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**Scotland Food & Drink
Partnership**

ROBOTS, GHOSTS AND THE SQUID THAT NEVER WAS: THE TECHNOLOGY OF FOODSERVICE

March 2022

meta / physical







COVID-19 accelerated digital transformation, with years of progress crammed into 18 months. What was previously awkward, niche, or even unimaginable, suddenly became mind-numbingly normal: Zoom meetings, online conferences and classrooms, digital-only friends, buying groceries online, and yes... working from home (or wherever the laptop is).

Although it might feel like we're already at peak digital, as boundaries between the physical and digital blur (and become increasingly irrelevant), expect completely unforeseen possibilities to emerge. Nowhere more so than the world of foodservice

“The reality for restaurants is that customer experience does not exist in a physical or digital storefront – it spans both, across multiple touch-points.”

Krystle Mobayeni, BentoBox’s co-founder and CEO.



In 2013, Mobayeni cofounded BentoBox a platform tailored to help restaurants easily create websites that are a reflection of their physical locations.

BentoBox collects all the existing online information about a restaurant – the menu, the logo, any available design elements – organizes it into one of several design templates and then adds a lightly personalised touch.





Two Seattle-based giants, Starbucks and Amazon announced they've collaborated to create a cashier-less coffee shop. Starbucks Pickup with Amazon Go debuted in November 2021 in New York City.

The new store uses Amazon's Just Walk Out technology, a system that features a variety of cutting-edge tech like computer vision and IoT sensors, as well as Amazon's bio-authentication hand-scanning technology, Amazon One.

Customers order through the Starbucks app and can check order status on a digital screen. When it's ready, coffee is picked up directly from the barista.

The two companies plan to open two additional pickups in 2022, with the second one slated to open in the New York Times building.



TOUJOURS AU
BOUOT DES DOIGTS

Commandez directement
sur notre borne!

 BRING YOUR FINGER CLOSER
WITHOUT TOUCHING THE SCREEN





St-Hubert, a Canadian casual dining restaurant chain, recently rolled out several kiosks at locations in Montreal and Laval, Quebec. With the kiosk's Samsung AIR TOUCH® technology, customers can order their meals on a touchless display without the need to physically touch the surface of the screen.





freestyle
**TOUCH-FREE
FREESTYLE**

**Contact-free
pouring**

1. Tap the screen to select your drink.
2. Place your cup on the tray and press the screen to start pouring.
3. Select your amount and press the screen to pour.

freestyle



A contact-less Coca-Cola Freestyle solution allows consumers to choose and pour a drink from their phone in just a few seconds, without having to sign up for a membership or download an app.

The mobile Web experience, which was piloted in 2020 at select Wendy's, Five Guys and Firehouse Subs restaurants in Atlanta, works on any smart device.

It's fair to say that Coca-Cola Freestyle has leveraged the trend of customisation and expanded choice...

