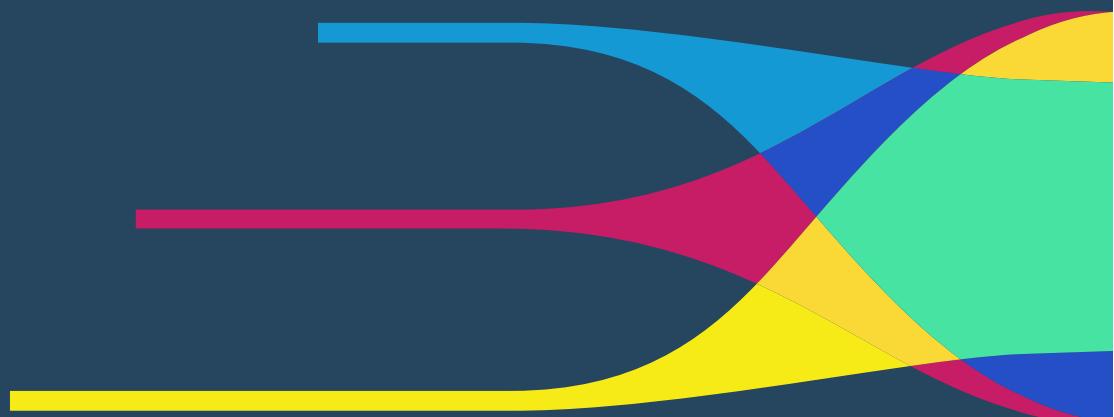




Insights

# Convergent Transformation



PUBLISHED BY **FROG**

**“A new arms race to digitalize every aspect of our physical world is kicking into full gear... companies must build convergent capabilities to compete, or face disruption.”**

## Ian Lee

CREATIVE DIRECTOR

Ian leads Convergent Transformation at frog, a philosophy and practice that integrates products, services, and digital in new ways to create transformative solutions and experiences for companies looking to compete in a future of AI, IoT, and big data.

With 15 years of experience working with clients across product, service, and digital industries, Ian recognized early on the limitations of digital companies' "screens and apps" paradigm. He has helped companies to evolve beyond their core businesses, delivering nearly 100 transformative projects that integrate powerful capabilities across product, services, and digital.

Ian joined frog in 2011 to set up its product innovation practice in Shanghai before moving to London in 2014 to co-found frog's London studio. He spends his time working across frog's UK, Europe, and China locations.

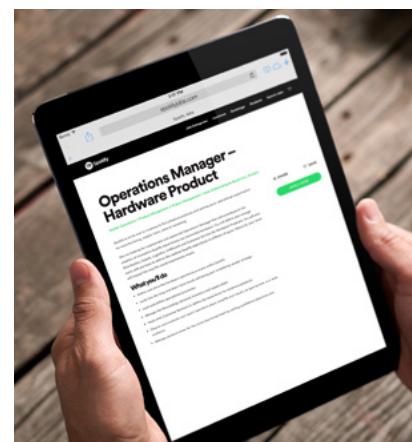
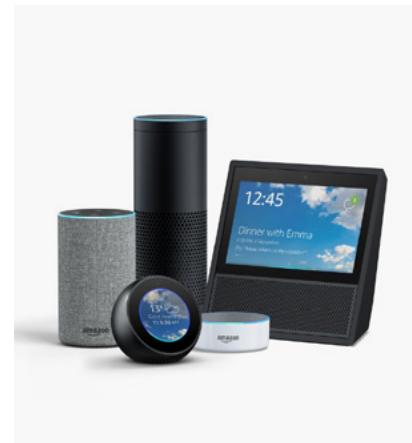
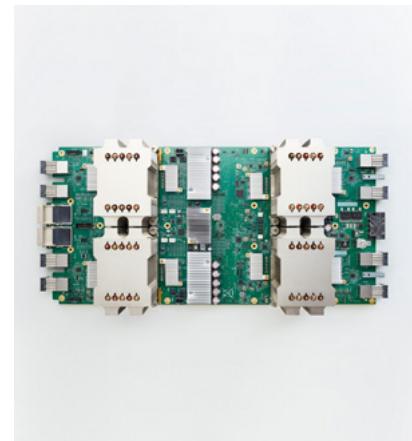


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**“To compete in a future of AI, IoT and big data, forget digital transformation. Get ready for Convergent Transformation.”**

# Intro



## A new transformational era

For years, innovation has largely moved in one direction: towards digital. And yet of late, it seems as if something has shifted. Google, once the purest of internet companies, is now a maker of hardware, with its own smartphones, smart speakers, and even AI processors. Amazon, the quintessential online retailer, has made bold strides with hardware and physical retail with Amazon Echo and Amazon Go. Even Spotify is said to be looking into developing a smart speaker of its own. Suddenly, companies everywhere are trying to redefine themselves into something more.

But why? It is more than just established companies looking for new ventures or new territory. Brands are emerging that are erasing the familiar divisions of online and offline, digital and physical. From the US to China, from corporate giants to the rawest of startups, companies have been reinventing old businesses and pioneering new ones. And in many of these cases, they are building new internal capabilities in order to design, develop, and deliver a new, “convergent” form of products, services, and digital.



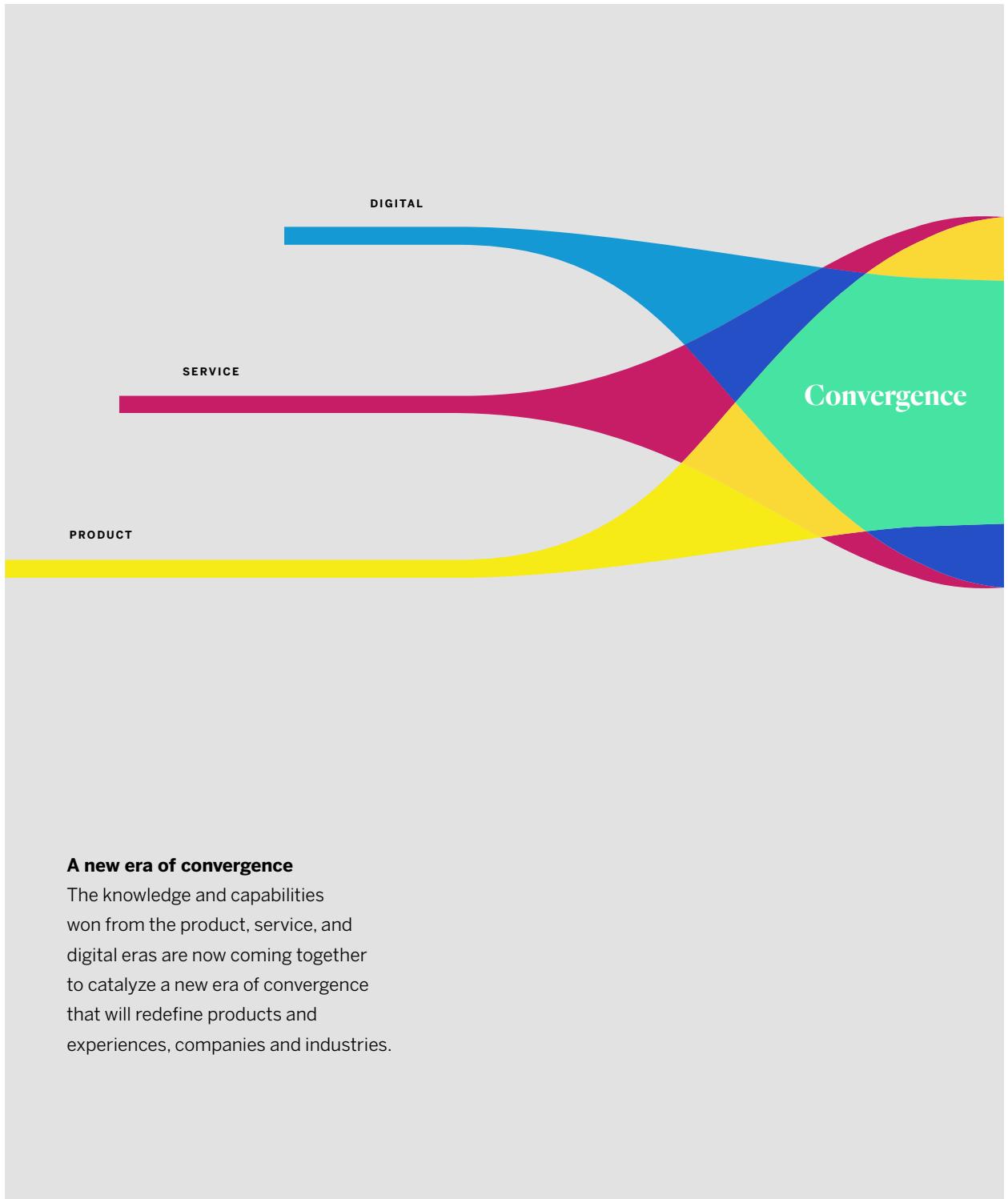
### Looking back to look forward

Close up, it might seem like business as usual, as though tech giants are simply diversifying their businesses with new ventures. But there is more going on here than that. In fact, it is about more than just the tech industry. And to understand the future, we sometimes need to take a few steps back.

