

# The retail front end is breaking up (and what to do about it)

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*The time for yet more hard coded add-ons to retail front ends is over, says Richard Clarke, Head of Global Sales, Consumer Industries at Fujitsu. Instead, retailers need to architect a new road map that embraces API enablement and microservices.*

In 2024, most retailers will finally reach the end of the line in adding ever more new front-end apps to core retail commerce systems.

It has been a long journey to get to this point. Retailers have done a great job reinventing their front ends in the slow move from a conventional, stores-only approach to a blended, omnichannel experience. But most have assembled something of a Frankenstein's monster, with apps like CRM, inventory, and stock pick bolted to whatever the original core once was.

For a slightly more modern analogy, it's like one of those early Star Trek episodes where an exasperated Scotty informs Captain Kirk that he's done all he can to keep the falling-apart Enterprise on course: "I cannae hold her cap'n, she's breaking up!"

## **Hard-coding reaches the end of the line**

The fundamental problem is that there is no single, integrated app that does everything retailers might want. And even if there were, there's always some urgent new customer need just around the corner, ready to render it redundant again.

What retailers have been doing, quite logically, Captain, is to hard code all new requirements as they come along. For example, most retailers have accepted online orders and payments for quite a while now. But customers increasingly want to click and collect. That means calling info from multiple systems and hard-coding those into the existing e-commerce system.

Hard coding in this way was a success – there was life, Jim, but not as we know it – but it was a tortuous way of doing things. It resulted in relatively rigid and monolithic IT systems with front-end apps tightly coupled to core back-end systems.

Hard coding business logic, workflows and validation rules into the front-end, rather than maintaining it centrally, can make it extremely difficult to configure or change without new code deployments. Building custom front-ends for each device or channel (web, mobile, kiosk, etc.) means duplicating logic across them all. And hard-coded links to specific back-end systems mean integration and orchestration between systems is challenging.

And new requests keep on coming. The core systems weren't built for things like Deliveroo orders that must be picked up within 30 minutes – or for customer reviews, smart dressing rooms, AI chatbot integration, etc.

We have reached the point where most internal IT departments, like Mr. Scott, are keeping things running against the odds, dreading Captain Kirk's next unanticipated maneuver.

## **Microservices and APIs create a new level of flexibility**

The flaw with this analogy is that the Klingons destroyed The Enterprise in Star Trek III: The Search for Spock. In fact, by some estimates, the USS Enterprise has been wrecked nine times. We're not proposing you do that. Instead, there is a more constructive way forward that will enable your core systems to continue delivering value for quite a while yet.

Retailers are increasingly moving towards more flexible, API-driven architectures by building reusable front-end microservices that can connect to back-end APIs in a decoupled way. This approach, we predict, will become mainstream in 2024.

Combining APIs and microservices means data flows across the business like any standard internet request. Without that ability, it's hard to understand your in-store inventory, for example, something multiple apps want to know about. Even at a relatively superficial level — exposing inventory to your e-commerce and in-store apps — you'd probably have to hard code twice. You only need to adapt once with an API/microservices-based composable e-commerce platform. And every time you want to integrate with another app, all you do is expose the new API to your platform.

This provides more flexibility — and is faster and more economical — by using API management and orchestration layers to handle integration between front and back ends. Retailers can now leverage headless commerce/CMS approaches where front-ends pull content, products, prices and more from APIs, and cloud-based front-end apps that connect to back-end APIs provide more agility and scalability.

You don't need to crash your core into a nearby planet to do this. It's entirely practical to create a clean platform via a sequence of manageable investments.

### **Architect a roadmap**

The endgame here is something called "MACH" —microservices, API-first, cloud-native, headless (where "headless" means separating front-ends from back-ends, connected via APIs). It emphasizes loose coupling, APIs, cloud scalability and decoupled front-ends.

To get there, retailers need to invest in a road map for a platform that starts with API enablement to create an abstraction layer for front-ends. Next, break apart monolithic applications into standalone microservices. This can be done incrementally. Now modernize front-ends to consume the new APIs in a decoupled manner and then implement API gateways with capabilities like security, throttling, and caching to manage API consumption.

More is possible, too, but you can prove value incrementally at each stage through metrics like faster feature development and improved reliability.

More importantly, this approach enables tomorrow's new use cases. Covid's quick commerce was an object lesson in how radically things can change, more or less overnight. Right now, you're probably hard at work integrating advanced AI chatbots on websites and messaging apps, allowing customers to interact with brands conversationally.

You or I just don't know what the next "got to have it by next week" app will be after that. But by moving towards MACH, you'll be putting yourself in a much better position to respond to it when it comes.

*Find out more about how Fujitsu builds MACH architectures for retailers. I'll be beaming down to NRF 2024 in New York, so come and meet me between January 14-16 at the Javits Center, New York, Booth # 5203.*

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Richard is responsible for bringing the best of Fujitsu's industry vision, consulting capabilities and solutions and services to its customers in the consumer industries across the world. Reporting into Fujitsu's global leadership in Japan, Richard and his team develop and execute compelling and relevant strategies to expand key markets and define differentiated propositions to meet the needs of existing and new customers.