Coca-Cola® Vanilla Coke Coke with Lime Raspberry Coke Cherry Coke Orange Coke Cherry Vanilla Coke
Diet Coke® Diet Vanilla Coke Diet Coke with Lime Raspberry Diet Coke Diet Cherry Coke Orange Diet
Coke Diet Cherry Vanilla Coke Coca-Cola Zero™ Cherry Coke Zero Vanilla Coke Zero Cherry Vanilla
Coke Zero Coke Zero with Orange Coke Zero with Lime Coke Zero with Raspberry Coke Zero with
Lemon Caffeine-Free Diet Coke® Caffeine-Free Diet Vanilla Coke Caffeine-Free Diet Coke with Lime
Caffeine-Free Diet Coke with Orange Caffeine-Free Diet Raspberry Coke Caffeine-Free Diet Cherry Coke
Caffeine-Free Diet Cherry Vanilla Coke Sprite® Sprite with Cherry Sprite with Strawberry Sprite with
Grape Sprite with Peach Sprite with Raspberry Sprite with Orange Sprite with Vanilla Sprite Zero™
Sprite Zero with Cherry Sprite Zero with Strawberry Sprite Zero with Raspberry Sprite Zero with Grape
Sprite Zero with Peach Sprite Zero with Orange Sprite Zero with Vanilla Fanta® Orange Fanta Fruit
Punch Fanta Lime Fanta Grape Fanta Strawberry Fanta Peach Fanta Raspberry Fanta Cherry Fanta
Zero™ Orange Fanta Zero Peach Fanta Zero Lime Fanta Zero Grape Fanta Zero Strawberry Fanta Zero
Fruit Punch Fanta Zero Raspberry Fanta Zero Cherry Minute Maid® Lemonade Minute Maid Cherry
Lemonade Minute Maid Orange Lemonade Minute Maid Raspberry Lemonade Minute Maid Strawberry
Lemonade Minute Maid Fruit Punch Lemonade Minute Maid® Light Lemonade Minute Maid Light Cherry
Lemonade Minute Maid Light Orange Lemonade Minute Maid Light Raspberry Lemonade Minute Maid
Light Strawberry Lemonade Minute Maid Light Fruit Punch Lemonade Dasani with Lime Dasani with
Peach Dasani with Grape Dasani with Orange Dasani with Strawberry Dasani with Raspberry Dasani
with Cherry Dasani with Lemon Dasani Sensations - Lime Dasani Sensations - Peach Dasani Sensations -
Grape Dasani Sensations - Strawberry Dasani Sensations - Orange Dasani Sensations - Raspberry Dasani
Sensations - Cherry Dasani Sensations - Lemon Powerade ION4 Fruit Punch Powerade ION4 Raspberry
Powerade ION4 Cherry Powerade ION4 Lemon Powerade ION4 Orange Powerade ION4 Lime Powerade
ION4 Grape Powerade ION4 Strawberry Powerade Zero Fruit Punch Powerade Zero Raspberry
Powerade Zero Cherry Powerade Zero Lemon Powerade Zero Orange Powerade Zero Lime Powerade
Zero Grape Powerade Zero Strawberry Hi-C® Hi-C Cherry Hi-C Orange Hi-C Raspberry Hi-C Strawberry
Hi-C Fruit Punch Hi-C Grape Hi-C Raspberry Lime Hi-C Orange Vanilla Vault™ Vault Red Blitz Orange
Vault Grape Vault Peach Vault Pibb Xtra® Pibb Zero™ Barq's® Barq's Vanilla Diet Barq's® Diet Barq's®
Diet Barq's Vanilla Seagram's® Lemon Lime Seltzer





Ohio-based Smart Soda Holdings has introduced a Bottle-less Beverage Programme to offer health-conscious consumers: craft vitamin-infused flavoured sparkling alkaline waters and sodas.

The Bottle-less Beverage Programme includes the JuLi Touch model, a beverage platform with a large, dynamic touch screen for maximum user experience, and the Smart Soda Sync, an IoT software solution to track customer behaviour and identify purchasing needs from a secure online dashboard interface.

