

Connected Consumer Goods and Experiences:

What They Mean to Brands in 2024



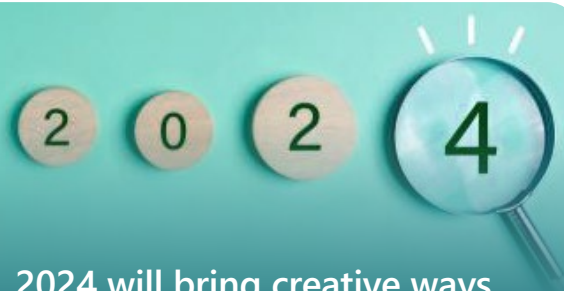
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Introduction

The evolution of products into intelligent, connected devices is radically reshaping CPG companies and their competition as they take advantage of new opportunities and innovative strategies to reach consumers. From the way we stream our favorite music, to how we access software, and even the manner in which we enjoy our morning cup of coffee - the shift from transactional interactions to experiential engagements is obvious.

This eBook, *Connected Consumer Goods and Experiences: What They Mean to Brands in 2024*, explores this transformation. We uncover the driving forces behind connected products and business models, the implications for brands, and the opportunities and challenges that lie ahead. We'll highlight real-world examples of brands that have successfully made the transition and offer insights into what the future holds. You can reconsider what it means to be a brand in an increasingly connected world. It's a journey from tangible to intangible, from product to promise, and from ownership to experience.



2024 will bring creative ways to drive growth, redefine shopper experiences, and expand traditional ways of delivering products and services by building brand and retailer growth with new and innovative mixes of services and solutions. Now, brand leaders have a powerful opportunity to create intimate relationships with consumers.

[Acosta Group](#)



What are Connected Consumer Goods?

Connected consumer goods are physical products embedded with IoT (Internet of Things) technology, that enables computing hardware, such as sensors, actuators, or appliances, to connect wirelessly to a network and transmit data. These connections allows for activities like remote monitoring, control, and automation.

Consumers are using connected products for personal use: smart home devices like cameras, wearable technologies like Apple watches, home appliances and lighting systems. These products integrate with home Wi-Fi and contain or connect to a dedicated app, allowing users to monitor and control the devices from almost anywhere. The process typically involves downloading the app, creating an account, and following specific instructions to connect the device to the home network.

But the **value goes far beyond personal use**. Smart products, as they are sometimes called, can collect and transmit data to the selling companies for a host of uses and are now being used as a strategy to stay competitive. The data collected and transmitted by smart products provides CPGs with valuable insights into how their products are used, enabling them to optimize marketing strategies, product development, and inventory management amongst other efficiencies.

The Technology Stack

Smart, connected products require a modern supporting technology infrastructure. This "technology stack" provides a gateway for data exchange between the product and the user or manufacturer, integrating data from business systems, external sources, and other related products. It also serves as the platform for data storage and analytics, runs applications, and safeguards access to products and the data flowing to and from them. You can read more about integrated modern data platforms on [Page 15](#).

Connected Products Create Opportunity

As consumers increasingly adopt smart, connected products, a whole host of service-oriented opportunities open up for companies to enhance existing lines of business and open entirely new ones. Linking products and services— often called a product-as-a-service model— involves selling the services and outcomes a product can provide rather than the product itself, or in combination with the product itself.



Connected Products Provide the Foundation For...



Connectivity

Remote Monitoring

Asset Health

Remote Diagnostics

OTA Updates

Geofencing & Security



Analytics & Insights

Customer Usage Analytics

Design & Engineering insights

Remaining Useful Life

Predictive Maintenance

Connected Field Service



New Business Models

Digital Services

Upsell & Cross sell Opportunities

Product-as-a-Service

When delivered as part of a wholistic strategy, product-as-a-service models can provide a predictable and more stable revenue stream, and opportunities for upselling and cross-selling services along with a product purchase. It's also been known to strengthen the relationship between the brand and the consumer, as customers feel that they are more attached to the brand, what it is delivering, and how their data can and will be used.



Pay-per-use Model

Some CPG companies are creating new revenue streams through pay-per-use models, where customers pay based on their usage of the product. Customers subscribe or rent the product and pay recurring fees for continued access. The cost is based on actual usage, and it may appeal to those who are cost-conscious because it tightly aligns pricing with value delivered.