The last century gave rise to several transformative eras, periods when the apex of the economy was tilted strongly in one clear direction. The first of these, the product era, was led by new plastic mass-manufacturing and consumers' new appetites for product ownership and status. Coming out of economic slumps caused by war or harsh reforms, consumers were hungry to raise their living standards, while national governments were also eager to increase production, thus kicking off capitalism and consumerism in full gear.

Next, the service era was born out of peoples' desire to purchase more than just a product. Experiences in industries such as travel, entertainment, and retail all blossomed in this period, providing consumers with thrills and satisfaction that went beyond the fleeting feel-good factor of buying a product.

Then, most recently, came the digital era. Advancements in mobile internet technology and the growth of smartphones fundamentally changed the user experience and interaction model of products and services with multi-touch interaction, apps, location, authentication, digital payments, etc. Industries both new and old flourished—social media, financial services, e-commerce—and continue to prosper today as many companies are still profiting from the long tail of smartphone and mobile technologies.



### A new era of convergence

The knowledge and capabilities won from the product, service, and digital eras are now coming together to catalyze a new era of convergence that will redefine products and experiences, companies and industries.



# “Screens, apps, and social media defined the digital era. But now they limit our ability to innovate for the future.”

But the very same things that made digital businesses so successful and so transformative are also what mark their limitations. Companies, including our clients’, already cite app fatigue, distracting social media, and complicated or multi-step screen interfaces as key frustrations in designing experiences that are primarily centered around screen-based devices. Many tried-and-true digital solutions made for PCs or smartphones won’t translate well to the new classes of devices.

Technologies such as AI, IoT, big data, VR/AR, and computer vision and voice interfaces are now emerging or maturing, and the “ambient computing” long imagined by futurists is starting to become a reality across our lives. New classes of hardware and software are leapfrogging one another, demanding innovations of each other even as they open up new possibilities.

And so, companies like Google that once centered themselves around software are seeking a different balance, and looking to hardware precisely so that they can have a say in how the next generation of software, services, and customer experiences takes shape. Meanwhile, more traditional companies far outside of the tech industry, such as furniture, retail, and automotive firms, now have the capabilities at hand to remake familiar things into convergent products and services, and blur the line between digital and physical.

What lies ahead is an era of Convergent Transformation, a shift as profound as that from product to service, or service to digital. Digital, product, and service—all have to be designed together, and, if need be, reinvented together.

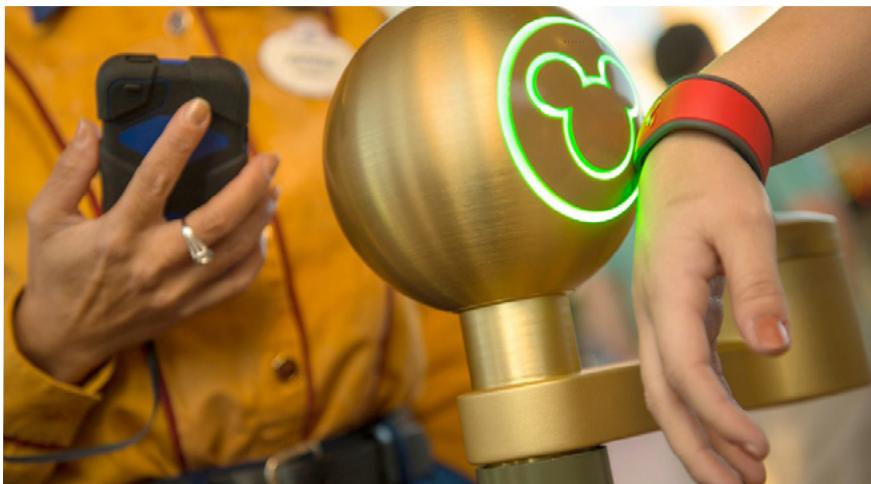
## Convergence comes of age

Convergence isn't a new ideal; frog, in fact, was an early pioneer of convergence and has been practicing it for years. But in previous eras it was difficult for many brands and companies to realize at scale for lack of strategic imperative, organizational capabilities, enabling technologies, and consumer need. This meant that earlier attempts at Convergent Transformation felt like hobbyist or conceptual experiments on the side-lines, or else as shoehorned, inorganic additions rather than truly convergent innovations that had transformative impact. Convergence isn't just a matter of wedging simple digital features into physical products or creating an app for a device, as has been tried so many times before. Real convergence calls on all three dimensions—digital, physical hardware, and services—and weaves them together, from end to end, to transform a company or industry.

But, in each of the previous eras and for most of the digital transformation era, companies and competition operated and competed in a siloed and single-minded way:

- product-first companies made hardware (e.g. consumer electronics, automotive)
- service-first companies focused on services (e.g. brick-and-mortar retail, travel, hospitality, financial services)
- and digital-first companies developed digital experiences or software (e.g. search, social media, applications)

Even at the time, most companies recognized that they were fenced in by their own definition, yet there wasn't a large enough desire to change because competition was clear-cut and consumers were satisfied with singular solutions and narrow experiences, if only because that was the norm.



**From top left:** Apple Snow White design language, Plume Flow smart air quality tracker, Disney MyMagic+ park experience, LQD Palo communications hub, Meizu PRO 7 smartphone (Image: frog), Mobvoi Ticwatch (Image: Mobvoi)

**“The knowledge and capabilities won from the product, service, and digital eras are now coming together to catalyze a new era of convergence that will redefine products and experiences, companies and industries.”**

Fast forward to today, in the start of the new era of Convergent Transformation, and companies no longer know where to look to define their competition. In the past it typically arrived in the form of niche players or small new entrants who could easily be ignored for a while or even acquired if they showed early success. But now, new competition is in the form of an 800lb gorilla company like Amazon or Alibaba, who are disrupting entrenched businesses and reframing industries almost overnight. Alibaba has disrupted financial services and daily commerce in China with Alipay and QR codes. Amazon is disrupting retail all over again by reinvesting itself in brick-and-mortar. And Tesla is disrupting the automotive industry with electrification, software, and autonomous driving AI. The most visionary companies are increasingly seeking out holistic, or convergent, innovations, and in the process challenging legacy firms.

To survive this existential threat, companies of all types will need to transform and innovate in a convergent, rather than an isolated and separated, way. Doing so offers new territory, new goals, and a new vision for companies who have reached their digital benchmarks or are looking to transform into something both new and relevant.

What follows are six opportunities for companies to engage in Convergent Transformation—to create new value for their brands and consumers, open up new markets and revenue streams, and hold their own in a future of increasingly bold innovation and competition.

### **Six Opportunities in the Convergent Transformation Era**

1. Growth: Digital's fight for the physical world
2. Scale: Think in economies, not ecosystems
3. Innovation: Reinvent & reinvigorate industries
4. Relevance: Appeal to a new generation
5. Satisfaction: Create new levels of delight
6. Brand: Unify hybrid experiences

# Growth

Digital's fight for the physical world

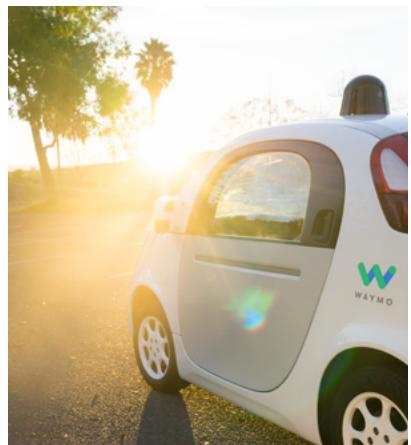
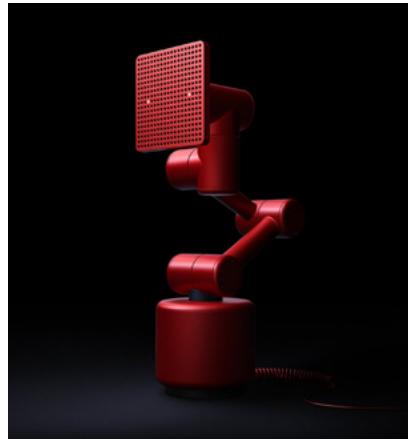


