Shifting to Experience First

Practitioners' views into building
viable connected products businesses

accenture

Why this report? Why now?

In 2019, 41 percent of product companies were already eager to have smart products account for more than 50 percent of their portfolio by 2022. By their own admission, smart products accounted for only 7 percent of their portfolio in 2019.

Source: Accenture Research Survey 2019

With 2022 approaching, we wanted to test the progress that companies have made in their smart connected products journey. We interviewed senior product executives at various Fortune 500 companies. These conversations revealed that many are struggling to build successful businesses with next-gen products.

"Not long ago we took the decision to discontinue creating our own branded smart devices for now. Fundamentally our customers don't see the value of paying for the devices, and we weren't efficient at developing and maintaining them."

─

Product Executive
Global Comms & Media Firm

"I have to say the volume that we've sold is not that large. Our customers barely think of acquiring a machine."

─

Product Executive
Fortune 500 FMCG Firm

"We've been doing smart connected devices for a while now, and we now know what doesn't work, but we still don't really know what does work."

─

Product Executive
European Comms & Media Firm

"We're not doing the perfect job yet of transmitting the value message. Customers don't want to instantly buy our new devices."

─

Product Executive
Large Fitness Equipment Company

"Our industry's focus is too often on the connectivity, which is actually just a technical feature. We frequently fail on delivering valuable use cases, built on that connectivity, which would benefit our customers."

─

Product Executive
Global Domestic Appliances Company

Source: Accenture Research Executive Interviews, 2020

So, what's the issue?

Disappointments were bound to happen, since executives have been relying on their old operating models. Those were built to deliver and maintain physical products and to develop and launch smarter products.

Typically, a high degree of operational inertia exists in many organizations, even in times of rapid technological advancement. Accenture has found that only one-third of companies evolve their operating models when they embrace new technology. Consequently, it was inevitable that many companies would struggle with their attempts to pivot away from their familiar business of providing unintelligent, unconnected devices.

Selected quotes from executives about their prevailing product operations challenges:

⊕ **Ways of working**

"Companies need a wider cultural change within the organization. Next-gen products should spark a business transformation, not just a portfolio expansion."

⊕ **Product development**

"We are obsessed with the product BOM."
"For us, time-to-market trumps understanding new value proposition possibilities of next-gen products."

⊕ **Product design**

"We think that product differentiation would be harder if we build on a common technology architecture."
"So far for us, designing a successful product has taken priority over designing a sustainable product."

⊕ **Post-launch product governance**

"We struggle to understand and plan for the tasks, cash flows and resources needed to support ongoing product operation processes once the product is in the customer's hands."
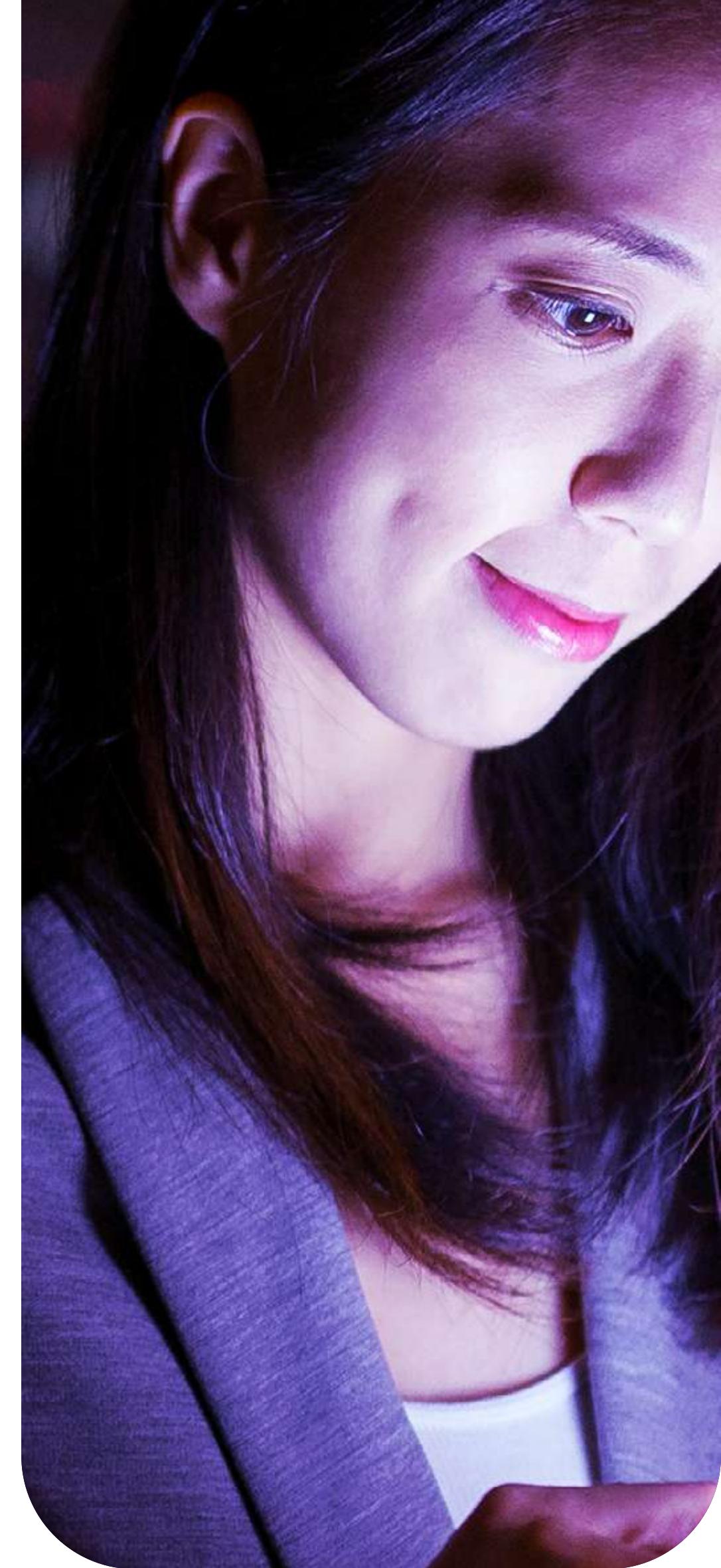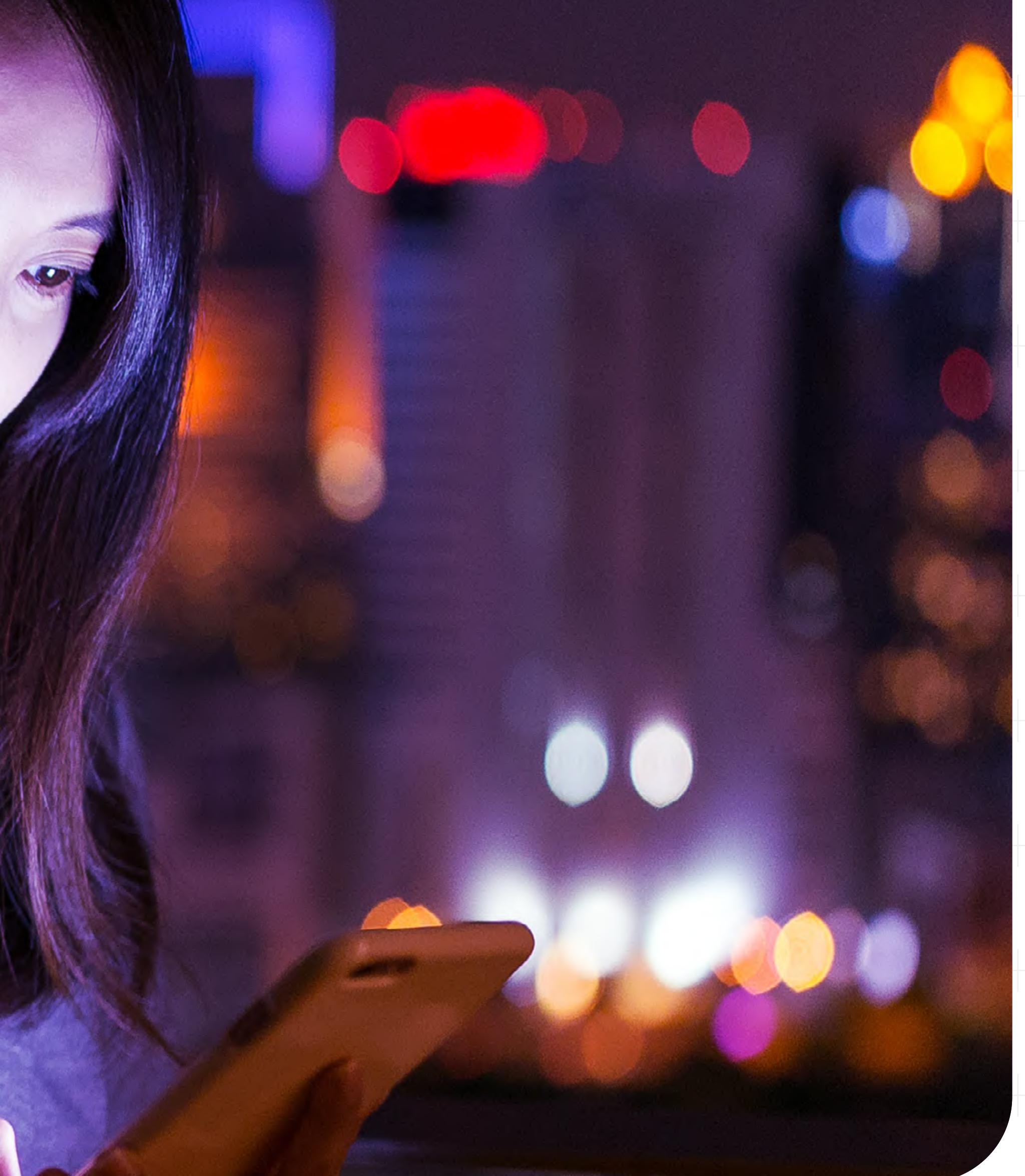
Bad experiences for companies