A washing machine as a service company might sell, for example, a subscription where customers pay a monthly fee for access to use a washing machine during the subscription. The base-level service could include the right to use the washing machine x number of times which can be supplemented with extra washes and additional services like detergent refills, proactive maintenance and more.

Products delivered as services must capture usage data so that customers are appropriately charged. This requires clear thinking about the type and location of sensors, what data will be gathered, and how often it should be analyzed. When [Xerox](#) evolved from selling copiers to charging by the document, it added sensors on the photoreceptor drum, feeder output tray, and toner cartridge to enable accurate billing and facilitate the sale of consumables like paper and toner.

Let's take another example. [Celli Group](#) is a global company based in Italy that manufactures and services equipment for dispensing soft drinks, water, and beer. The company has a model-based system with IoT at the foundation that includes a "smart warranty" program whereby coverage is based on performance against a specification rather than time in service. The coverage is determined by how often and how hard the equipment is used. The more the equipment runs, the shorter the warranty.

By leveraging data from the IoT connected product, they were able to improve product quality by 27 percent by monitoring temperature, shelf-life and sanitation cycles, and reduce service costs by 10 percent through better predictive maintenance.



Bundling

More companies are providing bundled solutions rather than the laundry lists of the products and services they provide. This is an ongoing trend. Bundling is primarily a pricing strategy where individual products or services are grouped together and sold as a single unit to encourage customers to make more purchases. When combined with smart, connected products, it can lead to higher average order value, as well as decreased distribution costs, and an ongoing revenue stream.



[Philips Hue](#), a line of smart lighting products, operates on a service-oriented, bundling model. Customers not only purchase smart light bulbs but also subscribe to services that enhance their lighting experience, such as synchronization with entertainment content or tailored lighting scenes.

The company bundles products, typically including a combination of smart LED lights, the Hue Bridge, and sometimes smart accessories. The Hue Bridge is a central component that enables the control and automation of the smart lights. Additionally, Philips Hue also integrates with various smart home devices, platforms, and assistants for expanded functionality.

The mammoth CPG company, General Electric, took the bundling model to a [whole new level](#) from being a supplier of X-ray, CAT scan, MRI and other imaging equipment to providing integrated radiological floors where they spec all of the equipment and services. GE manages them all and bills for them in one bill. The hospital no longer has

to manage hundreds of suppliers, there's just one, GE, and it bundles a solution. The efficiencies gained are said to be huge.



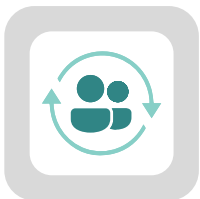
Subscriptions and Auto-replenishment

More companies are providing bundled solutions rather than the laundry lists of the products. Some products and equipment need a host of consumables to operate, and many CPGs are benefiting from integrating consumables with smart, connected products. For example, smart appliances require consumables such as detergent, water filters, or coffee pods—a smart coffee maker could be designed to notify users when it's time to reorder a specific coffee brand or type.

Building on the ability to notify, many CPGs offer consumables subscription services where customers receive regular shipments of these products based on their usage.

patterns. Gillette introduced a subscription service called “[Gillette On Demand](#)” where customers could subscribe to receive replacement razor blades at regular intervals. This model aimed to provide convenience and ensure that customers always had access to sharp blades.

GNC is another CPG company for which subscription and membership efforts have allowed it to “foster the well-being for customers via routines and proper adherence, both online and in retail stores at the point-of-sale.” The company reports that consumers who enroll in GNC’s subscription model have [three times the lifetime value](#) of transactional shoppers, on average.



Personalized Services

The ability to remain connected to the product and track how it’s being used shifts the focus of a company’s customer relationship from selling— often a predominantly onetime transaction— to maximizing the customer’s value from the product over time. This opens up important new requirements and personalization opportunities for marketing and sales.

As that focus shifts to providing continual value to the customer, the product becomes a means of delivering that value, rather than the end itself. And because a

company remains connected to customers via the product, it has a new basis for direct and ongoing dialogue with them. Companies are beginning to see the product as a window into the needs and satisfaction of customers, rather than relying on customers to learn about product needs and performance.