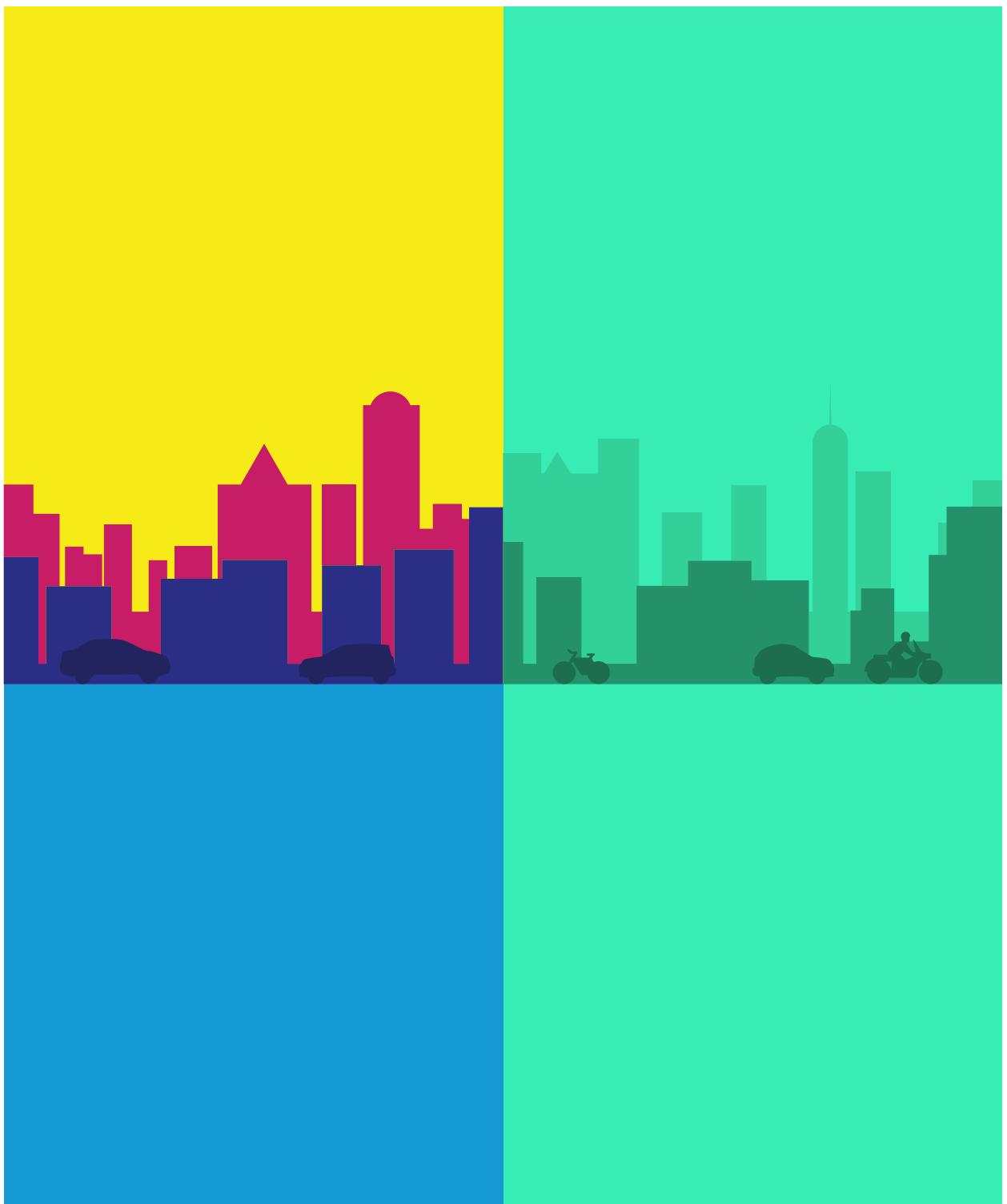
# Growth

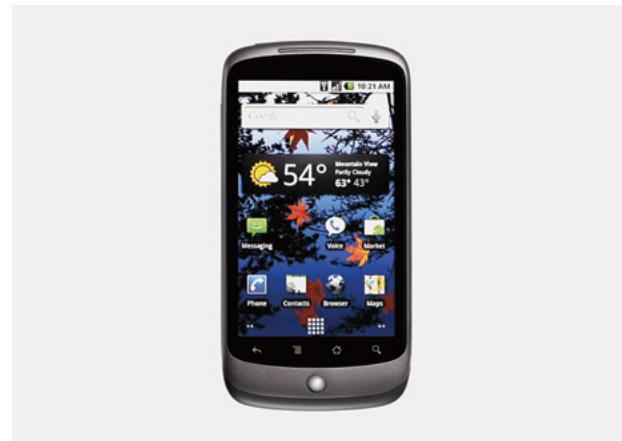
Digital's fight for the physical world

**“As intelligence begins to permeate our physical surroundings, the most innovative digital designs will embrace and embody themselves in new hardware and physical experiences.”**

The digital era has given us advancements in mobile technology and smartphones, which in turn have driven many companies to develop new digital services and software that are themselves mobile, and to become truly meaningful, useful, or enjoyable. But while mobile computing has allowed digital services to be and go anywhere, it is only recently that computing and intelligence have started to become truly ambient. Intelligence can now be embedded into any location in our physical world in the diverse shapes of smart watches, smart speakers, TVs, cars, or refrigerators. This opens up a rich new playing field of potential for all companies (whether they are digital, service, or product-centric), with hardware creating growth opportunities for the distribution and consumption of digital services that are more useful, personalized, and frictionless.





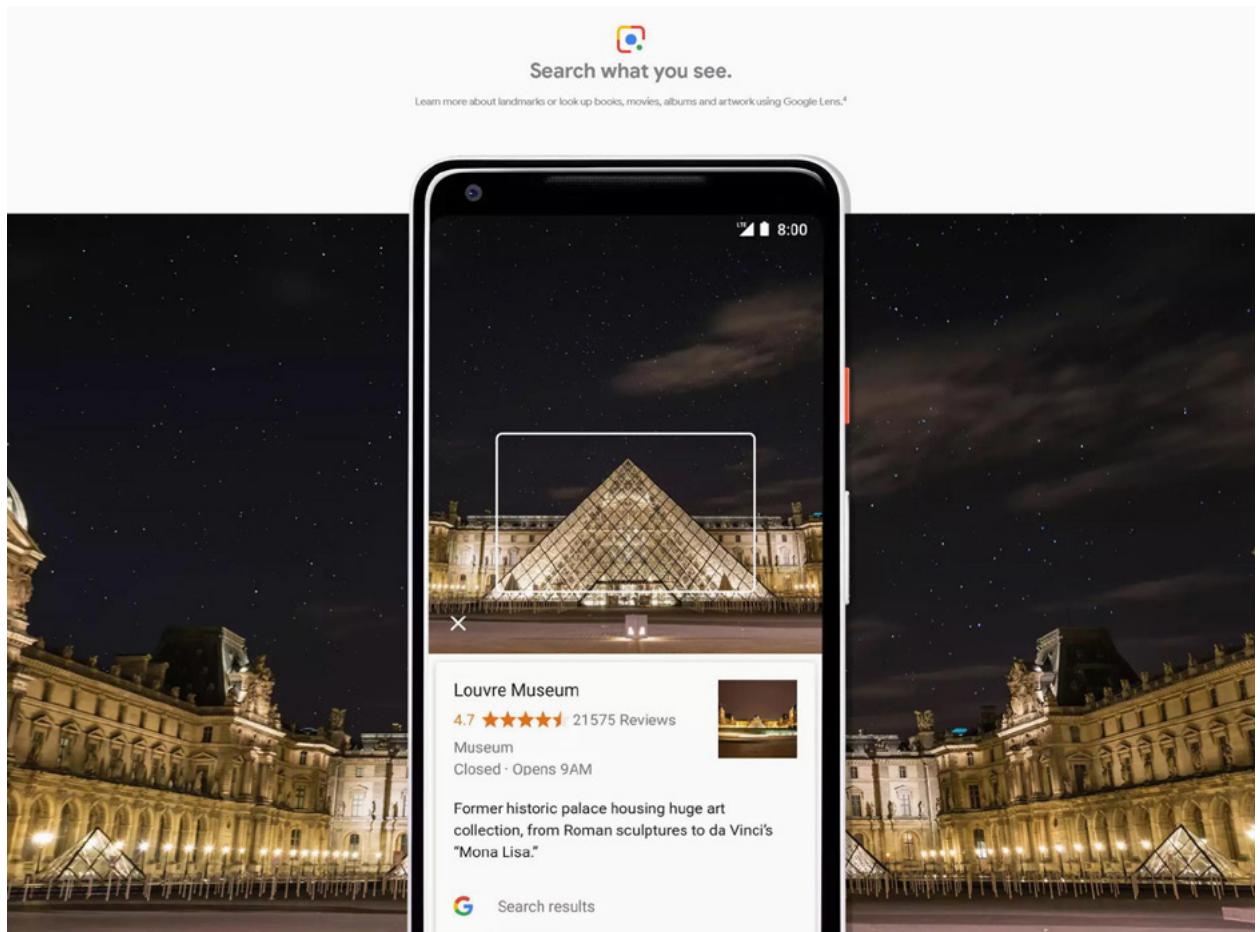


One illustration of this era shift is the Google Nexus smartphone launched in 2010 and part of the new "Made by Google" hardware line. The Nexus phone was made to showcase the capabilities of the developing Android mobile operating system. However, many initially wrote it off as a failed or dead-end experiment; Google just didn't seem serious about hardware, given their underdeveloped strategy around design, development, manufacturing, sales, and support for the device.

