

The Dish



Issue 4:
The Format
Evolution

iff



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The Format Evolution

It all started with a simple powder that could be poured into a compartment of an automatic dishwasher. Now, the detergent format choices are plentiful – a direct response to consumer habits, performance expectations, and sustainability priorities. While the category has been dominated by traditional formats, such as powders, liquids, and tablets, innovative solutions continue to emerge to keep pace with the fast-changing market.

Today, advancements in dishwashing appliance technology, the influence of younger buyers, shifting regulations, and other factors are driving the emergence of new formats. Still, format preference is a personal choice, often informed by lifestyle, habits, convenience, affordability, and more.

IFF conducts research on the newest trends and attitudes shaping behaviors, measures the effectiveness of its enzymes in varying formats, and continually innovates to help our customers confidently evolve their portfolios to address consumer priorities.

The Detergent Lineup

There's no one-size-fits-all when it comes to cleaning dishes. The marketplace continues to evolve, expanding from powders to unit dose packaging that are optimized so ingredients work together. That's why IFF's dish enzymes are formulated to work with a variety of detergent options. Here's a breakdown of some of the different types of dishwasher detergent formats:

POWDERS

Original format for dish detergent, granules can be poured into cup or packet for easy dispensing

UNIT DOSE

Single serve, pre-measured formats, such as tablets, multi-chamber capsules, gel packs, and sheets

LIQUID/GELS

Easily dissolves, convenient for dose control; less stable for enzymes due to water content



TYPES OF UNIT DOSE

TABLETS

Smaller, compacted, made from pressed powder that reduce packaging and transport impact

MULTI-CHAMBER CAPSULES

Combines powder, gel, and/or liquid in concentrated doses for optimized cleaning

ALTERNATE FORMATS

Biodegradable film, waterless sheets, and concentrated doses that minimize waste

A Look at Regional Preferences

While consumer habits play a large part in the types of dish formats people buy, where you live can also have an impact. Regional variables, such as dishwasher model, the manufacturer's recommendation, preferred cycles, and other machine-related options, can influence which formats are most preferred. For example, dishwasher manufacturers Whirlpool and Bosch recommend using certain products depending on the circumstance, but consumer habits have an even greater influence on behaviors, often contradicting recommendations.

Detergent formats most often used by region:

UNITED STATES

Liquids & gels

30%

CHINA

Tablets

60%

AUSTRALIA

Tablets

49%

EUROPE

ITALY

Multi-chamber capsules

39%

SPAIN

Multi-chamber capsules

41%

GERMANY

Tablets

67%

FRANCE

Tablets

53%

UNITED KINGDOM

Tablets

41%

TURKEY

Multi-chamber capsules

48%

A Sustainable Solution?

Sheets are a new format launched in recent years that are gaining popularity. Sheets are slim, biodegradable, and waterless. But will sheets be the next breakthrough format in dish? Sheets have emerged as a promising new format in Europe. But when IFF conducted a comparison test of an EU sheet brand on tough stubborn stains using protease (on egg yolk and minced meat) and amylase (on pasta and mixed starch), the format demonstrated inferior cleaning performance compared to all-in-one tablets and pods. A variety of factors likely contributed to the results. Sheets have limited surface space to hold the enzyme granules, which may limit the effectiveness of the product on certain stains. Also, alkalinity affects how the protease enzymes perform and the pH during the main wash with sheets was too low. Based on these findings, IFF can guide our customers on how to improve sheet formulations to maximize the benefit of our enzymes and advise them to educate consumers.

Comparison of sheets to other formats:

ADW Formats Performance Test

WASH CONDITIONS
IKW, GSL2, 45°C, 8'hold, 21°GH

TECHNOLOGIES
Protease, Amylase, Bleach



RETAILER BRAND ALL IN ONE



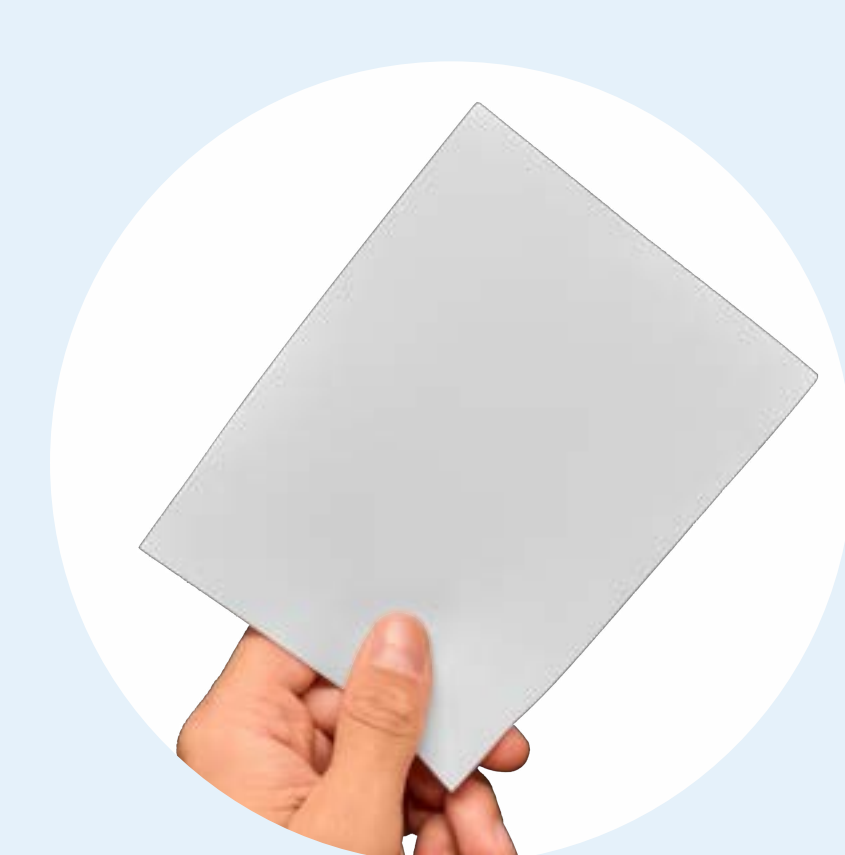
RETAILER BRAND CLASSIC



GLOBAL BRAND HIGH TIER CAPSULE



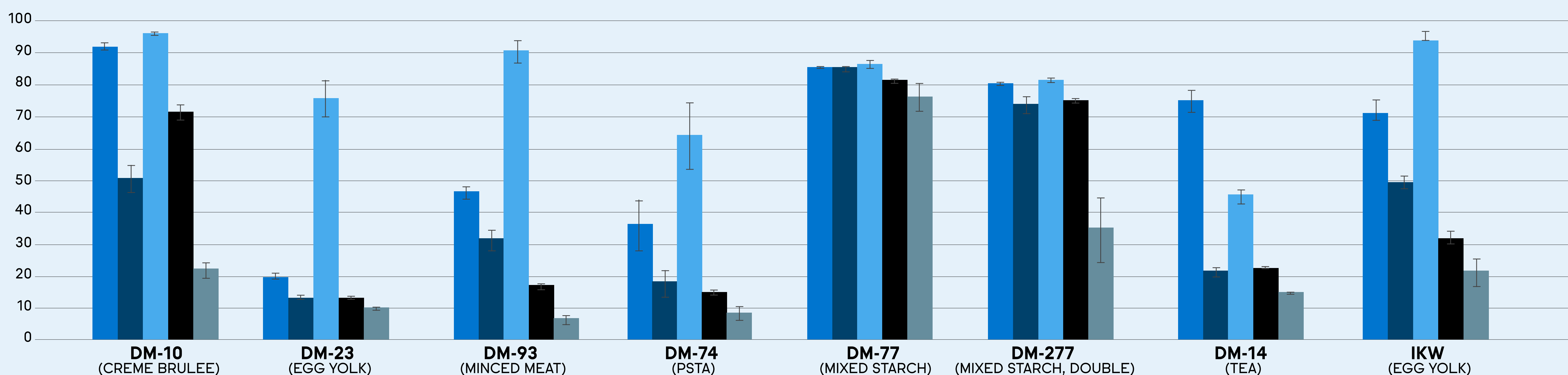
GLOBAL BRAND ALL IN ONE GEL



DISHWASHING SHEETS

All Soils

■ RETAILER BRAND ALL IN ONE
 ■ RETAILER BRAND CLASSIC
 ■ GLOBAL BRAND HIGH TIER CAPSULE
 ■ GLOBAL BRAND ALL IN ONE GEL
 ■ DISHWASHING SHEETS



“A product that has good alkalinity during wash boosts enzyme performance, especially on protease sensitive soils like egg and meat.”