CPGs may want to pivot to after-purchase personalization, as that’s the phase when 47 percent of consumers enjoy personalized experiences, compared to 38 percent who do so when initially discovering or researching a product/service, according to Jessica Liu, a [Forrester](#) principal analyst.

L’Oreal, one of the top publicly-owned CPG companies, has been exploring a range of [technological advances](#) to engage with consumers and gather consumer data in order to understand better aging and skin composition for enhanced diagnosis services and personalized consumer recommendations. The company has also invested in other emerging areas like social commerce to interact with consumers and allow them to share their beauty routine.

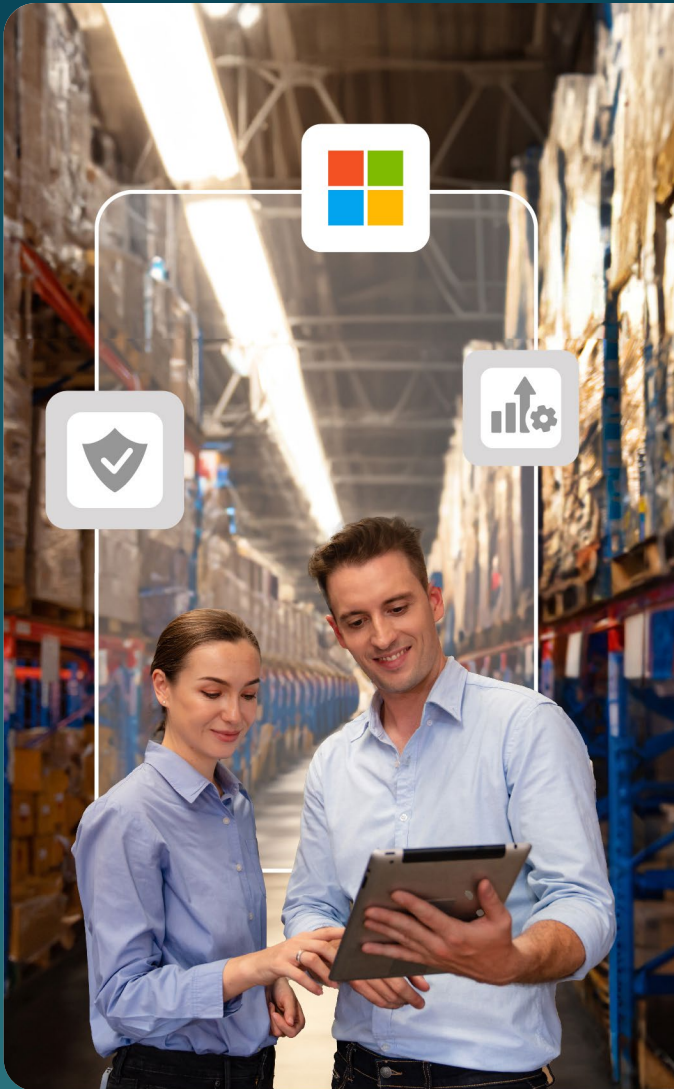


With Opportunity Comes Challenge

Connected consumer goods are physical products embedded with IoT (Internet of Things) technology, that enables computing hardware, such as sensors, actuators, or appliances, to connect wirelessly to a network and transmit data. These connections allows for activities like remote monitoring, control, and automation.

Securing connected products affects multiple functions within a company. Clearly, IT plays a central role in identifying and implementing best practices for data and network security. And the need to embed security in product design is crucial. Risk assessments must consider threats across all potential points of access: the device, the network to which it is connected, and the product cloud. Connected appliances can pose serious risks to privacy and security, as they can be hacked by malicious actors who may want to access user data, spy on them, or cause damage.

At Hitachi Solutions, we can't overstate the importance of end-to-end security in any digitally connected system. If you're considering a connected products business model, a solid internal security infrastructure is the place to start. Then when you're ready to develop new connected product initiatives, both you and your customers won't be vulnerable to attacks.