- ⊗ Ambivalence
- ⊗ Distrust
- ⊗ Low-adoption
- ⊗ Churn
- ⊗ Negative reviews
- ⊗ Frustration
- ⊗ Dissatisfaction
- ⊗ Brand damage
- ⊗ Erosion of brand loyalty

How to give customers the product experiences they expect

Different customers value different types of product experiences, but all increasingly want perfect integration of the digital and physical. Out-of-date firmware or buggy software can stain the experience, regardless of the individual user's unique expectations.

By taking an "experience-first" mindset, organizations can be guided by the understanding that the experiences their customers have when using their products will determine if those customers will embrace those products.

Ultimately, these experiences serve as the fuel for the new engine of economic value: data. Companies can harness this data for such things as further feature development, future product iterations, and experiences personalized for users, thereby triggering a virtuous cycle of customer delight.

Our interviews with senior product executives reveal that poor product experiences are ultimately artifacts of inadequate product operations. Therefore, companies must **reboot**, **rethink**, **refocus**, and **retool** their ways of working in order to achieve levels of product experience that match or even exceed what customers expect.

For example:

+ A theme park guest might take delight from a smart resort amulet that evokes magical, extraordinary, and memorable experiences.

+ A repair person using a connected drill might want a way to seamlessly configure the tool via a companion app.

+ A cyclist might want an experience where bicycle ownership is optional and smart bikes can be located and rented quickly.

In this report, we've identified four operational course corrections that product companies must make to become experience-led businesses.

In addition, we've discussed specific things that companies must immediately stop or start doing during the course correction.

1. Revise
your ways of working

2. Rethink
your old product
management doctrines

3. Refocus
on experiences rather
than core technology

4. Retool
to sustain and maintain
living products

Stop

- Adhering to a culture that inhibits the business pivot needed to foster a smart connected product portfolio

- Giving priority to time-to-market (TTM) instead of understanding customer needs

- Overemphasizing bill-of-materials (BOM) and narrowly focusing on physical product margins

- Overdeveloping proprietary technology

- Planning inadequately for ongoing operational processes to maintain and sustain smart connected products

Start

- Thinking big by articulating a bold company vision centered on product experience

- Cultivating a modern, agile, collaborative engineering culture to support that vision

- Building small with next-gen product hubs

- Increasing focus on stronger customer-centric value-proposition development

- Embracing digital economics and repeatable experience-driven service revenue

- Leveraging a "digital chassis" of common tech components in order to scale effectively, tap into broader ecosystems and promote sustainability

- Focusing R&D on experiences unique to your product

- Maintaining the product experience with continuous testing

- Using firmware updates to introduce new features and functionality

- Employing customer feedback analytics to gain product experience insights

- Sustaining the product at its end-of-life phase

1. Revise
your ways of working

In any era of rapid change, firms quickly realize that existing organizational cultures are no longer constructive. Product firms must instill vision-led modern engineering behaviors in their workforce and empower their people to leverage technologies to service and support experience-led business models.
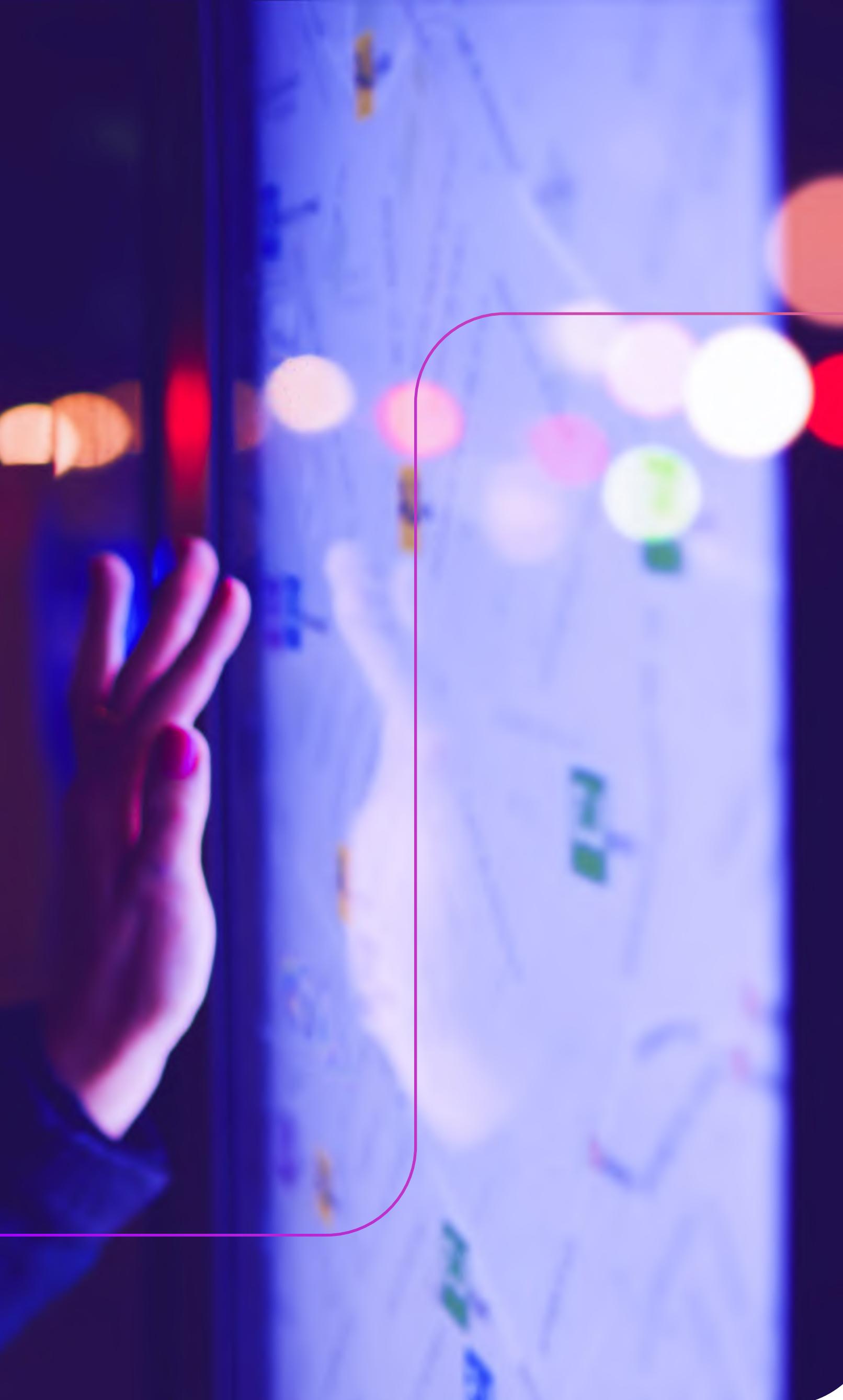
Don't let mindsets keep you from pursuing excellence

The challenge for product companies trying to succeed in experience is that they have to be excellent in everything. To create a delightful client experience, companies need to be excellent not just "inside the box" (i.e. the electrical and mechanical engineering, the housing, etc.) but also in the smarts, the ecosystem integration, the companion apps and so on. All these things taken together enable and create the user's product experience.