But towards the end of 2016, Google surprised the world by announcing a new hardware portfolio with the Pixel smartphone taking center stage. And this time, things were different: design and development were brought in-house, and manufacturing was done by HTC mobile, whom Google have since acquired. Meanwhile, sales and distribution were strongly aided by rave reviews for the product line's powerful integration of product, digital, and services.

This time Google were much more intent in what it was they were truly making: not merely a box to contain their software, but cohesive, convergent products. Not only had they learned from the past, but they had recognized the shift to a new era where AI, voice, vision, ambient computing, and screen and non-screen devices would disrupt their business and much of what underpinned the digital era.

To make their point, Google created a short video commercial in the run up to their new hardware launch, where a white screen containing the outline of the ubiquitous Google search bar slowly morphs into the outline of a mobile phone over the course of the 30-second commercial. The message was direct and simple: the search bar has defined Google for the last 20 years, but it alone could no longer define Google in the future. Hardware would now become a new way to define Google, and provide a new platform to implement its burgeoning AI technology strategy and services in the Convergent Transformation era.





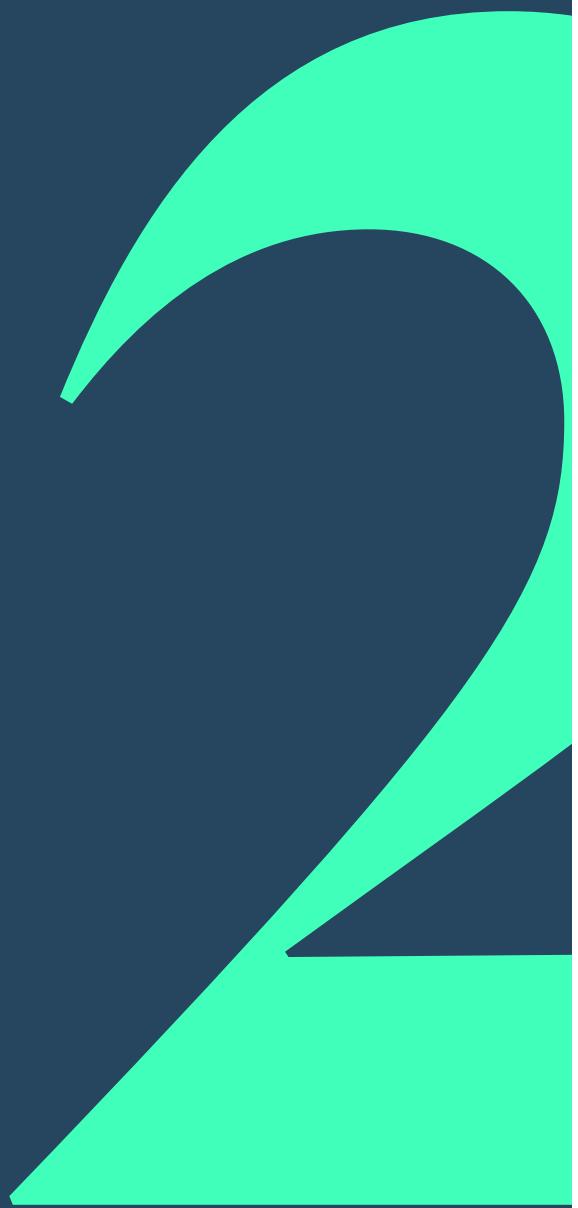
But that was only a turning point. There is more and more innovative work still to come, and not only from large companies. Mobvoi, a startup based in Beijing, China, and specializing in AI and voice recognition technologies, realized that competing on digital alone and only creating smartphone apps would severely limit the potential and adoption of their AI and voice recognition technology. They set about creating desirable hardware and integrating their AI voice service with third party services to drive faster consumer adoption and generate early revenue to continue funding their growth. This culminated in the launch of a smart watch in 2015 and a large investment by Google (view frog design case study here: [LINK](#)), followed by a smart speaker in 2016, and a smart rear-view mirror for the car in 2017, along with a \$180 million investment from Volkswagen.

The trend is clear. As intelligence begins to permeate our physical surroundings, the most innovative digital designs won't just be digital, but will embrace, adapt, and embody themselves in new hardware concepts and physical experiences.

**“Convergent Transformation marks the future for companies that have reached their digital benchmarks and who are looking to grow and hold their own in a future of increasingly bold innovation and competition.”**

# Scale

Think in economies, not ecosystems



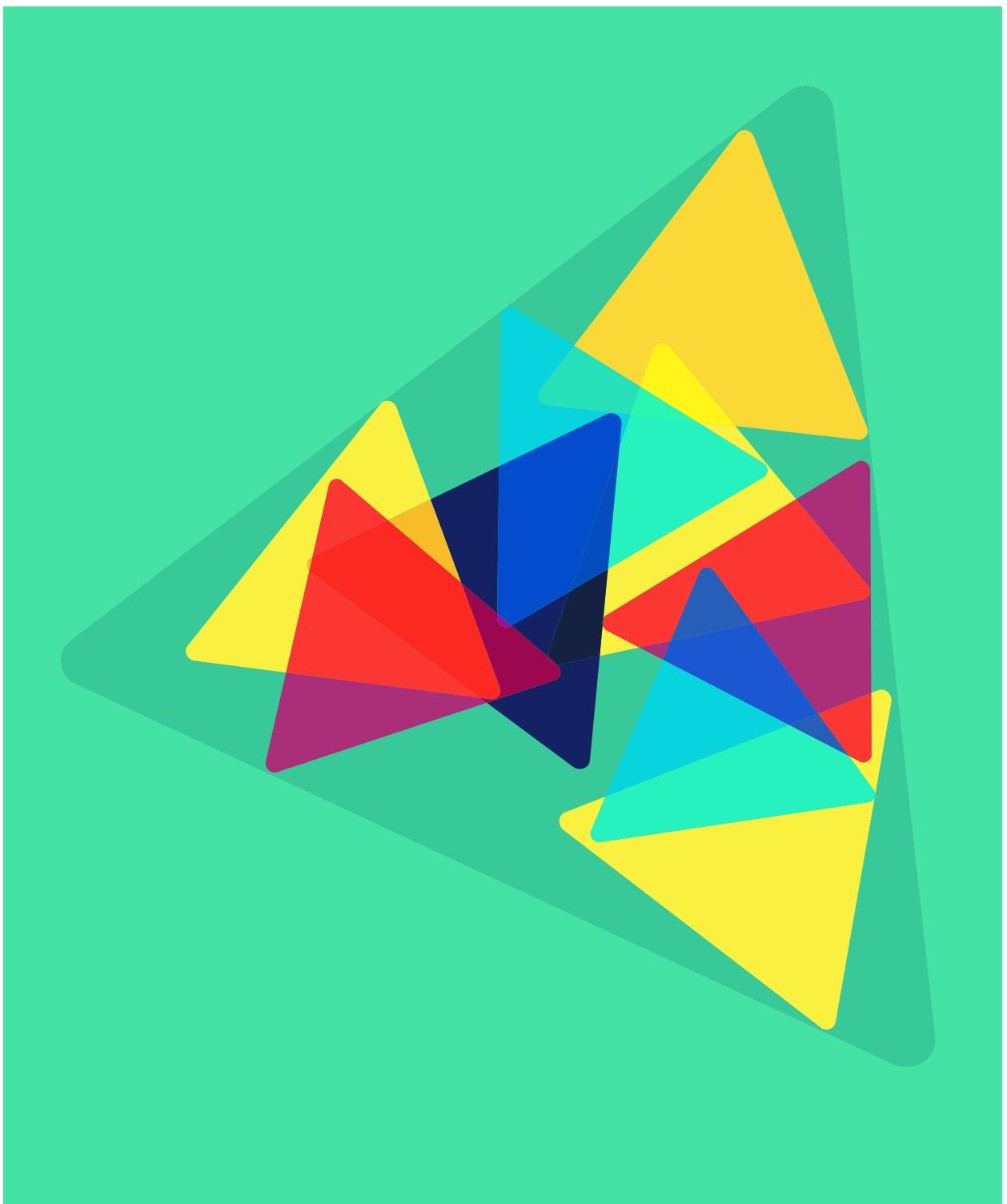
# Scale

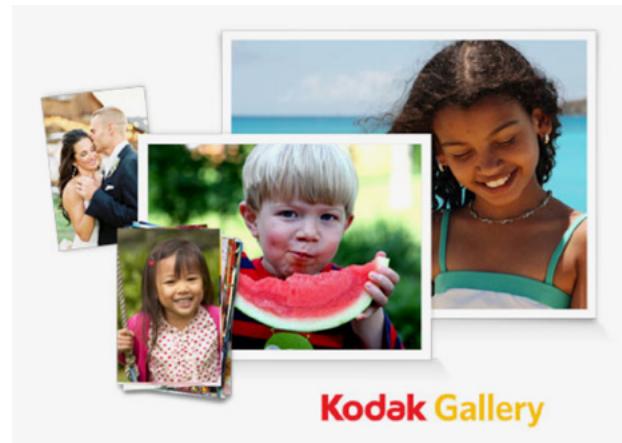
**Think in economies, not ecosystems**

**“To evolve, think in ‘ecosystems’.  
To disrupt and transform, think at the  
scale of ‘economies’.”**

For much of the digital era, companies have been taken with the idea of designing ecosystems. That concept has been a valuable tool in expanding our definition of strategy and design beyond a single product or service to encompass a full set, all working together to create an ideal, end-to-end customer experience.