Hitachi Solutions and Secure Transformation

At Hitachi Solutions, security isn't an afterthought - it's at the core of all we do. Our solutions are meticulously designed to bolster security, enhance performance, boost reliability, and ensure cost-effectiveness. Our team is comprised of seasoned scientists and engineers with in-depth knowledge and experience in applying secure solutions.

As a premier Microsoft partner, we're ready to apply our knowledge and help you prepare for a connected business world. It takes a special technology partner to be able to deliver not only the technology, but the support required for adoption and compliance. That's us.

Privacy policies and terms of service for smart devices are sometimes vague and may not provide clear information about the extent of data collection and how it is used. And some smart device brands may collect more data than is necessary for the product to function. Often this data is used for marketing purposes, such as creating customer profiles, serving targeted ads or personalizing marketing based on user behavior. The data can also be sold to a third party for a range of uses, including the purpose of selling extended service contracts. It's more data collection than many consumers are comfortable with, so privacy and use policies should be designed clearly and transparently to ensure customer ease of mind.



Beyond the Physical Product: Embracing Digital Twins

To better understand the rich data generated by smart, connected products, many companies are using a tool called a “digital twin.” Digital twinning is the process of creating a computer simulation of a complex system and progressively adding real-world information to refine the model. Eventually it becomes a simulated reflection— a digital twin of the real thing.

Just as twins share a common origin, a digital twin is created based on the data and information gathered from its real-world counterpart. And just as twins might be in separate locations and lead separate lives, a digital twin can exist anywhere – in the cloud, on a server, or distributed across various devices. Think of it as having a clone of something in the digital world.

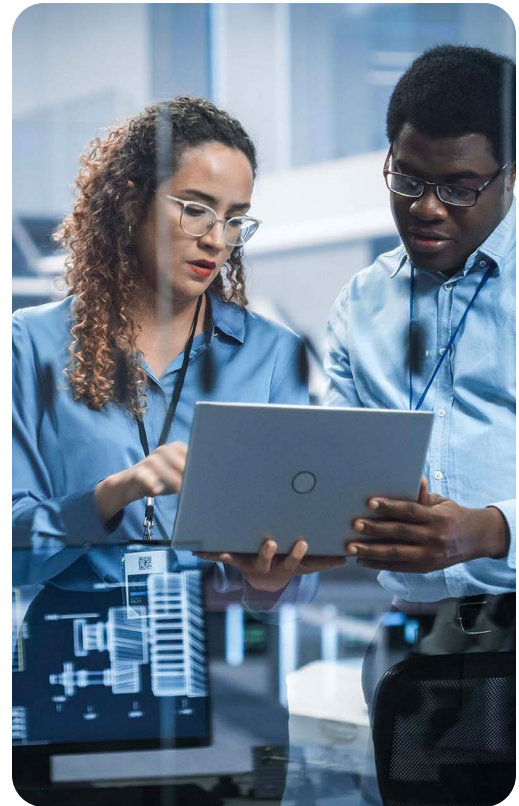
Digital twins can play a crucial role in a connected consumer goods strategy allowing for better decision-making and continuous improvement of the real-world entity. It includes developing user interfaces that enable stakeholders to interact with and manipulate the digital twin, for example, a new consumer product, making it accessible to different teams within the organization for testing and manipulation.

Digital Twins can help give CPG manufacturers clarity by creating a digital feedback loop that fosters exponential learning, adaptability and refinement.

— Jeff Winter, Hitachi Solutions’ Manufacturing Industry Strategy Director

For durable goods, such as appliances or electronics, digital twins can also support remote diagnostics and troubleshooting. When consumers experience issues with connected products, technicians can use the digital twin to remotely assess the situation, identify problems, and provide solutions without the need for physical presence.

Innovative techniques such as digital twinning – proven in other sectors – have the potential to enable unprecedented personalization as part of a wider approach. With the creation of a digital skin twin, the skincare industry could get [closer to its customers than ever before](#). There are few structures more complex than skin, and modeling for analytical purposes can be incredibly challenging. But digital twinning offers brands an approach that could take an existing skin model and – with the right data and the right analytics – create the digital twin of any individual customer.



[Listen](#) to Hitachi Solutions' Industry Director Jeff Winter's take on how companies can drive innovative growth and adopt modern technology mindsets in the era of Industry 4.0.