Many physical product companies are struggling with these new and numerous competencies. Basing the company vision on customer experience—and cultivating a culture to support that vision—is a key success factor.

"Companies need to master consistency around designing a beautiful physical product, combined with seamless digital interactions, and a high emotional-quotient on the support side when 'things go wrong'."

Dr. Mohamed Zaki
Institute for Manufacturing, University of Cambridge

User interface
Digital and physical interaction

Physical hardware
Mechanical parts, plastics, metal, glass, finishes

Smarts
Electronics, sensors, embedded software

Connectivity
Wi-Fi, Bluetooth, cellular, etc.

Analytics   Ecosystem   Applications   Cloud Services   Development
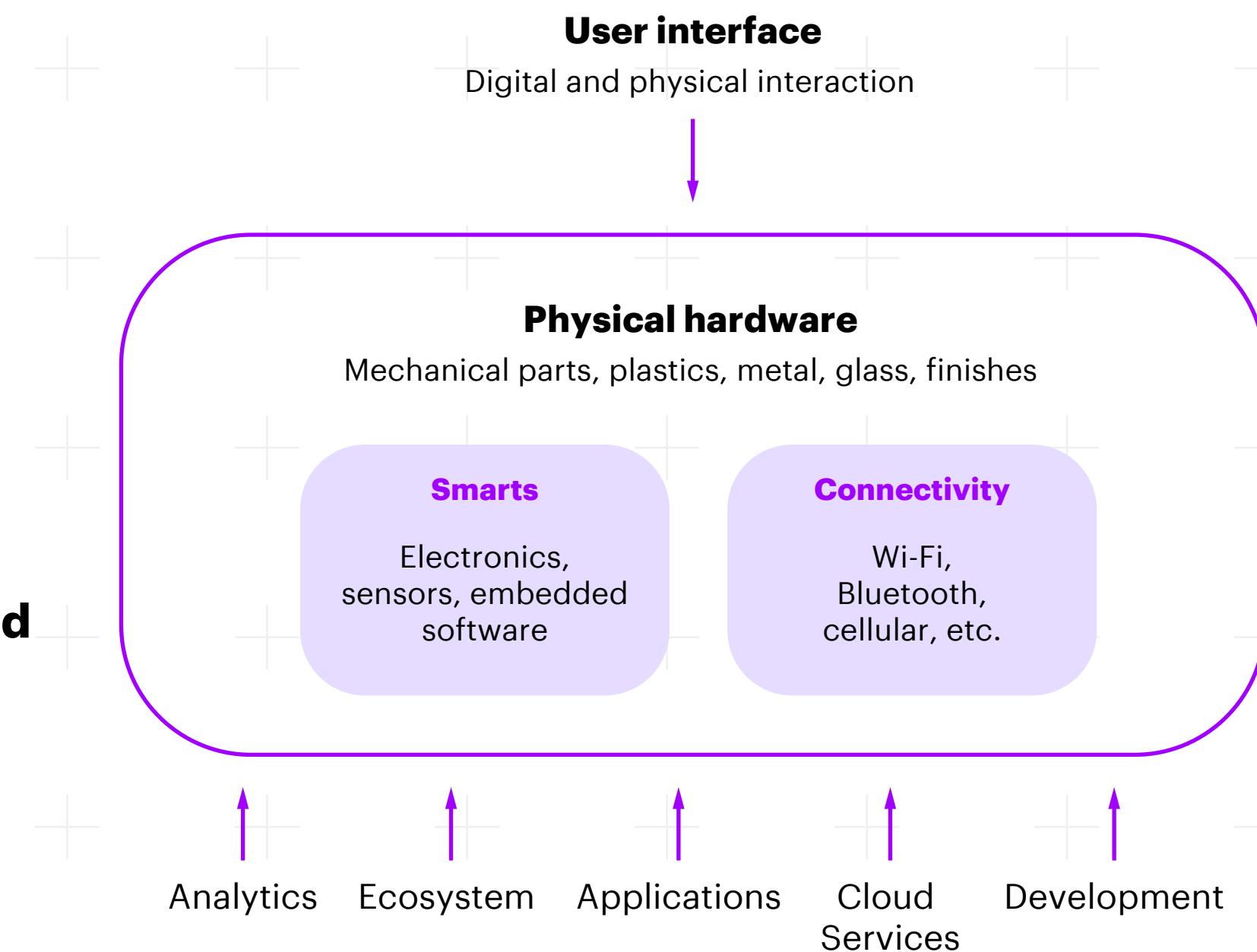
Think big. Start with a vision-led strategy

A common mistake of product companies is failing to transform their organizational culture as they transition to selling next-gen devices.

Culture transformation should be a function of a new vision statement that defines the company's ways of winning in the future. The most successful product companies are those that create vision-led products. They start with the customer experience attributes they want to achieve and then reverse-invent the product—a process we call "future-back" visioning.

Some of the companies that have been most successful (companies like Apple, Bose, and Peloton) start with a maniacal common purpose of building a product, or set of products, that customers literally love, that are delightful, that enrich and change their lives.

Many traditional product manufacturing companies lack such a boldness of vision, and so they become doomed to be stuck with their stale culture and uninspiring next-gen products.

The CEO, the product managers, the engineers, the interns—everybody in the organization—needs to rally around a maniacal goal of building a product that customers are going to love, with features and services that emote affection for the product.

With a vision-led approach, technology gets out of the way and the focus shifts to creating products that are life-changing for its users.
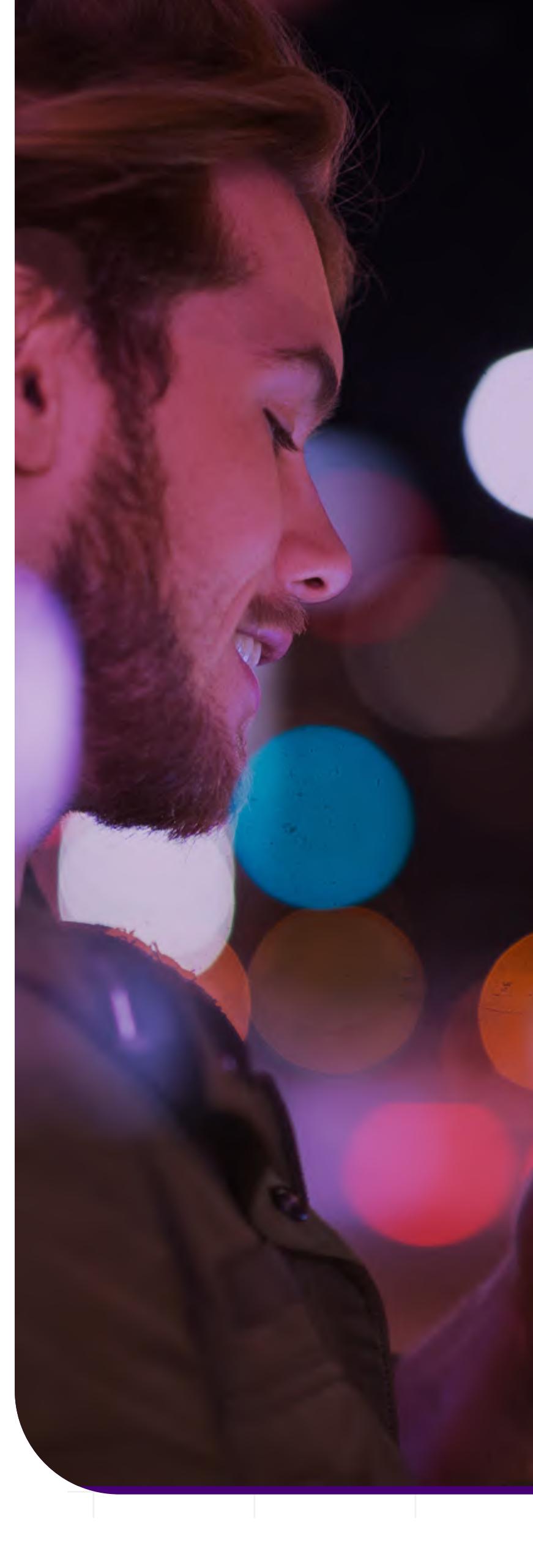
Follow through with a culture reboot...