In practice, however, ecosystem thinking has its limits, particularly if an ecosystem is created solely around the customer and their predetermined goals and needs. The irony is that instead of something dynamic and alive as the name might suggest, most ecosystems' strategies and design are surprisingly inflexible. Once the range of customer needs has been pinned down, the ecosystem approach tends to limit itself to incremental and organic improvements, constrained by what has already been built into it. And that in turn limits a company's ability to adapt to disruptive change from the outside.





For example, in the mid-2000s Kodak embraced the digital revolution and created an exemplar of a well-integrated ecosystem of digital cameras, digital photo frames, digital photo kiosks, and cloud-based photo management and digital printing services. They built that ecosystem around customer needs as they then understood them, making digital photos easier to take and more attractive and affordable to print anywhere. And it worked: their ecosystem took them to No. 1 in digital camera sales in the US by 2005, and No. 4 in the digital printer market by 2010.

And yet by 2012 they were filing for bankruptcy. Their finely crafted ecosystem strategy had left them blind to the rise and ubiquity of smartphone cameras and the social media photo-sharing phenomenon. Worse, it offered them no clear direction for either countering or adapting to a suddenly reshaped competitive landscape or being part of disruptive innovations such as AI-driven image recognition and computer vision technologies. They announced the end of their ecosystem, retreating to focus on the corporate digital imaging market instead.

Leading companies are now going beyond thinking in terms of customer-centric ecosystems, to thinking and designing at the scale of “economies.” These economies can be regarded as the digital equivalent of a country—an entire open-ended system where users can play, work, live, learn, and do business. Instead of starting from a ground-up approach with deep consumer wants and needs, an economies perspective takes a top-down, wider field of view, considers technologies and infrastructures, and how to put them to use. Whereas the ecosystem approach often leaves companies trying to defend what they have already built, economies thinking anticipates that even the fundamentals of a market—like how people take and share photos—can always change.





Alibaba is one such company that has expanded well beyond an e-commerce ecosystem to its own economy—not only do they have leading e-commerce platforms for B2B (Alibaba), C2C (Taobao), and B2C (Tmall), but they have also invested heavily in many sectors outside of their core that would likely be considered crazy from an ecosystems approach. Alibaba now encompasses a staggering range of businesses and investments—including Hema, Sun Art Retail, Lianhua, RT Mart, Suning, Didi, Ofo, Souche, Shenzhou Car Rental, Xiaopeng Motors, Banma, Tmall Genie, Cainiao, Sina Weibo, Alibaba Pictures, Wanda Film, Youku Tudou, Ant Financial, Alipay, Yiguo, Ele.me, China Unicom, Alibaba Cloud, and many more—covering sectors as varied as physical retail, transportation, smart home products, logistics, social media, entertainment, healthcare, finance, online-to-offline (or O2O) services, and cloud services.

From top left: Alipay mobile payment platform, Tmall Genie smart speaker, Youku-Tudou online video service, Ofo bike-sharing service, Space Cycle fitness gyms, Home Times retail, Cainiao logistics, Banma internet car solutions, Ele.me O2O food delivery platform (Image: Alibaba Group)





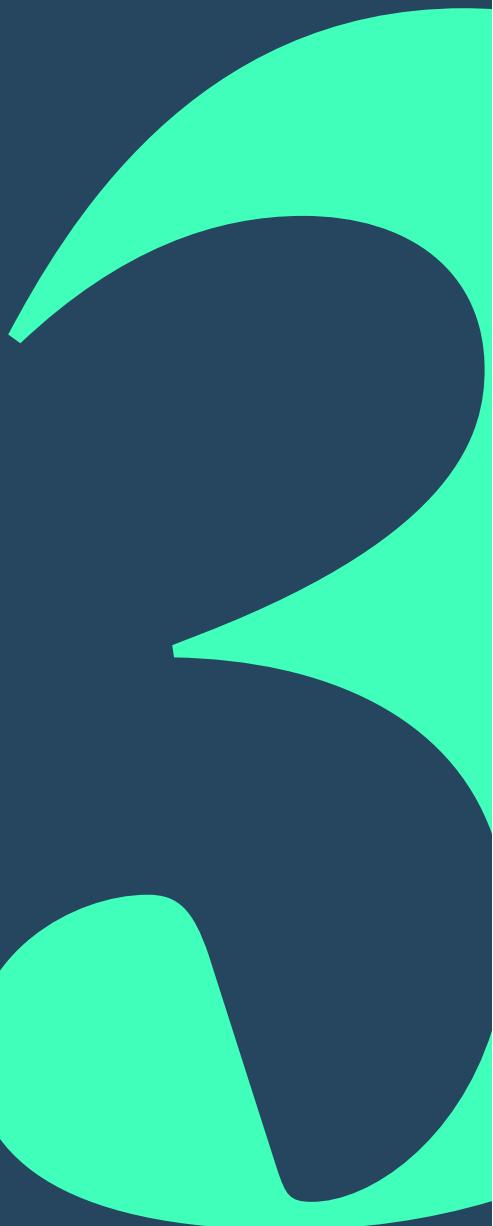
Thinking on the scale of economies, rather than ecosystems, also lets us start thinking about how to build the infrastructure for the future or for a developing industry. Whilst Alibaba's economy is already impressive as is, it can currently only exist in modern megacities that have the connectivity infrastructure in place to allow for high-bandwidth content, cloud, and data services. But what happens where this infrastructure doesn't exist yet?

Facebook's Aquila drone is one attempt to answer that question. An ultralight, solar-powered drone designed to stay aloft for months, it is meant to give wireless internet connectivity to areas where little or none exists. Effectively, it is infrastructure in the form of a single piece of airborne hardware (and, of course, also happens to provide a channel to Facebook's many digital services). There are surely other possible solutions waiting to be tried, and for infrastructure problems beyond just internet access, but whatever those solutions might be, they will require genuinely convergent capabilities and strategies.

Alibaba and Facebook may be global companies with vast resources, but any company could stand to gain from adopting "economies thinking." The goal, after all, isn't necessarily to build an entire economy all your own, but to recognize strategic openings in other sectors that lie far outside of your ecosystem or comfort zone. Alibaba is experimenting, finding businesses well outside of its core operations where it can apply its technical strengths in new ways. Facebook is seeking out infrastructural gaps in a given sector and learning how to fill them. These are strategies that can serve companies at any scale.

# Innovation

Reinvent & reinvigorate industries



# Innovation

## Reinvent & reinvigorate industries

**“Convergent Transformation will drive completely new experiences and formats, and reinvigorate industries that were left behind in the digital era.”**

Companies that have convergent capabilities are reaping the benefits from being able to combine physical, digital, and services in extraordinary ways to create entirely new formats and reinvigorate old ones. Retail is one such industry that is being disrupted through Convergent Transformation, as companies such as Amazon, Alibaba, and Suning converge digital and physical to create entirely new service experiences for customers.

Over the last 15 years, retail has gone through a transformation that was as unexpected as it was radical. Early in the digital era, e-commerce began to challenge brick-and-mortar retail, and while some industries fared better than others, it seemed as though the two channels—physical and digital retail—could only ever be at odds, one taking from the other in a zero-sum competition.







But in what has been dubbed "New Retail" in China, a hybrid of physical and digital has produced a new experience out of old formats. Online and offline shopping are smoothly integrated, each complementing the other.

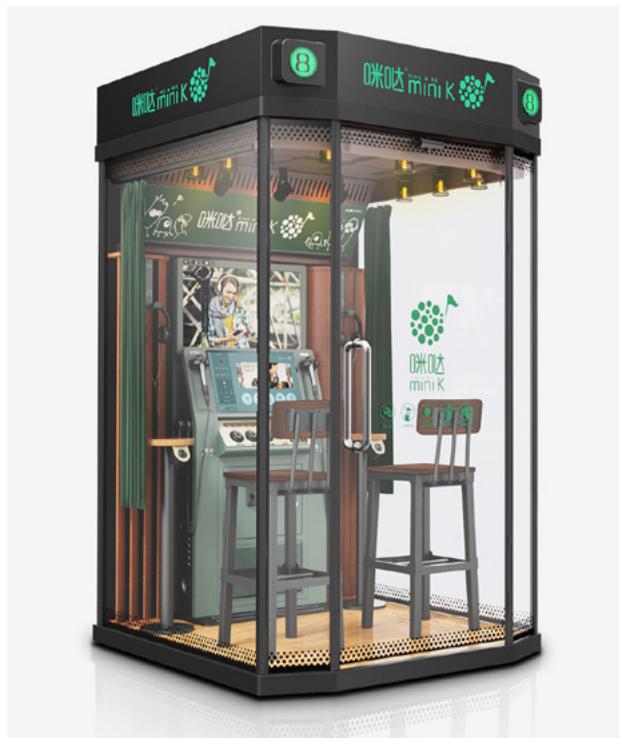
Here again, Alibaba has been a pioneer with its Hema supermarkets in China, which represent a blending of physical and digital shopping experiences. As a shopper you can order your groceries online and have them delivered, or you can visit the store in person to handpick and check the quality and authenticity of your items, then pick up some fresh seafood, have it cooked right there, and finally have it all delivered to your home. Even better, you don't need to bring anything to Hema except your smartphone. All product information, personalized recommendations, and payment is powered entirely by their Alipay smartphone app. And of course, all of it is supported behind the scenes by Alibaba's big data and logistics to ensure delivery of your order within just 30 minutes.

