CHALLENGE

To rise to the evolving demands of a global market.

SOLUTION

McDonald's operations research team uses JMP® to gather historical and current data and predict future trends, and to present findings to internal clients around the world more efficiently and effectively.

RESULTS

By predicting changes in local market conditions for each geographic region, McDonald's Worldwide Restaurant Innovation team builds efficiencies into its operations around the world.

McDonald's makes delicious discoveries with JMP®

Adding predictive analytics to the menu increases collaboration and enhances the customer experience

When Ray Kroc opened his first McDonald's restaurant on April 15, 1955, in Des Plaines, IL, a hamburger cost 15 cents; a root beer, a dime. First-day sales were $316.12.

In 1958, McDonald's sold its 100 millionth burger. The following year, the 100th restaurant opened in Fond Du Lac, WI. The Big Mac came along in 1968, the Quarter Pounder in 1973, the Egg McMuffin in '75 and, well, you pretty much know the rest: "Over 99 billion served."

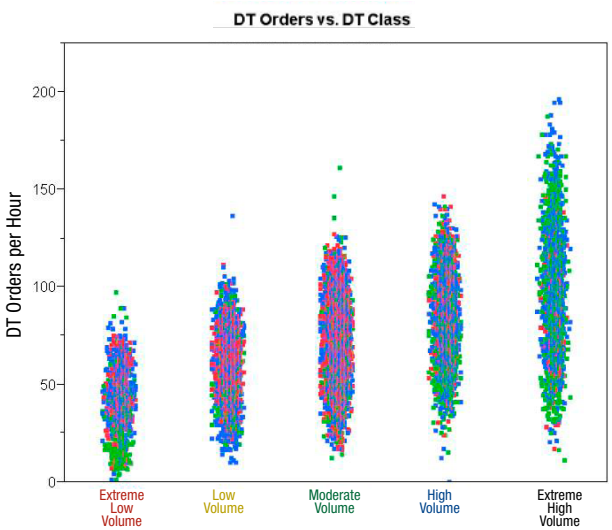
Today, McDonald's has more than 31,000 restaurants in 118 countries, serving more than 58 million customers each day. Some things have remained the same over the years – the addictive quality of those golden fries, for example – while other elements continue to evolve. The menu has expanded to reflect more sophisticated and health-conscious tastes, and the drive-through (introduced in 1975 in Sierra Vista, AZ) is consistently increasing its share of sales in the US.

Who could anticipate success like this? McDonald's could.

Mike Cramer's job at McDonald's is to anticipate and monitor trends, identify and examine any opportunities in operations, and advise store owners and others within the corporate family on how to continuously enhance customer service. Cramer is McDonald's Director of Operations Research for Worldwide Restaurant Innovation, and among his essential, everyday tools is JMP statistical software from SAS.

"JMP helps people focus…. It allows you to keep people visually engaged."

Mike Cramer
Director of Operations Research for Worldwide Restaurant Innovation



Graph Builder is among Mike Cramer's favorite JMP features because it allows him to easily modify a graph or construct a new one.

"I go in and find the clues and uncover the story. Then I can easily relate that story."

Mike Cramer

Director of Operations Research for Worldwide Restaurant Innovation

Like a concept car

Cramer and his colleagues are responsible for helping design and develop McDonald's restaurants worldwide. In doing so, they must consider current operating conditions and anticipate future ones.

The McDonald's "operating platform" is everything the customer experiences from the moment she enters the parking lot until she leaves. "It's the equipment, information systems, job designs for the crews, the man-machine interface," Cramer says. "It's everything associated with that experience for both customers and employees."

In the past, decisions regarding different aspects of restaurant operations – building design, training, etc. – were delivered from individual silos. About six years ago, Senior Vice President Ken Koziol initiated a more collaborative and holistic approach to innovation.

"McDonald's was built on a strong foundation of a core menu that we took around the world, but we need to make sure we are more locally relevant," Koziol has said. "Taste profiles and desires are changing."