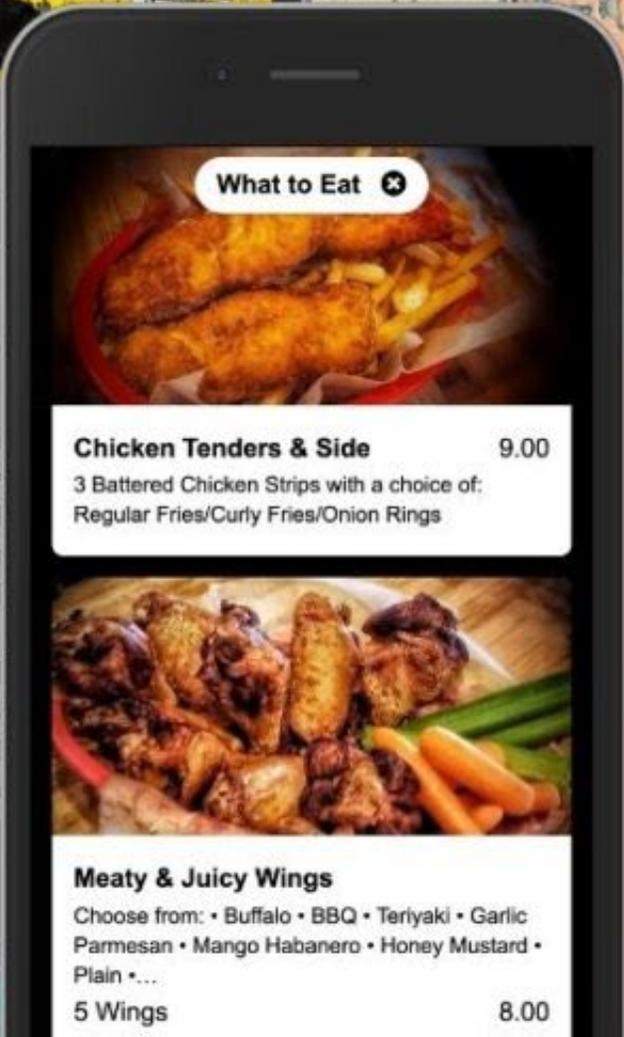
In future producers need to consider to who owns the purchase data and how they access it.



my menu's calling me



digital menu design



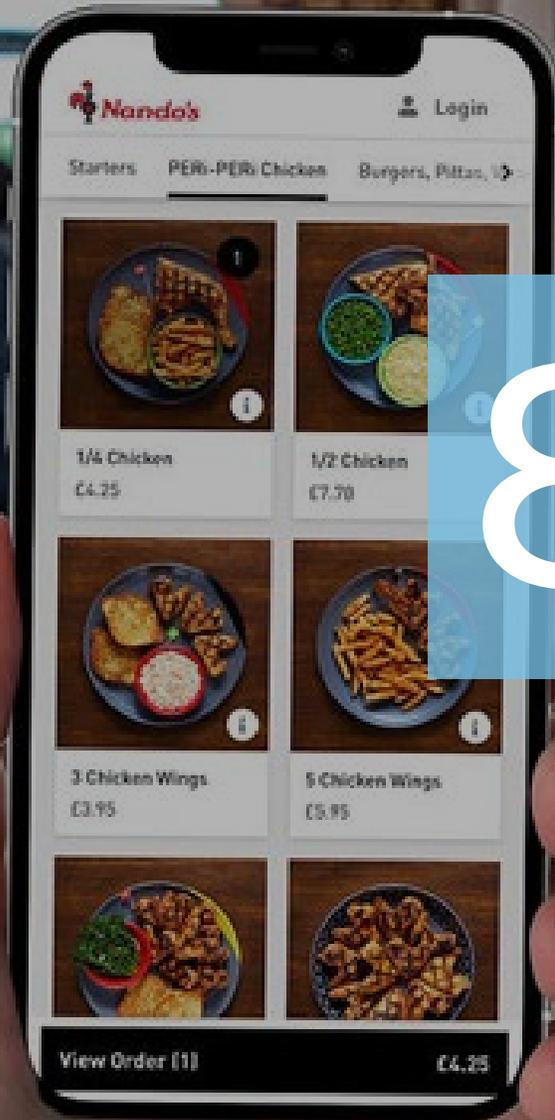


Customers have started to realise that ordering and paying at table is not only easy, but that they also get served faster. With order at table, they don't have to leave the conversation to stand 15 minutes at a bar that is 5 deep in people, waving a credit card and trying to catch a bartender's attention.

Nor is there the inevitable battle back to the table, carrying multiple drinks, hoping that no one bumps into you!