But this is only the first generation of something new; what comes next is bound to be more sophisticated, and more deeply convergent. As digital feeds back into the physical retail experience, ever more innovative formats are appearing. A suite of technologies, from humble QR codes to cutting edge facial recognition and tracking, are enabling radical changes to conventional businesses. By now, many have heard of Amazon Go, Amazon's experimental grocery store that uses, among other things, AI image recognition and sensors to allow shoppers to bypass the checkout process entirely. But it is not alone, and many of the latest examples are in China, with multiple startups venturing into the business of unmanned convenience stores, like Bingobox, and even still more far-reaching experiments like Moby, a mobile autonomous store that can drive itself to where customers are or most likely to be.

Although retail is setting the pace, other experiments in Convergent Transformation are happening to create new formats and experiences in other categories including entertainment, as with Mini K's new convenience karaoke format, or fitness, as with Supermonkey's small, on-demand gyms.

Convergent Transformation can drive completely new experiences and formats, and more importantly, reinvoke industries that were left behind in the digital era.

- 1.Bingobox cashier-less convenience store (Image: Bingobox)
- 2.Moby autonomous self-driving store concept (Image: Moby)
- 3.Supermonkey 24/7 self-service gym (Image: Supermonkey)
- 4.Mini K self-service karaoke booth (Image: Mini K)



# Relevance

Appeal to a new generation



# Relevance

## Appeal to a new generation

**“Convergent Transformation pushes businesses beyond their comfort zones—whether that be digital, products, or services. But by doing so, companies stand to gain new customers, new revenue streams, and new data.”**

Digital technology has a habit of making established legacy brands feel outdated and irrelevant, especially to younger consumers that see themselves as “digital natives” and who are “tech-savvy.” However, companies that understand the potential of convergent innovations stand a better chance of maintaining their relevance and appealing to a new generation of consumers.

IKEA was one such company that faced this predicament. Although IKEA had made it easier for everyone to furnish and decorate their homes, people still looked down on them as a company that “sells lower quality furniture that takes hours to put together,” and its brand had started to feel “over-familiar” and stale.

To address this issue head on, the company transformed from a product-centric brand that made “dumb” furniture to a convergent company. It began offering a new range of smart lighting products, launched in 2017, and also on-demand services to help customers build their furniture or install products, such as through the acquisition of Task Rabbit in 2017. And it is continuing to explore the possibilities of Convergent Transformation, such as in its current

efforts to enable its smart lighting products to work with Amazon’s Alexa voice recognition platform. However, the biggest impact of building digital capabilities, products, and services, is that IKEA now has the potential to be a formidable smart home player, as it can use its global reach and manufacturing prowess to integrate technology (whether developed in-house or from other partners) into a huge range of furniture, products, and services at enormous scale.

As IKEA’s case shows, convergence isn’t just for the likes of Google and Alibaba. If it’s relevant even for a furniture company from the 1940s, then it is relevant for everyone, whether they began as product, digital, or service-centric.







Convergence even has the power to reverse a company's fortunes and bring it back from the brink of obsolescence, as in the case of Nintendo. The Nintendo Switch, launched less than a year ago, is a perfect example of marrying the digital and physical to make a brand relevant again and create a new generation of consumers.

Nintendo was always a company that believed in the power of digital and physical to deliver enjoyable and unique gaming experiences, but that belief was tested almost to its breaking point five years ago. Their latest gaming hardware of the time, the Wii U, was universally received as a disappointment and failure. Mobile gaming on smartphones and tablets was a huge, growing market due to its versatility and low cost, and Nintendo games looked unrefined, even juvenile, compared to the cool and immersive realism of games such as Call of Duty. Things looked so dire for Nintendo that Forbes even ran an article headlined: "It may be time for Nintendo to make games, not consoles."



But Nintendo didn't listen. They stuck to their belief that the convergence of an amazing physical and digital experience was the way to create growth, differentiation, and consumer desire, and in March 2017, they launched the Nintendo Switch.

It was a bold, high-risk gamble, with market analysts expecting that the \$300 device would get off to a very slow start and appeal only to die-hard Nintendo fans. They estimated that sales for the specialized piece of hardware would fall in the range of 5 million units for its first year.

But what the analysts could not see in Nintendo's newest creation, consumers surely did. Before its first year was even over, sales for the Switch were already at 17 million units, along with 53 million games sold, and in the process, it has created an entirely new generation of Nintendo fans from kids, adults, and hard-core gamers alike. On the back of that success, Nintendo's share price has more than doubled from 23k JPY (1st Mar 2017) to 48k JPY (1st Feb 2018).

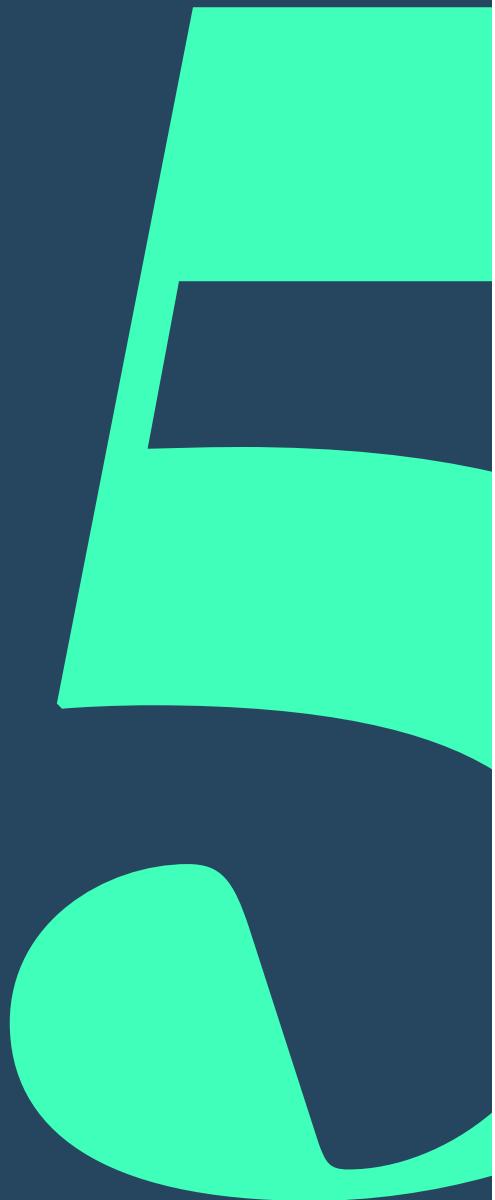
Nintendo's convergent strategy is explicit, as Reginald Fils-Aimé, the president and COO of Nintendo of America, makes clear: "Our focus has been on the creation of unique and differentiated experiences and we do that through the hardware, through the accessories, and that's going to be something that continues well into the future. Given that type of mentality, the hope is that we would continue to bring experiences that consumers have never even thought about. That's our goal."

The Nintendo Switch proves that, even in fast moving and disruptive times when everything is on the line, believing in and getting the convergent formula right can make brands relevant to a whole new generation of consumers.

**“Convergent companies create customer experiences and strategies where product, service, and digital shape one another under a unified vision.”**

# Satisfaction

Create new ways to delight



# Satisfaction

Create new ways to delight

**“When product, service, and digital are thoughtfully integrated together, even the most humdrum products like household appliances or cars can continue to evolve, bringing new opportunities for customer delight.”**

Some product-centric industries, like phones and cameras, were entirely upended by the digital era. But there are others that have seen little fundamental change in decades. The engineering behind a product might improve, or it might accrue new features, but many product-centric industries have seen few real breakthroughs in customer experience in years. Through Convergent Transformation, however, even the most refined products can achieve unprecedented levels of delight.

Consider Tesla. Despite previous quality issues and ongoing production problems, the still young company has topped the Consumer Reports' Annual Owner Satisfaction Survey for the last three years, and 90% of owners have said they would buy a Tesla again. Tesla has succeeded due to their convergent capabilities—they meld expertise in high performance electric motors and batteries with expertise in digital and software. Their mindset about what a car should be parallels what Google and Apple have done with their smartphones: ensuring that software works fluidly together with hardware. And suddenly, thanks to over-the-air (OTA) updates, Tesla can continue to deliver new features to their drivers, even after purchase.