In confronting this reality, says Cramer, "We started with a clean sheet and identified our design criteria. We then looked at technology competencies and how things were developing for the future. For example, we identified how people were ordering in today's environment and how we thought they would in the not-too-distant future."

McDonald's has 10 markets that comprise the majority of its business, and Cramer's team helps each of those markets adopt and build migration paths to meet each one's particular cultural patterns.

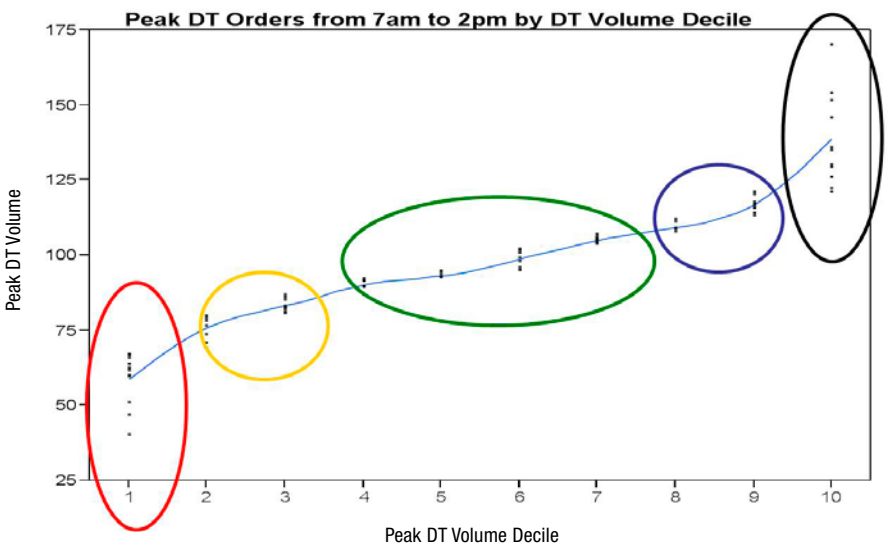
"In Japan, for example, they use their cell phones to select and pay for the subway system and with vending machines," Cramer says. "They do it every day. We saw that four or five years ago, and saw it as a future trend."

On the other hand, he says, Japanese consumers don't tend to ask for customized orders – extra pickles, hold the onion – so little emphasis is placed on allowing for these requests.

Cramer compares the design of a market's operating platform to building a concept car: "You go out and identify the design criteria and develop the concept car, and then you reverse-engineer it."

The operations research team also works at breaking down legacy barriers. Inaccuracy – perhaps not getting the right sauce when you order McNuggets – is an example of such a barrier.

"We've worked very hard at putting in place systems to improve on that – physical, information and monitoring systems – to help make sure you get that sauce. So our three main areas are growth strategies, the concept car migration and legacy barriers. That's our world. That's what we do."



Mike Cramer uses JMP to break down order volume data by decile and to look for similarities, which he has identified with the colorful ovals.