Instead, customers can remain seated with their party (in this sense, mobile ordering actually improves the social element of eating out). Customers can easily order what they want when they are ready.





85%





Nando's has completely transformed its customer ordering experience over the past year to the point that a staggering 85% of orders are now placed digitally at its restaurants, compared to zero pre-pandemic.

Appealing to a new generation of tech savvy customers – Technology is more the 'norm' with the younger generations, to the extent that it is expected, even required.

With apps, online ordering and same day delivery becoming commonplace in retail, hospitality will need to keep up and whilst the pandemic has provided the necessity to do that, the new generation of tech savvy customer will continue to reap the rewards far into the future.

Instant information on specials, availability, allergens and nutrition – Live, digital menus provide the customer with the latest information. If an item is no longer available, it's automatically removed from the menu, so no customer has to feel the frustration of making a choice only to find out there are none left!

Not only that, but a digital menu can display allergy and nutritional information, so that the customer can quickly align their menu choices with any special dietary requirements, as well as being able to see specials too.





Having launched in November 2020, Finish & Feast enables consumers across the UK the opportunity to enjoy some of the nation's top restaurants from the comfort of their own homes. Specialising in fine dining, the platform has established a cohort of high-profile culinary talent who curate signature menus to be enjoyed by consumers hungry for fine dining at-home, anywhere in the UK. Menus are packaged and delivered every Friday, and need only be finessed and plated before being served.

The roster of chefs working with Finish & Feast is testament to the quality they aim to deliver. Industry-leading names including Tom Aikens (Muse), Marianne Lumb (of former Notting Hill haunt Restaurant Marianne), Thomas Frake (MasterChef 2020 Champion) and Dean Banks (HAAR) have joined the fold and developed at-home menus evocative of their individual styles.



ghosts



GHOST KITCHENS





The Ghost Kitchens service enables Walmart shoppers to select food and drinks from the menus of up to 25 national and regional restaurant and food concepts and combine them into a single order.

Customers place their orders via touchscreen kiosks and then receive a receipt via text, followed by another text when their order is ready, allowing them to shop while their order is prepared.

 **CHIPOTLE** **DIGITAL KITCHEN**

 **CHIPOTLE** **DIGITAL KITCHEN**

 **DIGITAL KITCHEN**
BY CHIPOTLE





CHIPOTLE

**DIGITAL
KITCHEN**

ORDER IN THE APP
PICKUP & DELIVERY
ENJOY ON THE GO



**DIGITAL
KITCHEN**

PICKUP & DELIVERY

HAVEN'T
ORDERED
YET?
GET THE APP*





Chipotle opened its first Chipotlane Digital Kitchen restaurant in Cuyahoga Falls, Ohio in December 2021

The new restaurant format will only serve customers through digital orders. Customers place orders online or through the Chipotle app, then pick them up via a walk-up window or a Chipotlane, Chipotle's version of a drive-thru.

The digital kitchen format is a sign that Chipotle is continuing to embrace the dominance of drive-thrus and digital orders over the fast casual chain's original model, where customers ordered inside and watched workers construct their burrito bowls right in front of them.