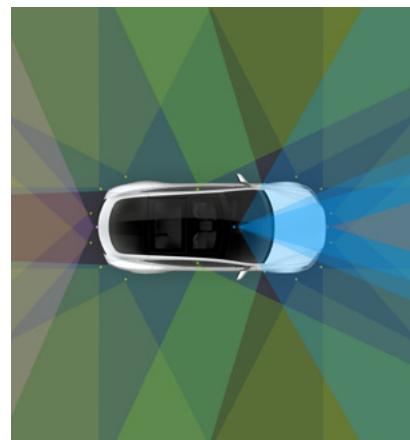
For instance, just a few months after launch, Tesla's Model S P100D received a software update called Ludicrous+ that essentially translated into a hardware upgrade: the car was now able to accelerate from 0-60 mph in a mere 2.28 seconds, beating flagship rivals such as Lamborghini, Porsche, Ferrari, and Bugatti.

Even product recalls, which are the bane of traditional automotive and dealership service centers, are now becoming a thing of the past as Tesla can correct problems and issue critical updates wirelessly wherever the car is. Last year the company discovered an issue with a sensor in the Model X's front passenger airbag. For a more traditional carmaker, this would have required a recall, demanding drivers take time out of their day to visit the dealership for a replacement or recalibration of the sensor. Tesla, however, was able to correct it with just an OTA update. Rather than having to make tiresome trips to the dealer for minor issues, Tesla owners can go about their day while the car fixes itself.





Traditional automakers also typically pride themselves on physical and sensory cues such as exterior styling and the sound of a new engine. But while you are certainly going to have a smile on your face when you have just bought a new car, that smile fades as features get outdated and the car's value depreciates dramatically. And, meanwhile, the cost and effort of servicing takes its toll on you and your bank account. By contrast, Tesla's strategy of treating the car as a convergent and updatable IoT gadget has paid off so far, and it highlights one of the key differences between traditional and convergent product design: in the past, any product a consumer might buy and use was likely to only ever decline in performance, not improve.







Even smart refrigerators may be redeemed by convergent design. To date, smart refrigerators from established product-centric companies have felt like gimmicks, overstuffed with features like Wi-Fi and touchscreens that, while useful in so many other devices, in white goods provide little actual utility to their owners. But JD, one of China's leading e-commerce players, launched its own line of smart refrigerators in 2017, and may finally have made them worthwhile—not by adding yet another feature to the refrigerators themselves, but by designing them to work within their larger services. Since customers can order their groceries from JD directly, that data can be linked with the refrigerator, both for keeping track of what food you have on hand and discovering what you might want to order next. And that has the potential to turn the appliance from just a "dumb food storage box" into a "smart food service center."

When software, hardware, and services are thoughtfully integrated, even the most humdrum products like household appliances or cars can continue to evolve, bringing wholly new opportunities for customer delight and utility.

**“Convergent Transformation calls on all three dimensions—product, service, and digital—and weaves them together, from end to end, to transform a company or industry.”**

# Brand

Unify hybrid experiences



# Brand

## Unify hybrid experiences

**“Convergent Transformation ensures companies can safeguard and elevate their brands as they cross online and offline worlds.”**

Brands are no longer built on communications, but through customer experiences. Designing seamless, high-quality customer experiences across every touchpoint, digital and physical, requires companies to think and design convergently to safeguard and elevate their brand.

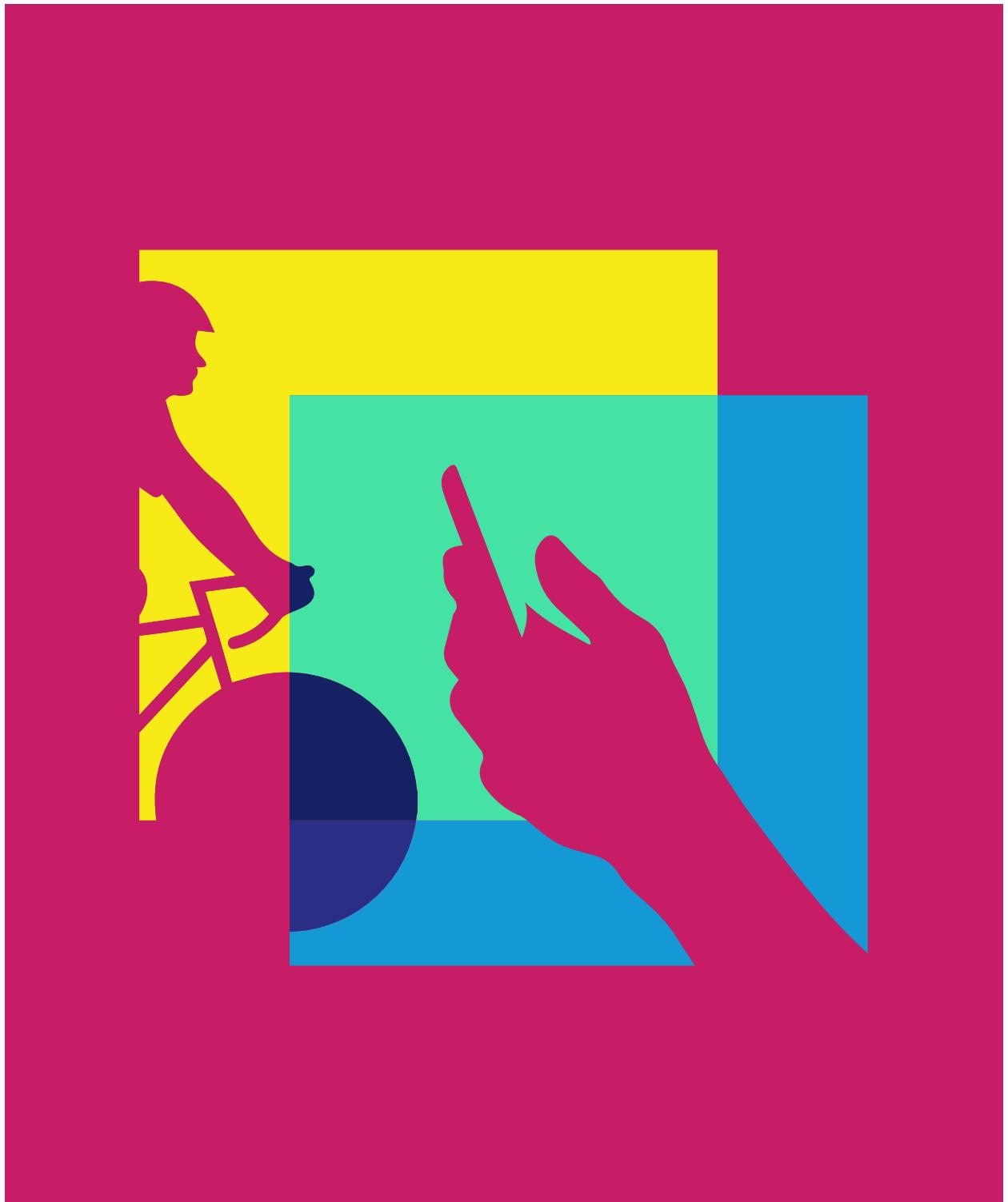
Nowhere is that clearer than in the sharing economy. The last several years has seen explosive growth in online-to-offline (O2O) services, with digitally native brands extending themselves back into the real world of physical experiences, products, and location-based services. These digitally native companies have excelled in the online component of O2O—discovery, ordering, booking, and payment via a smartphone app. And for some that is enough. When a digital platform manages the delivery of other brands' goods—for instance, as in the case of restaurant delivery—customers tend to accept the difference between the platform and product. But for others, such as in ride-hailing or home-sharing services, customers usually see the platform as accountable for the entire experience, even when they do not strictly own the products or have complete control over the physical “assets.” When such companies try to stick to digital-only strategies and fail to think convergently, they risk leaving their customers with a disjointed brand experience.

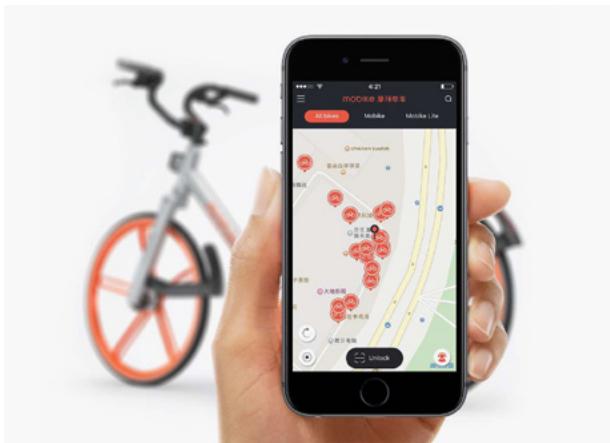


For example, many car-sharing services have a great digital app experience for booking cars easily and quickly, and several services promise exceptional convenience by being able to pick up a car and drop it off anywhere in its serviceable area. But it is in the physical experience where these brands stumble.