"For these product firms, this is a moment that requires an unreasonable injection of momentum. They need to build a modern engineering culture and new ways of working to help them win in the market. It's not all about product, systems and process."

Joe Hildebrand
Principal Director
?WhatIf!, an Accenture innovation agency

Strategy → **Defining ways to win in the future**
e.g., an experience-driven product business eliciting envy among competitors

Culture → **Lining up ways of working to deliver ways to win**
e.g., embedding collaborative, modern engineering cultures

Workstreams → **Doing work that delivers results aligned with that vision**
e.g., convening experience "salons" and engines
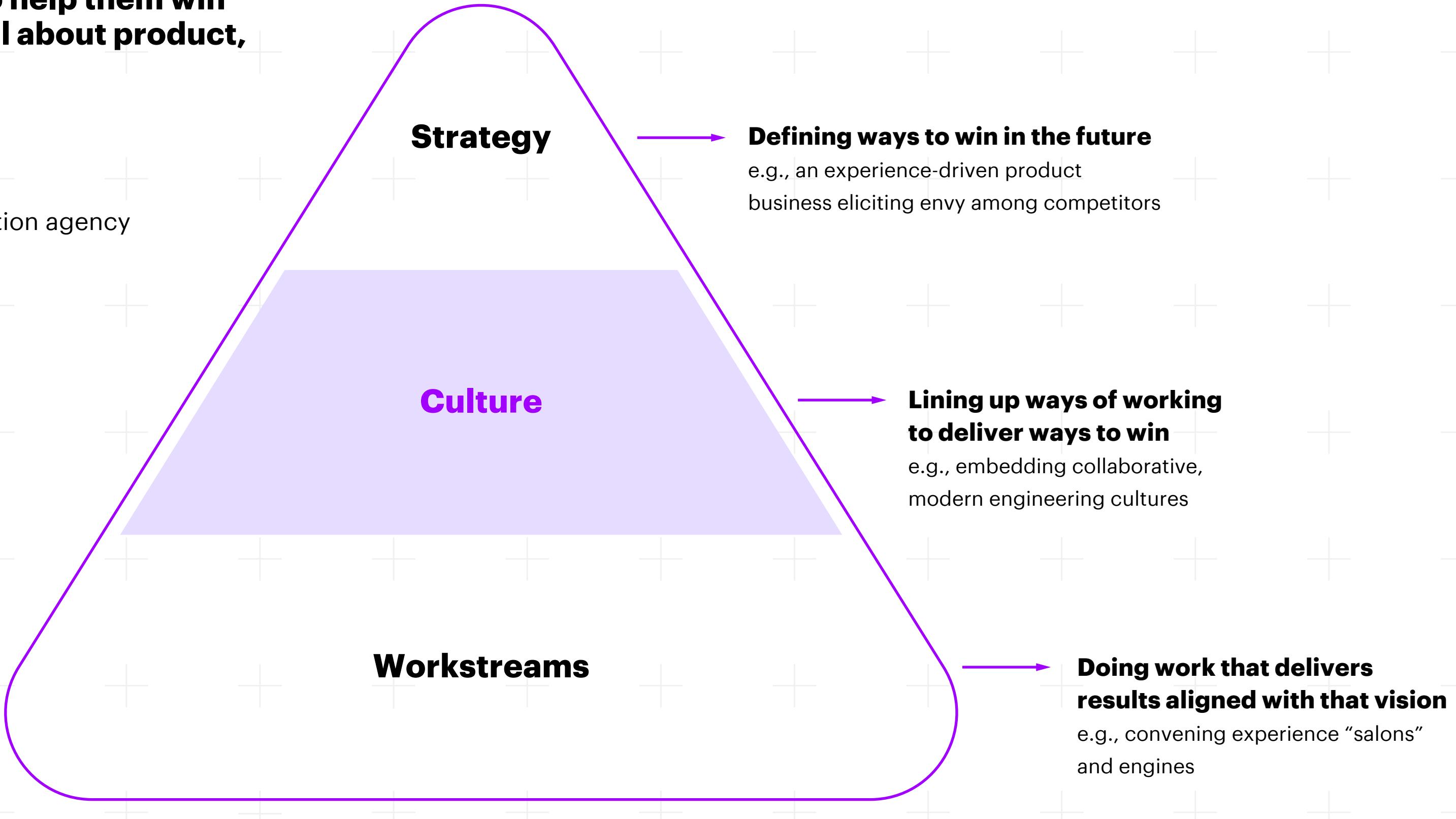
...by embedding a culture of engineering agility...

Of course, there is no one-size-fits-all approach to culture. Different organizations will find their particular best culture in different ways. And there are many things companies can do to fix a culture. However, we've noticed something: Many product companies pivoting to next-gen products aren't experimenting, lack the ability to do things differently and haven't given themselves permission to fail.

There is just not a lot of room in these organizations for trying things outside the rigid parameters of how things have been done before.

In fact, many of these organizations remain grounded in physical product engineering mindsets and practices. They tend to follow a waterfall model, consisting of a cascading sequence of processes and stages. When one phase is completed, the development moves to the next logical stage.

In contrast, modern software engineering has embraced an agile approach, where software is built iteratively from the start of the project. It would be inconceivable for a web-based company to reject agile concepts like continuous integration, modern engineering flow and so on. A challenge for product companies is often to adopt agile software practices in the first place and then subsequently integrate them with physical hardware development cycles and practices.

Furthermore, many product companies are further frustrated by the fact that they struggle to attract software talent because of their stale brand reputations. So, bringing DevOps, agile, scrum, cloud, and AI practices and ways-of-working into the hardware-based product world is essential to improving the outcome of product innovation functions.

An important step, when introducing a modern engineering culture, is to first benchmark the maturity and productivity of the current product innovation organization. This helps companies quantify their R&D effectiveness versus their peers'. They can later use this data to quantify the successes of their pivot towards a more modern engineering culture.