TACO BELL



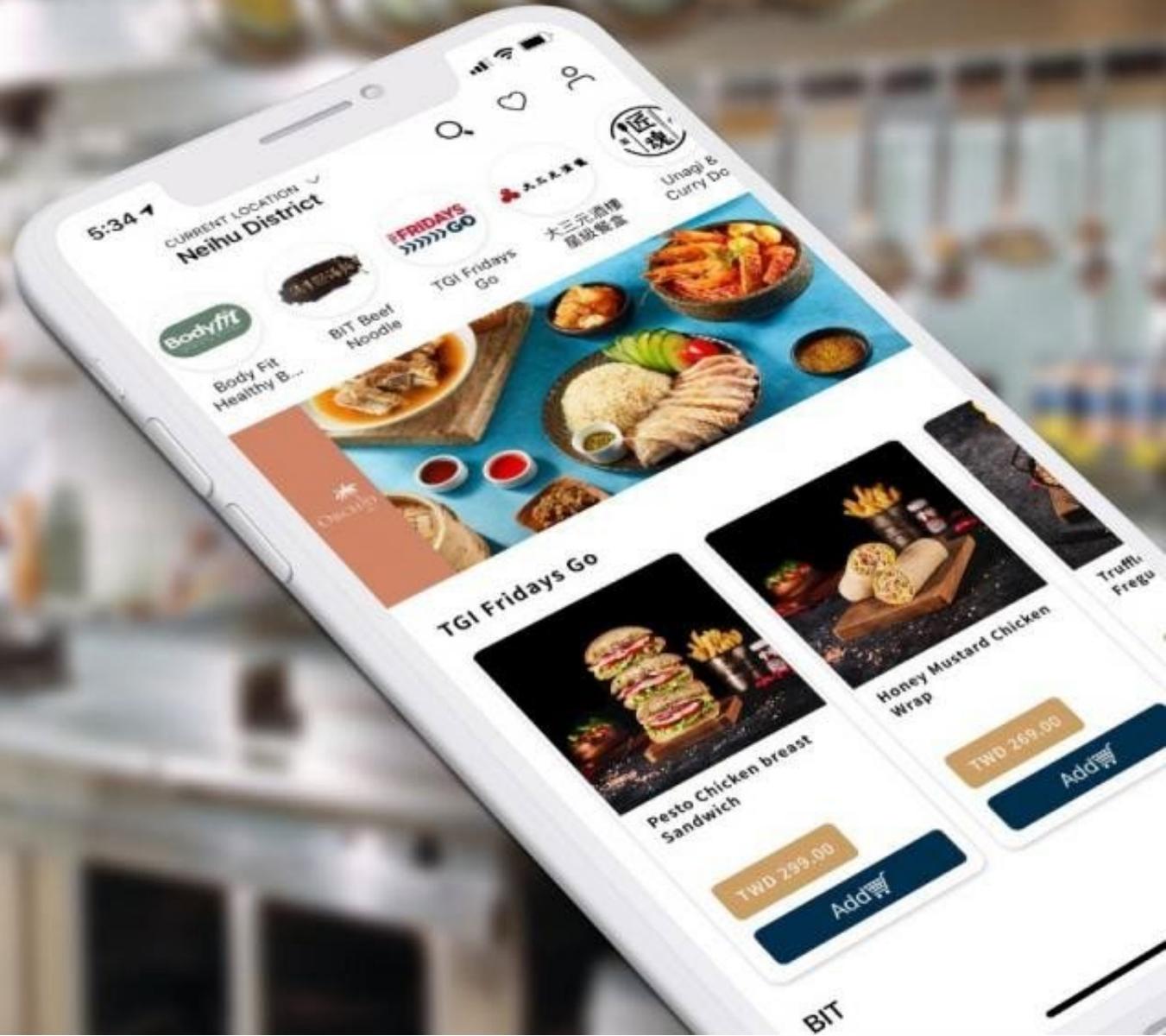


Taco Bell, announced in August 2021 its first “Taco Bell Defy” location in Brooklyn Park, Minnesota that is exclusively a four-lane drive-thru.

The new locations will have an upper-level kitchen that sends digital orders down via a lift without any human contact. Three of those four lanes are also dedicated to delivery services — while Chipotle will be sharing just the one with both DoorDash type delivery services and regular customers.



JUST ★ KITCHEN





JustKitchen operates cloud kitchens, but the company goes beyond providing cooking facilities for delivery meals. Instead, it sees food as a content play, with recipes and branding instead of music or shows as the content, and wants to create the next iteration of food franchises.

JustKitchen currently operates its “hub and spoke” model in Taiwan, with plans to expand four other Asian markets, including Hong Kong and Singapore, and the United States this year.