Steven Lawant,
Application Scientist



Pre-Rinsing Can Mask Poor Performance

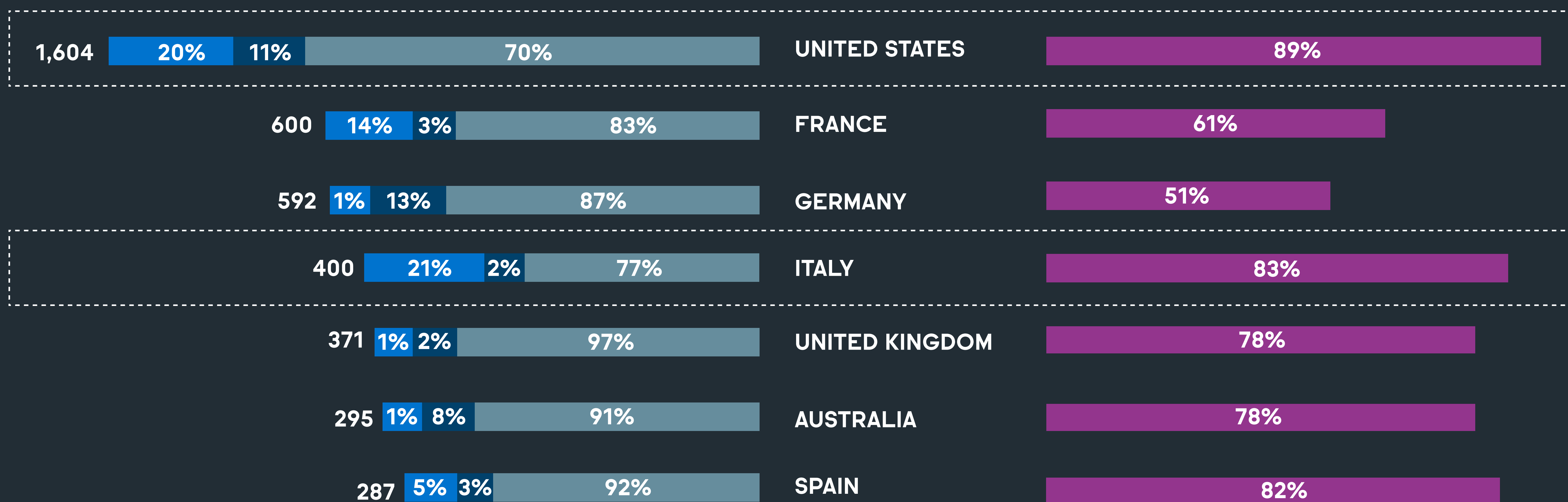
IFF supports dish manufacturers efforts to increase consumer awareness that dishes do not need to be pre-rinsed. But some habits are hard to break. This persistent routine minimizes the performance differentiation between gels and other detergents. And it's likely a factor as to why the dish format still has a 20% market share in the United States, despite studies that show performance gaps on stubborn stains. For some consumers, one or two negative experiences in the past with an alternate format like a powder or tablet not dissolving prompted them to try gels. And since the dishes are pre-washed, it appears as though the gel is successful. But gel formats contain high water content, which presents challenges such as instability and degradation for high-performance ingredients like enzymes. There's also a common misconception that gels are more sustainable because they don't contain bleach. While gels are bleach-free, liquids can contain up to 30% water compared to a tablet or unit dose which has about 6%.

Gels Are Popular with Pre-Wash Habit Consumers

■ LIQUID ■ POWDER ■ TABLET ■ PRE-WASH HABITS

AUTO DISH MARKET SIZE BY COUNTRY
(USD Millions % of region)

PRE-WASH HABITS
(% of response)



Source: IFF Consumer Habits 2022, 2024

“Pre-rinsing habit mitigates detergent brand differentiation. If brands can convince consumers to stop pre-rinsing, then consumers are more likely to notice which detergents perform best.”