If a company is not changing its culture in tandem with the composition of its product portfolios, it will be in danger of simply scaling wasteful engineering practices.
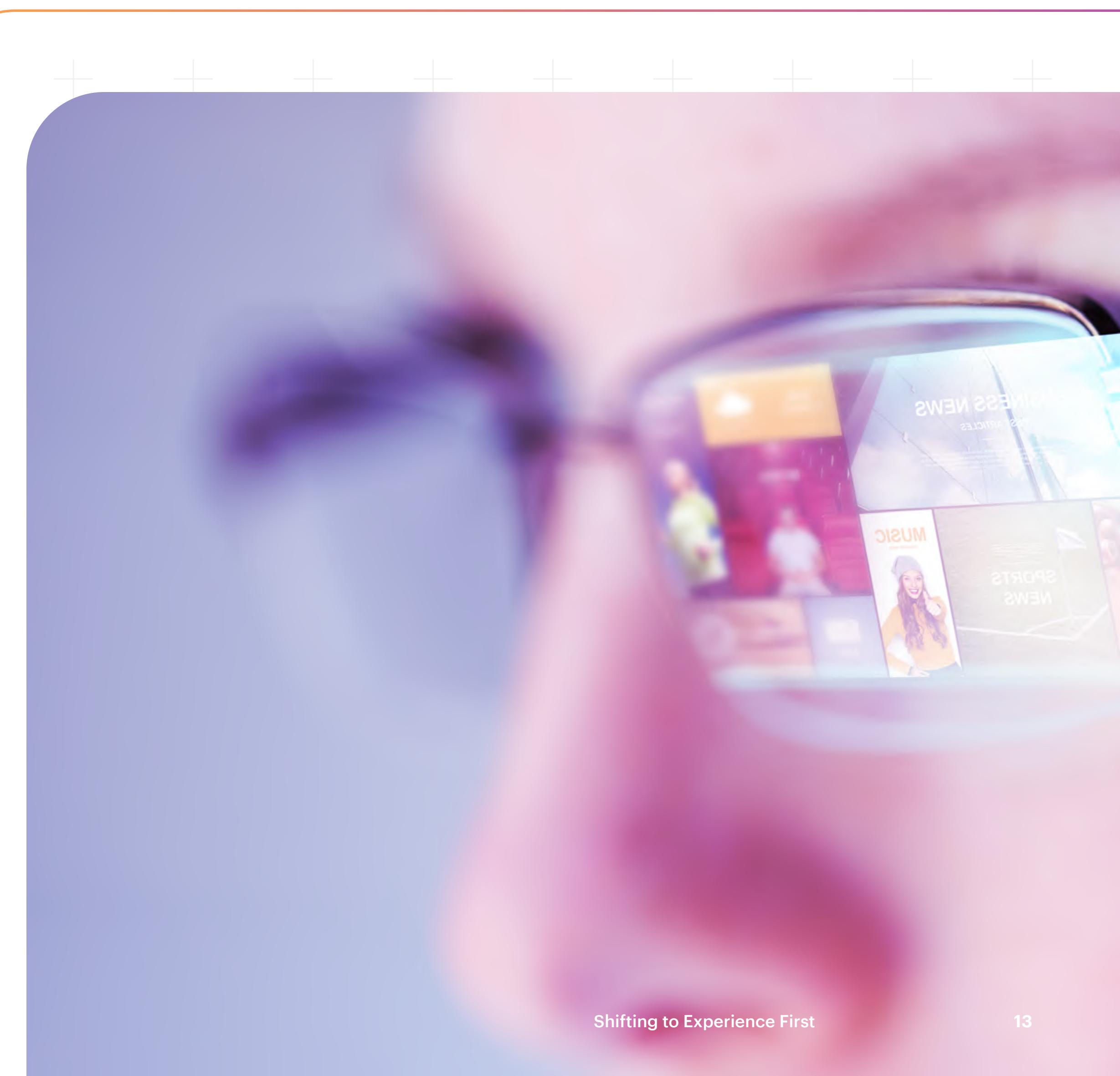
...and a culture of collaboration
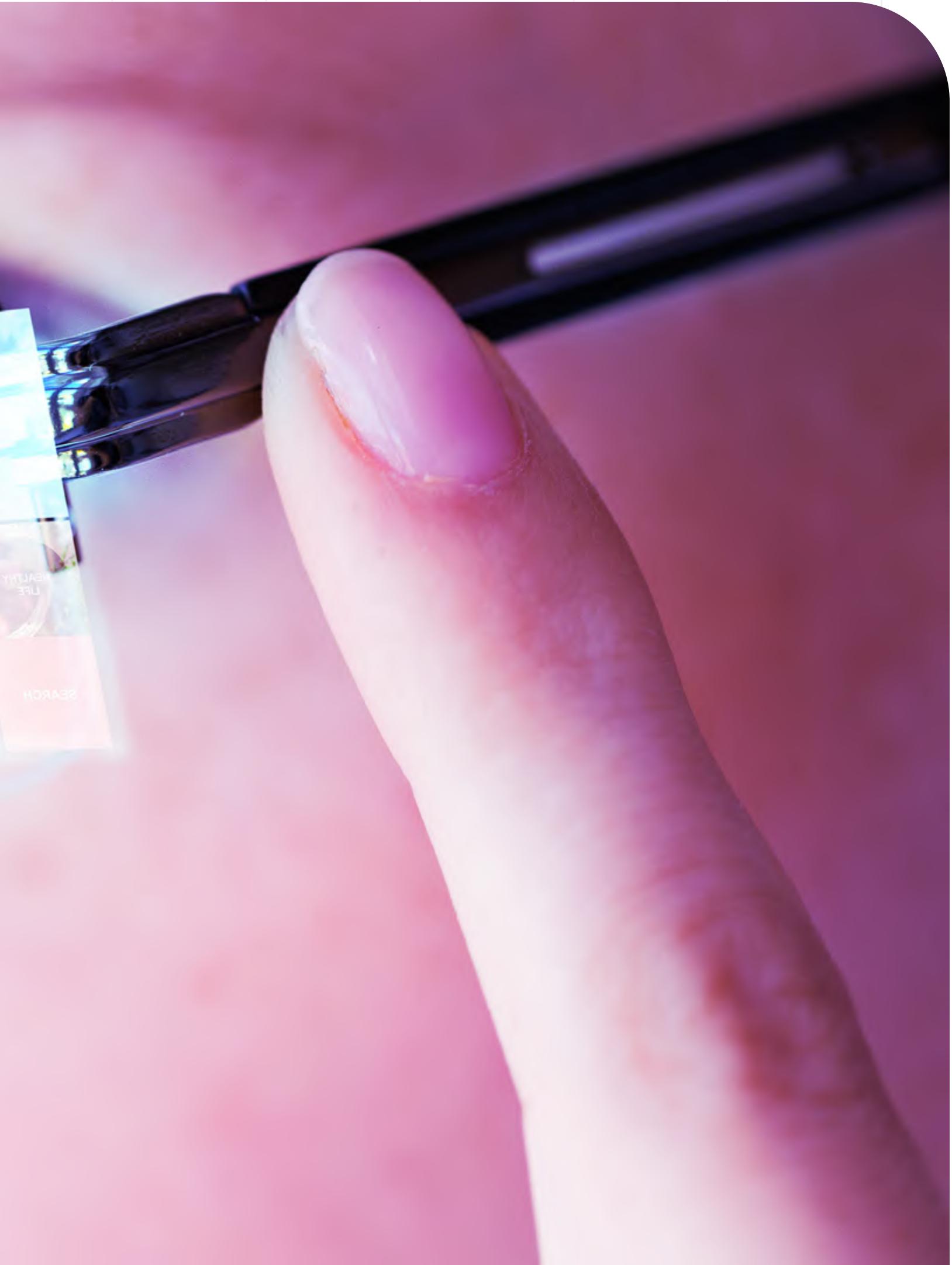
But it's not just about rebooting and retooling the engineering functions. Even the most creative and energetic product engineering function will struggle to thrive in the new, smart connected world if it is just focused on its own behaviors.

"For us, technology is really not the problem. We have a lot of experts in the market. We have a lot of software programmers, hardware optimizers and other very specialized teams, but they do not look to the next department and what they are doing. Instead we need cooperation all over the organization. But we have very limited people available with a holistic approach. So, what we are really seeing is the need for wider cultural change within the organization. We are structured in departments and distributed responsibilities, and it's always hard to change this culture."

Product Executive
Fortune 500 Industrial Equipment Firm

To support all the moving parts of the experiences that customers will value, multiple functions need to be engaged in constant contact and exchange of information and views.

Developing smart connected products is one time when you want more cooks in the kitchen and everybody's hand in the stew. The more parts of the organization you have involved, the more valuable the return becomes.

Start small by establishing next-gen product hubs

The ability to move fast and transform fast is the ethos of successful organizations. However, culture change can be slow and tedious, often taking more time than companies feel they have.

Various culture-diagnostic tools and behavioral-science approaches can act as accelerators, but organizations shouldn't expect to change a culture overnight. A proven way to achieve collaborative harmony across various disciplines is to first create small, cross-functional R&D units that can come together (physically or virtually) in a way that is led by the company's overarching strategy vision. In the product world, we refer to these congregations as next-gen product innovation hubs. The establishment of hubs is the first step to helping an organization effectively transform from an industrial-, engineering- or manufacturing-focused company to one that provides software- and services-led products.

For example, creating the microphones that will capture voice commands to be interpreted by AI requires that hardware and AI teams work closely together in the product's development to optimize the customer experience. At a hub, offshoots of these groups can closely collaborate and share achievements—something that would perhaps be impossible to do in the old organizational structure. This can be achieved with minimal productivity waste due to the fine-tuning of modern engineering approaches and effective insight-feedback mechanisms.