Launched last year, JustKitchen currently offers 14 brands in Taiwan, including Smith & Wollensky and TGI Fridays. Ingredients are first prepped in a “hub” kitchen, before being sent to smaller “spokes” for final assembly and pickup by delivery partners, including Uber Eats and Foodpanda.

To reduce operational costs, spokes are spread throughout cities for quicker deliveries and the brands each prepares is based on what is ordered most frequently in the area.

The company has recently finalised several prominent partnerships, including with Foodpanda and Uber Eats in preparation for Hong Kong’s substantial market potential

BLOG / FEBRUARY 26, 2022

Restaurant menu engineering for ghost kitchens



VIEW ALL





An opportunity for producers to test their foodservice product in the real world?

Travis Kalanick (ex- Uber) and the Saudi Arabian Sovereign Wealth Fund are backing CloudKitchens which will offer a variety of delivery solutions to a range of businesses, from food truck owners, local restaurant owner, or national chains.

According to their marketing “you don’t even need to leave the kitchen to hand off each order. We have dedicated team members that will bring each order you complete to the correct delivery driver and ensure they’re on their way in no time. Plus, we’ll take care of the cleaning, maintenance, and security - so all you’ve got to do is cook.”



print me a squid







Twins Garden



Twins Garden restaurant Ivan and Sergey Berezutskiy

The twins' concept of 3D squid came about for one simple reason: overcoming allergies. Although, after developing it, they realised how important it could be with regards to sustainability.

Ivan says: “Many people are allergic to seafood, including some of our regular diners. So we decided to prepare squid from alternative products, not in the form of some kind of minced stuff, but so that the dish really does resemble squid. We wanted to help those with seafood allergies to perceive not only the taste and aroma, but also its texture – that was the challenge. 3D-printing technology allowed us to reconstruct the shape of this sea creature and to reach maximum resemblance to the original.

The emerging technology of ‘printing’ squid is a baffling concept to many of us, and logically enough the development of this substitute product wasn’t without its challenges. Successful 3DFP ingredients include vegan beef, a project from Redefine Meat that Marco Pierre White recently got behind, while Belgian chocolate supplier Barry Callebaut has been enhancing cacao experiences with the world’s first such printing studio since 2020







The Food and Drinks team at City of Dreams installed Winnow Vision into the employee dining area of the City of Dreams, Macau.

Using a camera, a set of smart scales and the same type of machine learning technology found in autonomous vehicles, Winnow Vision 'learns' to recognise various foods being discarded and calculates the financial and environmental impact of such food waste for commercial kitchens. Chefs can then adjust their food purchasing decisions accordingly, reducing spending and tackling a fundamental problem of overproduction.

Following a baseline period where the team took stock of where and why food waste occurred, the team identified dishes such as noodles, potatoes and rice served to employees as key opportunities to reduce waste.

Waste levels steadily reduced over a six-month period as the team adjusted production volumes using Winnow's analytics.

Overall food waste in the employee dining area reduced by 67%, the equivalent of 3,915 KG food waste saved, or almost 17 tonnes CO2E.

bots and pans





“I’m a chef and an engineer and I believe in the power of technology to make lives better.”

“Many processes are time-consuming and inefficient, robotics would definitely improve them.”

Zineb Hattab, K.L.E. Zurich

A man with short brown hair and a beard, wearing a dark blue button-down shirt, is sitting on a set of wooden stairs. He has intricate tattoos on both forearms. He is looking off to the side with a thoughtful expression. The background is a warm, golden-brown color, possibly a wall or a large window with a view of a city at sunset or sunrise.

“We have already replaced a lot of manual work with appliances that utilise robot technology. It is a natural evolution.”

“I see it as a possibility to liberate more staff and use their talents for doing more creative work.”