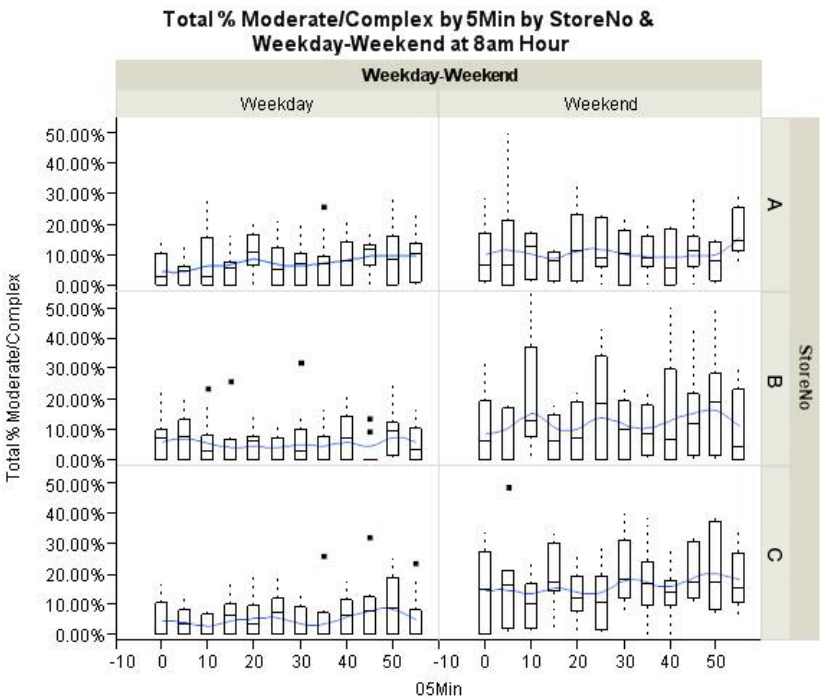
The test before deployment

Cramer has been using JMP for about four years, impressed immediately by its strong visualization capabilities. "I had been struggling with communicating statistically relevant topics to audiences that had limited exposure to statistically oriented problems," he says. "I thought JMP might bridge the gap. I was pleasantly surprised with how well it was structured and how easy it was to use."

However, before deploying JMP, Cramer put it to a test. He gave it to three colleagues, one of whom was an expert with high-end statistical software, one who was of intermediate level and another who had no statistical background. He gave them each an assignment with exercises and, he says, they "all passed with flying colors."

The beauty of predictive analytics

Operations research falls into three categories: predictive modeling (projecting future operating conditions and testing potential designs to make the best possible prediction of how things will play out), rapid validation (ethnography and video analysis of interactions within the stores, toward understanding how those interactions might be improved), and predictive analytics (gathering historical and current data and then projecting it into the future). Currently, predictive analytics is where JMP comes into play.



This trellis view created with Graph Builder summarizes performance data of a dozen time intervals split by two grouping factors, weekday-weekend and store number.

"We do as much analysis and mining of that data as possible," Cramer says. Using JMP's visualization capabilities, Cramer's group is increasingly collaborating with, for example, growth strategists from one of McDonald's major markets.

"In the last three years, I've been able to help a lot of people better understand their own data. And then through that awareness make tremendous progress, without a lot of work, in helping them see things from a different point of view."

Graph Builder is among Cramer's favorite JMP features because it allows him to easily modify a graph or construct a new one with just a couple of clicks and drags of the mouse. "I thought that was really brilliant," he says. "It's so easy."

In general, Cramer says, "JMP helps people focus. You can easily grab things, just by pointing and clicking. It allows you to keep people visually engaged." Using JMP, he plays detective: "I go in and find the clues and uncover the story. Then I can easily relate that story."

How to present findings

Not surprisingly, Cramer has used JMP to improve processes within his own group. One of his goals, he says, was to present information interactively using JMP, forgoing PowerPoint.

Cramer says you can't anticipate all of your clients' questions in advance, but for presentations, you can be well prepared, you can bring your computer, and you can have a solid data set.

"We generally know a lot of the questions in advance, but not all of them," Cramer explains. "Typically we would call a meeting and then get asked those questions we didn't anticipate, and we'd have to go back, do some more work and then get back together. We'd lose a lot of time in that process."

Now, rather than going back and forth as input is incrementally gathered, a design of experiment meeting is held, followed by an interactive meeting, and then it's time to take action.

"We offer answers to questions on the spot."

Recently, for example, Cramer's team met with representatives of the US market who wanted to further examine how their drive-through business was going to affect growth."We did a predictive analytics assignment using an historic sample of data and a projection, and were able to show them how that was going to influence different regions of the market," Cramer says. "They reported to the president what they learned, and we're going to take action on that."

Cramer says he urges his colleagues to become fluent with JMP's journal and its graphics capabilities, which allow them to illustrate a finding several different ways and better underscore the message.

"This way we're saving an incredible amount of time, and so, of course, we're saving money. And we're teaching statistics behind the scenes," Cramer explains. "It's been a great success."