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WEBINAR

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October 12, 2023 | 12pm EST

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Stepping into Immersive Reality



Some CPGs have begun incorporating a powerful new interface technology called immersive reality, which uses sensing technologies and spatial computing to help users “see the world differently” through mixed or augmented virtual reality. Immersive reality can significantly impact a connected consumer goods strategy by providing new opportunities for engagement, interaction, and commerce in a collective virtual shared space.

An ideal v-commerce strategy should emphasize creating an experience that allows consumers to explore and discover through ways they couldn’t do on a 2D webpage. Through a smartphone or tablet pointed at the product, or through smart glasses, augmented reality applications tap into the product cloud and generate a 3D digital overlay of the product.

Research suggests that emerging immersive reality technologies of the metaverse could generate up to \$4 trillion to \$5 trillion in value across consumer and enterprise use cases by 2030.

— [McKinsey Technology Trends Outlook 2023](#)

The nearly 100-year-old CPG company, La-Z-Boy, is investing in [augmented reality technology](#) to bring its furniture to life in a v-commerce experience. Website visitors can see a 3D configuration of La-Z-Boy products, with customization options, to get a better idea of style and size before visiting a physical retail store. The new tech is part of [La-Z-Boy’s](#) plan to invest in several innovative shopping and brand tools across online and in-store environments in order to lead with a consumer-first approach.

Another example is [L’Oréal’s ModiFace](#), a digital skin diagnostic tool and personalized beauty regimen technology rooted in 15 years of scientific research. L’Oréal is now scaling it by integrating it into Amazon shopping experiences and virtual makeup sessions with Microsoft. The company has also launched an AI-driven [trend-spotting tool](#) that scans more than 3,500 online sources—including social media platforms, search engines, and beauty blogs—to identify current trends and emerging signals.

From Idea to Shelf: The Need for Speed in the CPG World



The amount of powerful data available to CPGs, together with the capabilities of smart, connected products, are restructuring the traditional function of product development in interesting ways. Physical prototyping is time consuming and expensive. Being able to digitally verify designs can dramatically reduce the lead time for product development. Companies no longer have to design then simulate, they can design and simulate. For example, manufacturers can use software, apps, and online tools to design, code, and simulate a product. They can also use hardware, 3D printing, and IoT devices to build and connect their product.

Brands already use simulated retail environments to test consumer products against competitors on the shelf. In the future, brands might be able to conduct similar tests virtually, requiring less time and money because the tests could be conducted from anywhere in the world, at any time. In fact, immersive environments might reduce the need for traditional consumer testing. Brands could test-launch products in the virtual space and create physical versions based on demand.

Product testing should be a constant process - there should be no start and end. Smart companies continually evaluate and test products, adapt, change and repeat. With connected products it opens up a wide avenue to do so efficiently and effectively with sensors, cameras, and analytics monitors. But remember, while technology is great for building prototypes, the human element—feedback from potential users or experts—is irreplaceable.

IKEA recently demonstrated how the human element can play a crucial role through a crowdsourcing initiative that not only expanded its product offerings but also engaged customers in a meaningful way, turning them into active participants in the creation of new and innovative home furnishings. The company organized a global design competition where the winning designers were given the opportunity to collaborate with IKEA's in-house design team to refine and develop their concepts into market-ready products. Born out of the crowdsourcing initiative, the final collection was launched in IKEA stores globally showcasing the diverse contributions from the global crowd.

Good Data is the Cornerstone



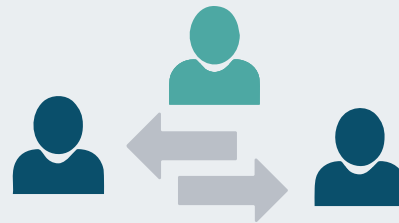
Through connected devices and IoT, CPGs can generate vast amounts of data, and that volume will only increase exponentially as data is used for everything from product refinement to e-commerce to manufacturing and supply chain efficiency. But for many companies, data is still spread across dozens of applications or repository systems; sharing it takes time and effort, and it may arrive in a way that's not easily interpreted by the receiving party.