At this stage, the goal is not just to define and build the actual smart connected products and services. The primary desired outcome of the hub is to create a slice of the organization with the right operating model and mindset for designing, deploying, and sustaining smart connected products and continuous innovation with lower risk and cost, and higher value.

We have seen that early successes with these focused hubs engender "speed to confidence"—confidence that the new approach works and can be scaled across the organization. These successes can then, over a period of time, ramp up into a fully-fledged roadmap and embed the new approach across the organization.

2. Rethink

your old product management doctrines

The product management models that worked in an unconnected world no longer apply. Greater attention has to be paid to holistic product development principles that focus on who the product is for and the experiences that it can generate for its users over the course of its lifetime.

Rethink physical product management

Despite merging the physical and digital elements of their products, companies remain too beholden to physical product-centric doctrines like time-to-market and bill-of-materials.

These entrenched product management orthodoxies, coupled with operational inertia, put a disproportionate focus on pushing the product out on time, causing companies to lose sight of the experiences they must build off that product. Such a planning approach creates upfront pressure on the product to generate revenues, thereby setting it up for potential failure.

Rethink physical product management doctrines

Organizations must realize that when they launch a next-gen product into the market these days, they are actually only half way there. The balance of focus and activity will need to shift to post-launch operations. They must then reconcile this with the entrenched and inadequate processes around managing the product-development phase. They must:

Balance the trade-off between time-to-market for a more concrete understanding of human needs

Developing a value proposition that puts the user first is more important than getting to market first.

Aim to augment one-off hardware margins with repeatable experience-driven service revenue

A winning experience-led proposition flips product economics from one-off revenue to recurring revenue.

Balance of product operations activities

Pre-launch
• Concept development
• Product development
• Market entry

Post-launch
• After-sales service
• Warranty

Traditional product

Pre-launch
• Concept development
• Product development
• Market entry

Post-launch
Service and maintenance
• OTA firmware updates
• In-market security testing
• UX testing
• Product usage analytics
• Warranty analytics
• Content curation

Next-gen product

Don't rush to fail

Often, accelerating time-to-market is simply rushing to fail. The focus needs to shift from time-to-market to time-to-value.

Product managers are under pressure to get connected products into the market as fast as possible.

But customer adoption of those accelerated product launches often disappoints. The connectivity and intelligence built into the product fail to attract customers.

The most likely cause is that an overemphasis on speed-to-market has trumped the need to understand what consumers want and how these new smart connected products can enable services and experiences that will continue to delight those individuals.

In other words, many product managers find themselves rushing to reach a milestone that ironically is just the start of the customer journey.

"The first part—the planning, the use cases, the wire-framing, the mock-ups, and the testing with target groups—is very, very important. But, honestly, in most cases, we are simply in a hurry."

Product Executive
Fortune 500 White-Goods Firm

"We now know what doesn't work, but we still don't really know what does work— meaning, what are the value-adds that will resonate with our customers?"

Product Executive
European Comms & Media Firm

Put the human at the center...

Technology advancements coupled with the competitive pressures of speed-to-market and rigid product development calendars ("We need to launch before Christmas!") often mean that human-centric design principles are omitted from the organizations' next-gen product development processes. Consequently, these new products fail to deliver what users want.

For both B2B and B2C companies, it is imperative to focus strongly on human usage patterns, motives, hurdles, desires, and other priorities in the early product design and development stages.

One person we interviewed, Dr. Mohamed Zaki, of the Institute for Manufacturing at the University of Cambridge, said, "if your standard product experience is not extraordinary, it will not just be met with passivity, it will actually trigger negative emotional situations ranging from disappointment through to frustration and rage. And these human emotions trigger churn because brand loyalty is no longer a reliable concept."

...by syncing the tech, data and human agenda

Human-oriented design principles will help product companies persuade customers to go on a journey with smart connected products, instead of just expecting customers to adopt the next-gen products without any reservations.

Spending additional time consulting with users during the next-gen product design phase will help product companies mitigate and manage their concerns and assure them of win-win experiences and outcomes. Gone are the days when customers happily shared their data with companies without a clear reason or payback. Now, they want a fair value exchange.

58%
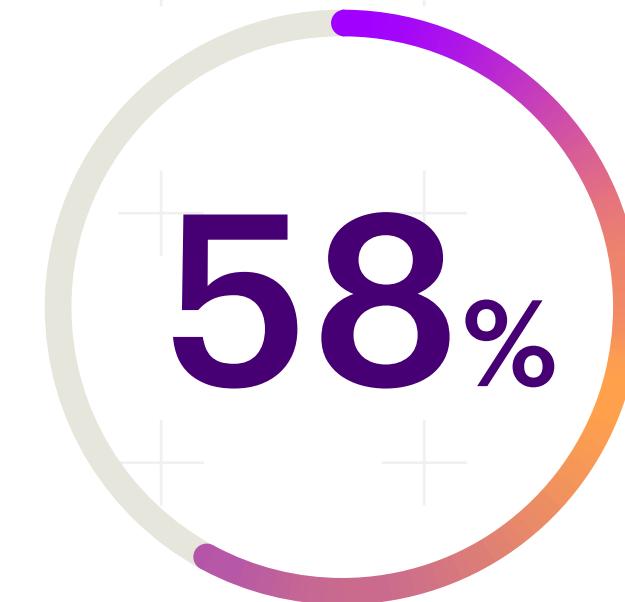
58 percent of leading products companies strongly agree that their company is successfully syncing the tech, data and human agenda compared to just 25 percent of non-leading products companies.[1]

66%
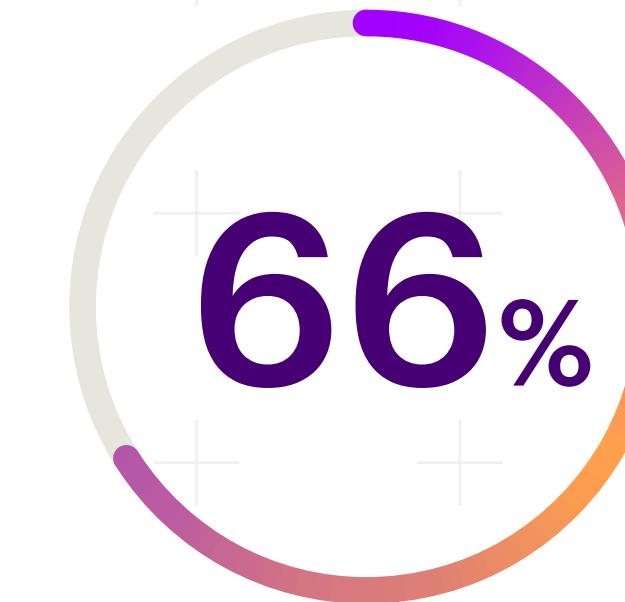
66 percent of us won't do business with brands we don't trust, no matter how good their product is.[2]

> **"Understanding the users' concerns is essential because techno-led products will increasingly be perceived as dangerous in the eyes of the customer. Citizens refusing property access for smart meter installations is a clear example of this. I expect to see many of these smart product companies being put in the spotlight for data usage and invading privacy. It's a tricky path, but appreciating human values will be key."**

Prof. Thierry Rayna
Institut Polytechnique de Paris

Deprioritize BOM and be willing to give up hardware margins...

Another finding of our senior product executive interviews was hyper-concern with managing the bill-of-materials (BOM) and margin protection regarding smart connected devices.

The prices for smart connected product components such as wireless modules, digital displays, and systems-on-a-chip have plummeted in recent years. However, product executives remain concerned about how BOM increases impact next-gen product margins.

One home appliance executive found out that parts of his organization had been resisting adding sufficient connectivity and intelligence to their new products. Because his organization operates in a low-margin sector, the bill-of-materials is a significant metric on which product managers are incentivized and rewarded.

As a result, these managers were reluctant to build in adequate LED screens, GPUs, CPUs, RF (Radio Frequency) and other modules to enable an exceptional product experience. The corporate organization ultimately had to introduce an internal BOM subsidy scheme to incentivize product managers to add these new components.

"We see BOM as the number one pain point in our industry; it's an extremely price-sensitive market."