Rasmus Monk, Alchemist, Copenhagen



Chef Rasmus Munk, the chef-provocateur whose Alchemist restaurant in Copenhagen is at the vanguard of experimental haute cuisine, embraces the future offered by robotics. Would he consider robotic assistants in his kitchen?

“Absolutely,” he says. “We have already replaced a lot of manual work with appliances that utilise robot technology. It is a natural evolution. So if there are jobs in the kitchen that can be cut out, and a robot can do them, I see it as a possibility to liberate more staff and use their talents for doing more creative work than repetitive chopping or preparing herbs.

“In bigger canteens, and in the food industry, it could lead to staff cuts, but at the same time this has been an ongoing process through history, it is unavoidable. It depends on what you use the technology for – if you set the machines to doing repetitive tasks, the chefs can hopefully focus on developing new dishes and perfecting flavours, presentations and the guest experience.”





Mezli is a company that builds fully automated, modular restaurants. The solution is able to handle anything that goes in a bowl - grain bowls, soups, stews, salads, etc. as well as sides and drinks. They will also look into doing other types of food down the road and will also be experimenting with new bowl-style concepts, anything from salads to Indian bowls.

“We started looking into the economics of restaurants and of robotics companies to understand whether we could apply our technical skills to bring down the price point of great meals and realised that we could. Through a lot of design and prototyping work, and a lot of conversations with restaurateurs, robotics experts, etc. came to our current approach.

Of course, every restaurant needs a chef and Mezli says that partnering with Michelin-star chef Eric Minnich, formerly of The Commissary in San Francisco, has been critical to their success so far.



non fungible, fishy







The first non-fungible token (NFT) restaurant will open in New York City next year. The ground breaking news was announced by hospitality company, VCR Group, fronted by Resy entrepreneur Gary Vaynerchuk, last week.

The members-only restaurant, called Flyfish Club, is open to those who purchase a Flyfish non-fungible token, a unique digital asset stored on the blockchain and purchased using cryptocurrency. A regular membership token with access to a cocktail room and dining room costs about \$13,600, and an exclusive tier, with access to a private omakase room, costs roughly \$29,500.

Inside the exclusive 10,000-square-foot space in a prime retail site yet to be revealed, guests will be able to dine on a 'seafood focused' menu, with influences from Peru and Japan, to New England-style seafood in the main dining room.





BAKERY

CRYPTO
FOOD HALL

MMUY
↓

FRESH
ITEMS

BONJOUR

CAKES!

Cup
Cake = 2\$
1 Cake = 30\$
2 pounds
= 42\$



A new kind of food hall is being created in the metaverse, a crypto food hall, created by Cordia Corporation that will host 1,000 chefs was announced in Feb 2022.

Peter Klamka, CEO of Cordia Corp. and the former owner of The Blind Pig restaurant in Las Vegas, has designed the project as an easy and affordable way for independent restaurant operators to test the crypto waters.

“The restaurant environment is as challenging today as it has ever been. Most independent restaurants are barely hanging on,” “A few new customers can literally make the difference between closing for good and surviving. Our chef collection is a fantastic and inexpensive first step for restaurants to get exposure to NFTs and the growing cryptocurrency community.”



smell
made
digital



OW Smell Digital, a tech company trying to digitise the sense of smell for use in metaverse applications, has raised £1m in seed funding in a round led by Parkwalk Advisors.

Emanuela Maggioni, founder and CEO of OW Smell Digital, said: “We are looking to interrupt a marketplace dominated by technologies reliant solely on sound, vision and increasingly, touch.”

She added: “Our sense of smell has the power to evoke long-forgotten memories, bring food to life, calm us down and enrich our lives.”

OW told UKTN that it has plans to be part of the much-discussed metaverse, describing smell as the “missing piece of the puzzle” to create a “truly immersive and lifelike-believable world”.



THE KNOWLEDGE BAK

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If you would like to know more about the information in this report or the opportunities in the Foodservice market please contact us:

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