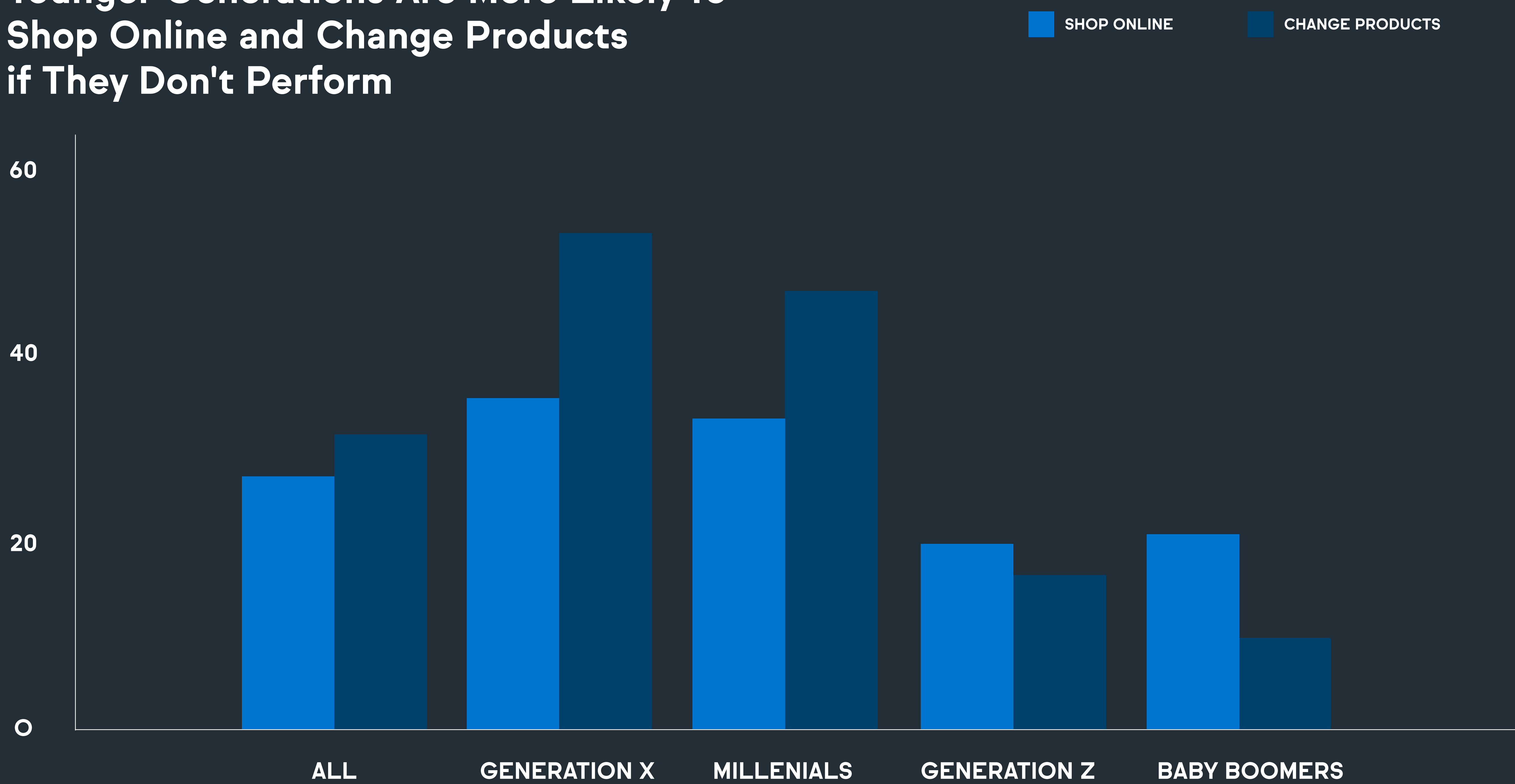


Marvanne DeClerck,
Regional Commercial Director

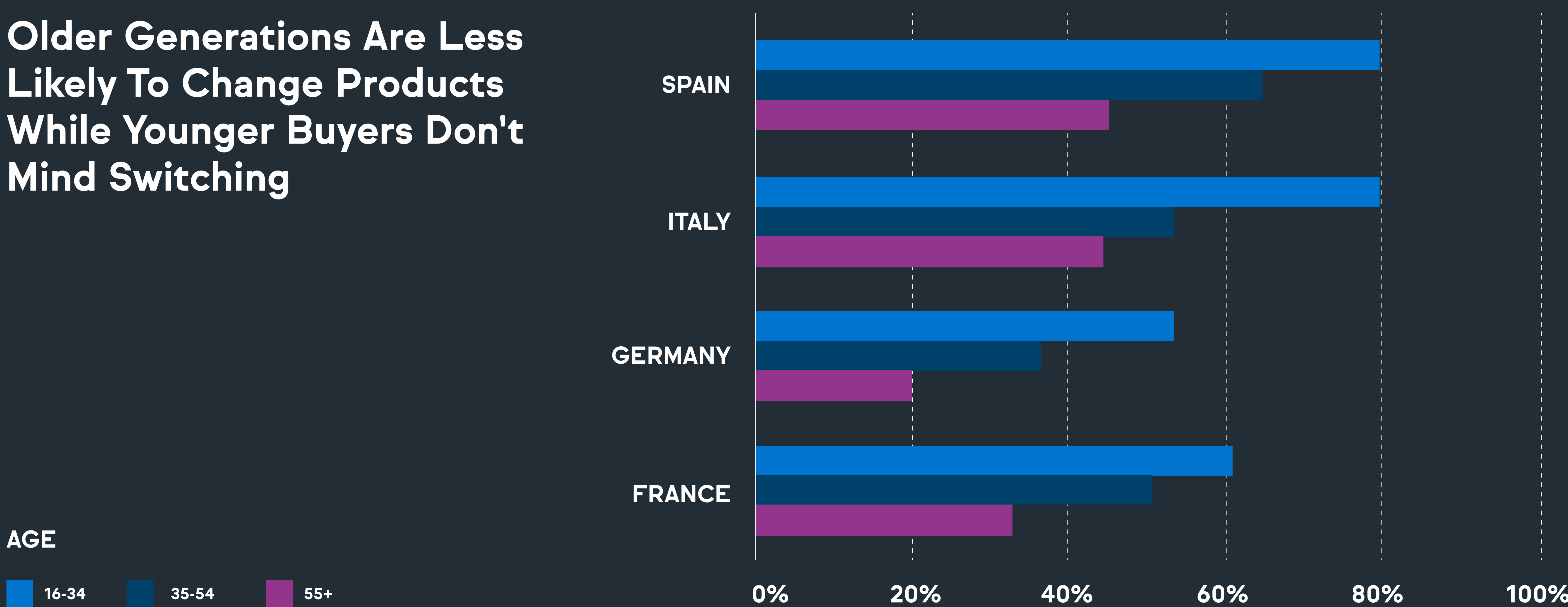
An Emerging Influence

Younger consumers are helping to drive some of the newest innovations in the industry. They are often motivated by sustainability, performance, and convenience. For instance, they're willing to spend more money on premium products that contain eco-friendly materials. They crave a variety of formats and brand affinity is not a priority since they're still experimenting. In other words, they will change dishwashing products if they think it is not meeting their expectations. Dish detergent manufacturers have an opportunity to reach these newcomers through their preferred platforms – social media advertising and online shopping. Finding ways to connect with this generation is critical to gaining a loyal fanbase, especially for up-and-coming brands.

Younger Generations Are More Likely To Shop Online and Change Products if They Don't Perform



Older Generations Are Less Likely To Change Products While Younger Buyers Don't Mind Switching



Staying One Step Ahead

As consumer demands change and technology evolves, suppliers and detergent manufacturers must adapt and stay nimble. Some appliance and dish detergent brands are forming partnerships that would highlight the use of preferred detergents in their smart machines — even going so far as to have a dedicated cycle for a specific detergent format. At IFF, our longstanding relationships with key stakeholders in the industry and consumer research gives IFF unique insight into potential opportunities for innovation. IFF is always seeking out new ways to develop custom cleaning solutions to meet the moment. For example, advancements in smart devices could potentially impact demand for certain formats^[1] and the innovators of tomorrow will be ready to pivot.



AUTO-DOSE DISHWASHING MACHINE

Miele® PowerDisk Dishwasher Detergent, created for the brand's auto-dosing dishwashing machine, is geared to remove stubborn stains and features packaging made from 100% recycled plastics.

DETERGENT-FREE DISHWASHING

2nd-Curv's 5 SEC High-Speed Dishwasher contains a detergent-free rapid cleaning solution to limit use of harsh chemicals in cleaning and minimize energy consumption.



NEARLY WATERLESS DISHWASHING

The Lissome R1 compact dishwasher features Sweeping Jet Technology and AI sensors to detect water clarity. It reduces the wash to just 15 minutes.

[Get in touch](#) to discuss our study about format performance and how our biosolutions can support your products.

Stay tuned for [our next installment of The Dish](#) where we will discuss how machine innovation is influencing the dishwashing market.