—

Product Executive
Fortune 500 Consumer Electronics Firm

"Our firm has a high margin structure, so naturally we are obsessed with the product BOM."

—

Product Executive
Private Consumer Electronics Firm

...by harnessing experience-led recurring revenue

Product companies need to make BOM calculations deferential to the economics of new service-, platform- and ecosystem-based business models.

The problem is that many companies don't start with the question "Why do we even need a connected device?". What companies really seek when getting involved in next-gen products are new revenue streams.

The decades-old approach of generating revenue from a customer base—by selling a physical product at a comfortable margin—is not going to work for these companies when they move from static hardware to smart connected products. Instead, they need to think about the new economic equations of these devices. For example, confidence in perpetual service revenue, driven by engaging experiences and business outcomes, should alleviate concerns about lower margins from physical hardware.

Peloton sells connected exercise equipment. Its main product is an exercise bicycle that allows subscribers to remotely join streamed fitness classes. In 2018, its hardware margin was 43.6 percent. In contrast, Peloton's service margin stood at 43.3 percent in 2018 and soared to 57.2 percent by 2020. Indeed, for every $1,000 spent by customers in 2018, Peloton would have generated not only $436 in hardware margin, but another $278 in service margin over the next three years.

In the Q4 2020 earnings call, a Peloton executive said, "We're very excited to lower the price of the bike to make our products more accessible," suggesting a willingness to sacrifice hardware margin in order to acquire additional sticky, high-margin service subscribers.

3. Refocus

on experiences rather than core technology

Smart connected products develop over time. The first iteration of a product, whether a mobile device or an electric vehicle, will be distinct from its third or fourth. The difference is software and the new experiences it can dynamically deliver over the long run to customers.

Operations that are built around optimizing proprietary components can't succeed in this dynamic environment.

Don't focus investment on technical differentiation

Physical product companies naturally see their role as builders of things, but they don't need to engineer everything, especially if the under-the-hood technology is not a core differentiator.

Nico Michler, CEO of designaffairs, an Accenture product innovation agency, has seen companies fall into this trap before. "Companies thinking that they are going to turn from a hardware company into a software company are making a big mistake," he warns, "but they might be able to transform into an experience company."

"Minimizing the size of our technical development team by embracing best practices and allowing them to focus only on product differentiation and product experience would be a breakthrough."

Product Executive
Fortune 500 Industrial Equipment Firm

The implication is that product companies should leverage their existing ecosystem technology solutions (such as proven approaches and components), thereby enabling them to concentrate on experience differentiation instead of technology differentiation. Many physical-product companies are struggling with these new and numerous competencies. Basing the company vision on customer experience—and cultivating a culture to support that vision—is a key success factor.

"Proven reference designs would be very useful accelerators, but right now our technical architecture seems to have been thought up, and live in, our own engineers' heads."

Product Executive
Fortune 500 Industrial Equipment Firm

Focus on experience differentiation, by building on a digital chassis

Don't waste precious engineering time on components that are common. With a product, it is important to identify the things that will make it absolutely unique and invest in the development of those parts. Building on top of a "digital chassis" frees-up organizations to differentiate on the experience rather than the technology.

Product companies shouldn't be trying to differentiate on technology like the embedded systems architecture, when they could be leveraging **digital chassis**: libraries and reference architectures that are already precooked, ready to plug in, and offer an easy path to scale and security.

Engineering departments are thereby able to avoid wasteful expenditures trying to develop technology that has already been successfully proven or disproven.

This approach can enable organizations to avoid the trap of wasteful reinvention, and therefore more rapidly achieve scaled smart connected product engineering, resulting in improved productivity, reduced total lifetime cost and reduced time to launch. Further, they are freed to focus only on differentiation of the core product attributes.

Indeed, in traditional electro-mechanical product engineering, instead of fabricating each part, OEMs typically make use of ready-assembled third-party components and sub-assemblies.

For example, in the automotive industry, a motor vehicle chassis sub-assembly can include a frame, a suspension system, a steering linkage, and other components integrated into a single unit. This chassis can be used by various OEMs or sub-brands. For example, Toyotas and Lexus are built on common chassis, or "platforms." Yet the drivers' and passengers' experience of Toyota and Lexus are still completely different and unique.

Connected-device ecosystems have already formed around commonly used software standards, designs and platforms, thereby enabling communities of interoperable devices to flourish. Even for companies dipping their toes into smart connected products for the first time, the success of their next-gen products can often be affected by the users' ability to tap into and leverage pre-existing ecosystems. Building on a best-in-class digital chassis will enable companies to easily leverage these ecosystems and partnerships to delight their customers.
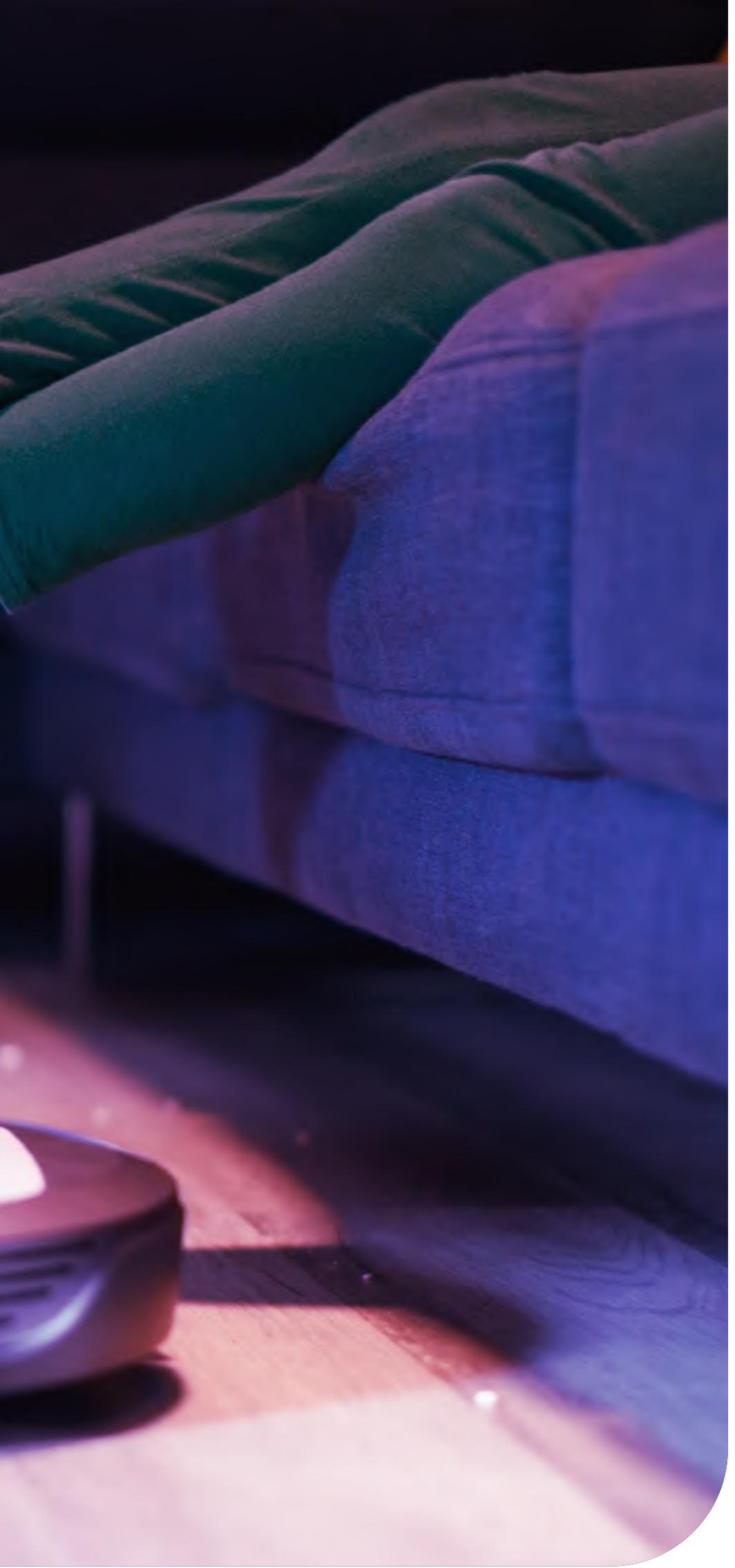
Avoiding wasteful reinvention helps achieve another emerging engineering design goal: embedded sustainability

Environmental sustainability is the next wave of transformation for product organizations. This phenomenon coincides with product companies' pivot to smart connected devices. Stakeholders will put increased scrutiny on product design methods that can help achieve sustainability.