Another challenge is that the data from smart, connected products is often unstructured—it may be in an array of formats, such as sensor readings, locations, temperatures, and sales and warranty history. Legacy approaches to data aggregation and storage just don't work. Without the ability to store and synthesize data from a central location, businesses are severely hindered and in the fast-paced world of the modern consumer, this isn't good enough.

Modern data platforms can aggregate all kinds of structured and unstructured data. They also provide integration capability to the CRM, operations, finance, and BI platforms companies use. Investing in a robust customer data platform is the only way to effectively leverage all the data that's available.

A robust data platform like [Microsoft Fabric](#) brings together data and analytics tools,

including AI capabilities, into a single unified product. It's a much needed solution in the data platform space when it's not practical or cost effective to deploy multiple disparate tools for secure cloud applications. You can [learn more here](#) about Fabric and how Hitachi Solutions is using it in our [Lumada Empower Data Platform](#) to secure and unify organizational data.



Chances are, you will need the help of a third party to help you assess your current data landscape, evaluate your existing infrastructure, and define best steps for moving forward. Most companies don't have the technical and personnel resources to manage such a shift. Hitachi Solutions has the [data scientists](#) and [change advisory experts](#) to help kickstart a data modernization program with a pragmatic approach so you can truly begin using data as an asset.



The Direct to Consumer Trend

Not all brands will sell directly to consumers, but all must engage directly with customers and connect them to where they can find and purchase the products they want. In recent years, more CPG companies are adopting direct-to-consumer (DTC) to build one-on-one relationships with customers, gain access to first-party data, and create better customer experiences.

A recent sales and marketing benchmark [research report](#) found that 27 percent of consumer goods manufacturers plan to start a DTC solution upgrade within the next 12-18 months. Several “older” CPG brands like Pepsi and Levi’s are turning to direct-to-consumer (DTC), social media marketing, and influencer marketing to keep up with the successful up-and-coming brands in their niches.

In fact, Levi’s increased its global direct-to-consumer business by 18 percent in 2022, fueled by increases in its owned and operated stores, as well as e-commerce. “We’ve definitely got some [ambitious, concrete goals](#) ahead of us. With our digital transformation in mind, we aim to triple ecommerce sales and expand our DTC business to 55 percent of global revenue,” said Levi’s Chief Digital Officer Jason Gowans.

And another CPG giant, Procter and Gamble (P&G), has developed and launched direct-to-consumer platforms for several of its brands where consumers can directly purchase products, cutting out the traditional retail middleman. P&G has also partnered with major e-commerce platforms like Amazon to sell its products directly to consumers, resulting in a [9 percent increase in sales](#).

While some traditional CPG companies may initially have concerns about retail relationships and channel conflict, the DTC model has been proven to improve companies’ ability to understand customers, personalize targeting, and build stronger relationships. And the vast majority of brands will adopt a hybrid model, combining DTC channels with strategic retail partnerships. DTC digital engagement is becoming a key pillar for many brands’ business strategy, but for others, the greater digital sales revenue opportunity will remain with retail partners. What’s clear is that the **dynamics of the retail/CPG partner relationship is shifting from supplier to joint business partner.**



Understanding the Art of What's Possible

All the initiatives and technologies described in this eBook are examples of how CPG companies can get closer to the consumer and to the products they create—it's a huge opportunity for those companies that embrace it and accelerate their efforts.

Just think, the Chief Innovation Officer role didn't exist 20 years ago, and today, according to Forbes, roughly 30 percent of Fortune 500 companies have that role in place. In addition, according to LinkedIn, there are over 13,000 people with the title of Chief Innovation Officer and over 270,000 people with a title that includes the word innovation in it.

All CPGs need to understand the art of what is possible in their industries. Growth will depend on that understanding, along with a blend of corporate commitment, strategic partnerships, and technology adoption. It's up to every company to determine how to take advantage of these technologies and business models collectively to thrive.

Why Hitachi Solutions

Hitachi Solutions is a leading global systems integrator who specializes in Microsoft technologies. Powered by nearly two decades of experience, we deliver end-to-end business transformation through advisory services, industry and technology expertise, and implementation excellence. Our goal is to support and accelerate data and business modernization initiatives that drive value for our customers.

Contact us Today

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