales, take a look at the likes of Au Bon Pain and Pret A Manger. The sales and peak throughput capacity at both of these concepts can reach industry-leading sales per square foot metrics—driven mostly by high-quality grab-and-go products.

## Step Four: Manage Labor Optimally

In most concepts, labor is either the first or second most expensive line item, after food cost. And due to the efforts of many legislators, this is about to get worse. Many restaurant concepts schedule and manage labor as a financial metric, providing labor based on what the restaurant can afford, rather than the labor that they should have to drive sales and customer hospitality.

The best way to manage labor is to develop schedules based on the actual "work content" it takes to produce the menu, developing standard times for each activity and creating schedules based on these—including when the prep for grab-and-go items happens. One idea is to use the shoulders of the peak hours to do the prep for grab-and-go and other items. This will help manage labor costs better and give employees the longer shifts that they typically desire. Considering that most of the day a concept is at non-peak periods, there should be plenty of times in the schedule to get this type of work done.

## Step Five: Simplify Operating Procedures

Develop operating procedures that are efficient and simple to do and that are conducive to consistent execution of both the menu offering and future menu

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### Blending system

Vitamix

[www.vitamix.com](http://www.vitamix.com)

The Modular Blending System is an automated ice, purée and blending unit providing fast, hands-free execution in less than 30 linear inches of counter space. Able to be operated with one or two blenders and with or without automated pitcher rinsing, the unit can be paired with The Quiet One system for sound reduction.



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### Food merchandiser

Hatco Corp.

[www.hatcocorp.com](http://www.hatcocorp.com)

The Hatco Heated Xenon Merchandiser features Xenon lighting to create quality illumination for hot-food holding, according to the company. It features hinged glass side panels that swing out for easy cleaning, as well as a thermostatically controlled, hard-coated heated base shelf and optional indicating temperature control.



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### Coffee brewing system

The Wilbur Curtis Co.

[www.wilburcurtis.com](http://www.wilburcurtis.com)

Winner of a 2014 Kitchen Innovations award, the Curtis Wireless Freshness Monitoring System (FMS) tracks time and volume from Curtis Thermal FreshTrac units and coffee brewers. It collects data from as many as 100 sensors for soups, foods and other beverages, and relays information wirelessly to a single interface.



# Circle reader service number on reply card

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innovation. You might have read recently about the negative service impact on several major quick-service and fast-casual concepts due to the growth of their menus. As you are developing new menu items, make sure this is done in an efficient way, considering not only the food cost but also the labor requirements needed—both prep and guest service. We call this efficient menu innovation.

## Step Six: Streamline Facility Size and Investment

When the time comes to embark on a new prototype design, start with a 1-square-foot facility and have it grow based on the pieces needed in the plan. What this method suggests is that you don't start with a size in mind, but rather with the pieces you need to drive the menu items and the customer hospitality level. You are letting the resource requirements of your menu and service level dictate the final size of the facility.

Part of this step includes doing capacity analysis for all of the resources needed in the concept. Not only will following this methodology reduce the capital cost, but it will also reduce the labor requirements, because the shorter the distances the employees have to travel, the less time it will take them to get the job done. Be careful to not make it too small; end up with the right resources, in the right place, at the right time.

## Step Seven: Apply the Right Equipment and Technology

Equipment and technology suppliers often feel that they need to develop devices that are very sophisticated, making them too complicated for operators to use. Likewise, operators feel that the better the toy, the better they will do. It's as if we are all trying to get the employee to the moon, and all he or she needs is to drive home. The technology goes unused and the concept ends up paying more than needed.

Understand the needs of the concept when it comes to technology applications and follow a "keep it simple" mentality. Do your analysis and research carefully and keep in mind that sometimes less is more.

## Step Eight: Apply the Right Analytical Design Techniques

To help you optimally apply the prior recommendations and objectively determine what you need, consider applying the right analytical processes inherent in the principles of industrial engineering and ergonomics.

► **Time and Motion and Work Sampling:** This helps you understand the efficiency of your workforce and define the issues that are inhibiting your employees from delivering better service and product. For example, track what your employee is doing and categorize it into value-add or not. You can similarly follow equipment cycles, customer service and product holding, among many other areas. The key is to quantify the level of efficiency to be able to provide an objective measure that can drive change.

► **Process Mapping & Facility Analysis:** Such an analysis allows you to understand in detail each of the steps required to deliver each menu item to the guest and create the foundation for possible process re-engineering that will drive a higher level of efficiency. Too much resource is financially wasteful, while too little of any resource can inhibit a higher level of hospitality by creating a bottleneck.

► **Forecasting & Regression Analysis:** This tool helps define how much of any facility resource is necessary to meet the needs of the business and eliminate investment waste. While forecasting can help create a projection of what is expected in terms of

## Who's Eating What in 2018?

The U.S. population is changing, and generational shifts will have a major impact on the country's eating behaviors over the next five years, according to a new study by The NPD Group that presents a five-year forecast for more than 200 in-home food- and beverage-related behaviors.

The influence of boomers and older consumers on eating patterns will fade as their households and populations shrink, and the impact of generation Z (ages 0 to 23) and millennials (ages 24 to 37) will significantly increase, according to "The Future of Eating: Who's Eating What in 2018?"

Generation Z and millennials are driving changes with their approach to food choice and preparation, the study found. These generational groups want more involvement—not necessarily more complexity—in preparing their food and meals, particularly at breakfast. Breakfast foods that are perceived to be fresher and require more prep or cooking, such as eggs, hot cereal and center-plate proteins, are projected to grow by 8% over the next five years.

The tastes and choices of U.S. Hispanics, which make up a large percentage of the generation Z and millennial groups, will also continue to grow in importance. The study forecasts the consumption of Hispanic foods, excluding frozen, to increase by 7% over the next five years among U.S. Hispanic millennials. This group's preference is also for foods that are fresh and natural and that enable the cook to control the flavoring of the end product.

The baby boomer generation is aging, considering retirement, becoming empty nesters and developing health ailments, all of which are typically associated with major changes in how food and beverage consumption is approached. This group will be less driven by the latest fad and more by what they need to sustain their health and lifestyles.

sales, regression analysis can be applied to define the relationships between yearly sales, peak sales, menu production requirements and equipment needed. Both of these techniques are part of the operations research tools that industrial engineers use.

► **Physical and Cognitive Ergonomics:** A couple of examples in this area include reaches to equipment located above, below and behind the employee, as well as the line of sight to the products on workstations.

Other techniques include computer or mock-up simulations, operations research and queuing analysis. These techniques can provide the retailer with ways to validate the different design options under a controlled environment, providing a way to quickly test options under consideration.

Why bother with any of this? The c-store that can drive a higher level of efficiency—of menu, labor, design and equipment resources—will become a daunting competitor to restaurants and beat them at their own game. ■

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