To illustrate, after booking, the first physical touchpoint with the actual car is something literally just pasted on: a cheap, out-of-place sticker on the windshield that the user must touch their membership card against in order to gain access to the car. For brands that have premium cars in their service, this can look and feel inappropriate. Once inside, customers can face a laborious log-in process through the car's interface, sometimes needing to preregister the amount of time they want the car for and being prompted to get out of the car to inspect the vehicle for damage, cleanliness, and any other problems. The awkwardness is compounded by the fact that, even within a single service, each car's interface can be very different, requiring the user to relearn the log-in process each time. In an attempt to remedy the problems, some companies have installed smartphones in the cars simply to act as log-in devices, but as a solution it still falls short.

These disjointed and disconnected physical experiences are a world away from the seamlessness that underpins these brands' digital experiences and show that where hybrid digital and physical products or services are not thought of or designed in a convergent way, the result will be something fractured and inconsistent. A truly seamless and consistent brand experience requires a convergent digital and physical solution.





There are some O2O brands that can manage to own or control the physical experience and hardware "asset" extremely well, like Mobike, a shared bike company that has been wildly successful in China over the last two years, and who design and manufacture their own bikes and smart parking stations so that it seamlessly connects and continues the brand experience from digital to physical and back again. But even if a brand does not produce the "hardware" its customers must interact with, there are still ways to create a convergent and holistic brand experience.

For example, the ride-hailing service Lyft has a well-crafted app and digital experience just like so many other brands, but it also has a deceptively simple solution to the rider experience in the form of Amp, an in-car, light-up display. When a driver approaches a pickup location, the Amp will light up in a specific color, which the rider's phone screen will also match. The rider can also hold up their phone like a beacon if necessary, and both rider and driver can then spot one another more easily, especially at night or in crowded areas. It's an uncomplicated solution to the fumbling about that's so common in the pickup process, and more to the point it helps to ensure a consistent experience with the brand—and not just because the

Amp has Lyft's logo on it. Lyft seems to understand that its users are really riders, and most of their experience with the brand is not through their brief use of an app, but in the ride service itself. By aligning digital, hardware, and service, Lyft is able to create a far more cohesive brand experience, even without ownership of the cars in use.

Too many entrants into the sharing economy still see themselves as digital-only companies, assuming it is enough to be technology platforms for facilitating supply and demand. But because they do not own or design the physical assets their customers engage with, they are leaving a large part of the brand and user experience to chance. Thinking convergently about the experience and the solution enables a brand to be both innovative and holistic, safeguarding against a broken brand experience.



**“When companies try to stick to digital-only strategies and fail to think convergently, they risk leaving their customers with a disjointed brand experience.”**

# Summary

All roads converge here



# “Convergent Transformation is the future for companies that have reached the limits of what they hope to do in the digital domain.”

## A new frontier of transformation & innovation

For decades, innovation has tended to fixate on one target at a time: first on physical products, then services, and then digital. Even now, much of innovation still tends to happen in silos. It's either constricted by an organization's structure and workflows (e.g. digital and product teams rarely interact with each other), or by an organization's image of itself as a digital, service, or product-centric company, often resulting in a bias for what the solution should be. This segregated or one-sided approach to innovation leaves us with solutions and customer experiences that are rarely seamless, feel incomplete, and are often frustrating.

Recently, however, we have seen the beginnings of Convergent Transformation, in which digital, products, and services shape one another under a unified vision. This has long been an ideal for leading companies, and one that frog has always championed. But now, the burgeoning technologies of AI, IoT, big data, and ambient computing are all enabling, and demanding, a new level of convergence. Leading digital companies like Google, Alibaba, and Amazon have already begun to catch on, and have been treading into

both competitive and stagnant markets with novel product and service offerings of their own. Meanwhile, companies in more traditional industries like furniture, automotive, home appliances, and others have started to avail themselves of the same capabilities, reinvigorating and reinventing their businesses. And perhaps most importantly of all, there are startups appearing that are convergent at their roots, built from the beginning without regard for old boundaries.

All of this makes Convergent Transformation a natural next step for companies that have reached the limits of what they hope to do in the digital domain.



## A new frontier of value

Of course, there isn't just one way to pursue Convergent Transformation, but many: growth, scale, innovation, relevance, customer satisfaction, and branding. Digital-centric companies can explore the use of physical products. Companies of all stripes can strategize by thinking in economies and build up capabilities across multiple sectors and channels at once. Old industries can be revitalized—or maintain their relevance with newer generations. Familiar products and services whose potential for innovation may seem to have been tapped out can achieve new levels of delight and utility for their customers. Brands can own the entire end-to-end customer experience, rather than a one-off transaction, generating greater customer satisfaction and loyalty.

And there are plenty of problems that seem ripe for convergent solutions. How do you build smart infrastructures, and more importantly realize their fullest potential? How can you find the missing pieces that would give a nascent industry such as VR/AR true mass appeal? Or how do you capture data in the physical world that existing digital technologies simply can't see or achieve alone? These and many other

problems can't be addressed in any other way except by convergent design.

And when companies take advantage of these opportunities, extraordinary things can result: hardware and software guiding one another's evolution; products that, thanks to new digital technology, can continue to develop and improve after purchase; services and industries that are reinvented into new formats. And that is to say nothing of the more basic advantages. By extending themselves beyond their established core businesses, whether that be digital, products, or services, companies stand to gain new revenue streams, new data, new customers, and new markets.

# “To succeed, companies need to root out hidden biases and organizational barriers that could stymie convergence.”

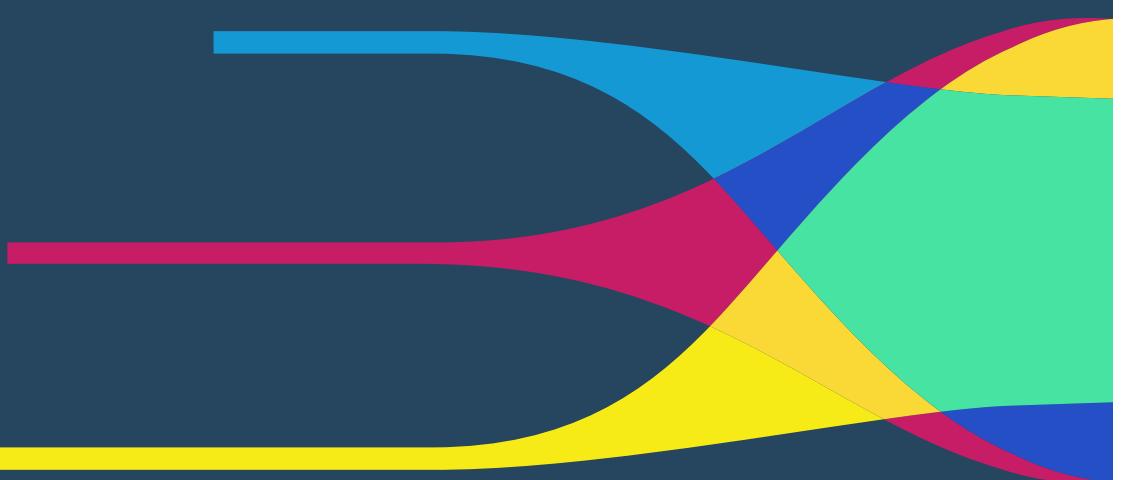
## All roads converge here

Convergent Transformation is thus more viable, and also more necessary, than ever before. And as the cases discussed here show, it is within the grasp of organizations in any sector, whether they be internet giants or furniture companies. But it has to be remembered that convergence is more than just online-to-offline services, or thoughtlessly injecting digital features into an established product or service. Digital, products, and services need to be conceived of and designed convergently, from beginning to end.

To succeed, companies will need to examine both their own organizations and cultures whilst looking deeply at their competitive landscape and beyond it: root out hidden biases and organizational barriers that could stymie convergence, and hunt for market areas that remain one-dimensional and underdeveloped, places where an industry or market centers around pure products, digital, or services lacking any real convergence.

It is precisely because convergence dissolves the old divides that companies in any industry can pursue it—and it's also why companies of every industry have to prepare for it. Consumer expectations, enabling technologies, and competitive pressure arising from unexpected directions are themselves all converging to push companies forward into this next era of innovation.

The future is  
**Convergent  
Transformation,**  
and it will belong to those  
who transform with it.



# About frog

frog is a global design and strategy firm. For 50 years frog has worked with brands like Sony, Apple, Disney, GE, and IKEA to create convergent systems of products, services, and digital that deliver distinctly better experiences.

We strive to touch hearts and move markets. Our passion is to transform ideas into realities. We partner with clients to anticipate the future, evolve organisations and advance the human experience.

**To start a conversation about Convergent Transformation in your organization, contact** [business@frogdesign.com](mailto:business@frogdesign.com)

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