It is imperative that companies take end-to-end action to embed sustainability across their evolving product portfolios. This requires a new lens of attention be placed at the design phase.

Optimal design choices will allow products to consume fewer resources during their lifetime (e.g. minimizing energy usage, ensuring a high degree of repairability, and shifting from a cost-driven BOM to a sustainability-driven BOM).

This is where the digital chassis plays an extended role. Leveraging software engineering practices that foster the use of standard code and reference designs—rather than engaging in wasteful reinvention—is a way for companies to weave the sustainability imperative with their smart connected product agenda.

4. Retool

to sustain and maintain living products

Maintaining and enhancing the product experience needs to be an upfront consideration for all smart connected product development.
That means proper budgeting, planning, and investing in the development of powerful experience engines.

Don't ensure early obsolescence; create living products

Ultimately, complete and meaningful product experiences are the result of the retooled product operations processes that companies must establish.

Value realization doesn't just materialize based on well-defined, user-centric use cases and once-off well-engineered products. Companies should evaluate how their engineering departments are set up financially and operationally to deliver product and service improvements.

Many companies dipping their toes into the world of smart connected products for the first time, do so from a predetermined innovation or R&D budget. When the product gets launched, they realize the various new operations they need to have in place, but the budget they relied on for product development is exhausted.

Rigorous and pragmatic planning for a myriad of post-launch processes and run costs is required to prevent a smart connected device portfolio from becoming a portfolio of zombie products.

Most companies, when they are building the product, don't think about what they need to sustain the product from the perspective of data, analytics and continued customer success—they forget about that part of it because they are too busy building the product.

"Understanding cash flows over the lifetime of a connected product is something that is difficult to communicate and understand... in relation to technological requirements to support it, such as firmware updates."

Product Executive
Fortune 500 Industrial Equipment Firm

Proactively service the experience

Post-launch, companies have traditionally been very reactive regarding products. If a customer complains about a problem or bug, then of course they would endeavor to fix it. Often, they would study online reviews and support tickets to identify and reduce specific problems.

However, the idea of being obsessively proactive once a product is launched is a still a new concept in many engineering departments. Companies need to be proactive in at least four domains:

Maintain
with testing

Ascertain
with analytics

Gain
with updates

Sustain
with product retirement processes
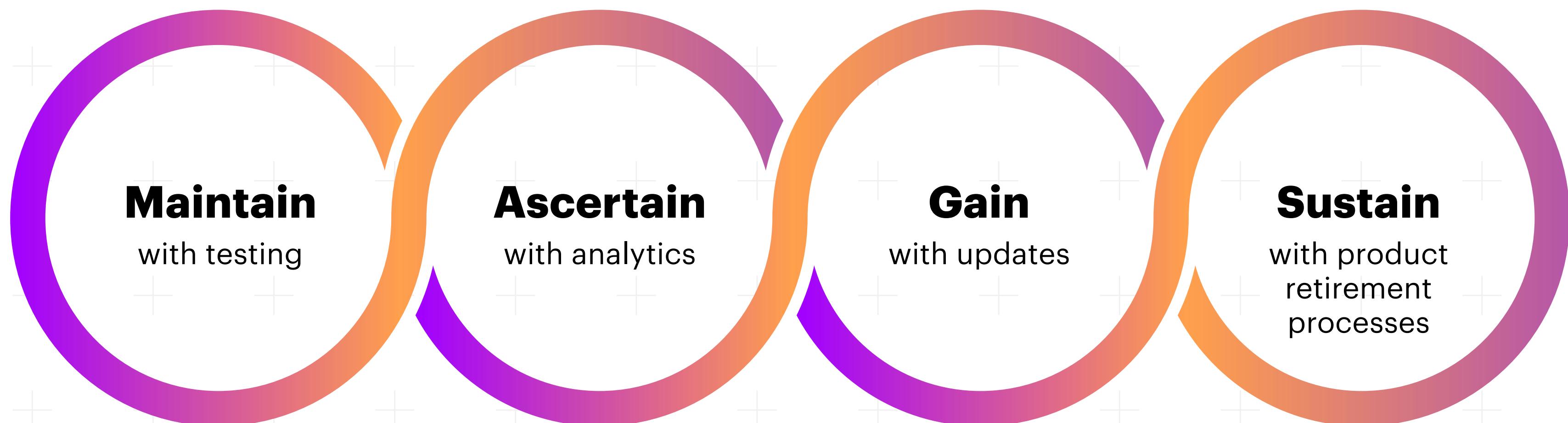
Maintain your product experience with post-release product testing

Understand CX and product performance with analytics

Increase users affection for your product with over-the-air firmware updates to add functionality and features

Introduce product retirement processes to enable circularity so you can meet sustainability expectations

Find out what needs improvement from customer and performance analytics

Many companies still take a digitally "primitive" approach to product usage feedback. Their feedback loops to R&D and engineering departments generally involve the slow analysis of qualitative feedback. Product executives we interviewed said that often this involves tedious manual reading of customer care tickets or online reviews.

Smart connected devices offer organizations the opportunity to proactively monitor product usage and performance and act on the feedback in future product iterations. These considerations need to be taken into account by engineering teams in the R&D phase.

For example, implementing product performance analytics may require that the correct sensors for measuring vibration, temperature, and noise be designed in from the start.

However, we have gathered little evidence that this is a commonplace process (see indicative quotes). Organizations that are collecting product usage data seem unable to provide the necessary analytics and feedback to product designers and developers. It's a common shortcoming for all types of enterprises. Forrester found in 2018 that, on average, 63 percent to 75 percent of enterprise data goes unused for analytics.

"Direct product usage feedback between our device and development teams does not exist widely yet; it's not part of the product development culture yet, unfortunately."

Product Executive
Fortune 500 FMCG Firm

"We still don't have the capability to put the data we collect off the device to good use and make fundamental changes in our business."

Product Executive
Fortune 500 FMCG Firm

Let users benefit from over-the-air firmware updates

People are used to getting firmware updates on their mobile phones. Companies like Apple provide firmware updates for their models. For example, iOS 14, which Apple released in September 2020, is compatible with the iPhone 6S, which first launched five years before—delighting existing customers and thwarting churn away from the Apple services ecosystem.

However, for many other categories of smart connected products, firmware updates are not yet common, even though they can help alleviate product companies' biggest perceived pain point—time-to-market—by enabling feature and function releases post-launch. Many of the product executives we spoke to expressed a lack of confidence in their organizations' ability to successfully execute over-the-air firmware updates.

In our experience, from an operational perspective, rebooting the R&D function by adopting a modern engineering culture with agility and supercharged sprint velocity will ensure that timely new firmware release cycles can be achieved.

"It's crazy for us to have to go around to all our client sites to configure and update devices. It takes us a year, if not more, to update software when we have to."

——

Product Executive
Fortune 500 FMCG Firm

"Actually, every time we try to do some big change over the air, we fail, and we have to send a bunch of technicians out to client sites."

——

Product Executive
Fortune 500 Medical Equipment Firm

To meet customers' sustainability expectations, adopt product-retirement systems, processes

We noted earlier in this report that it is imperative that companies take end-to-end action to embed sustainability across the product portfolio. We discussed how appropriate choices at the design and engineering phase can lead to responsible next-gen devices. Indeed, product design is a major determinant of a product's sustainability and potential for circularity (the principle of designing out waste and pollution, and keeping products and materials in use). However, the degree to which this potential is utilized is determined by activities taking place throughout the complete lifecycle.

Consequently, it important to put in place the systems and processes that ensure adherence to the sustainability agenda far beyond the product design stage. Firmware upgrades will certainly extend product lives, which is commendable. But systems and processes must also be established to enable circularity and confront the growing issue of electronic waste (see figure).

Recycling activities have not kept pace with the global growth of e-waste

Million Tonnes
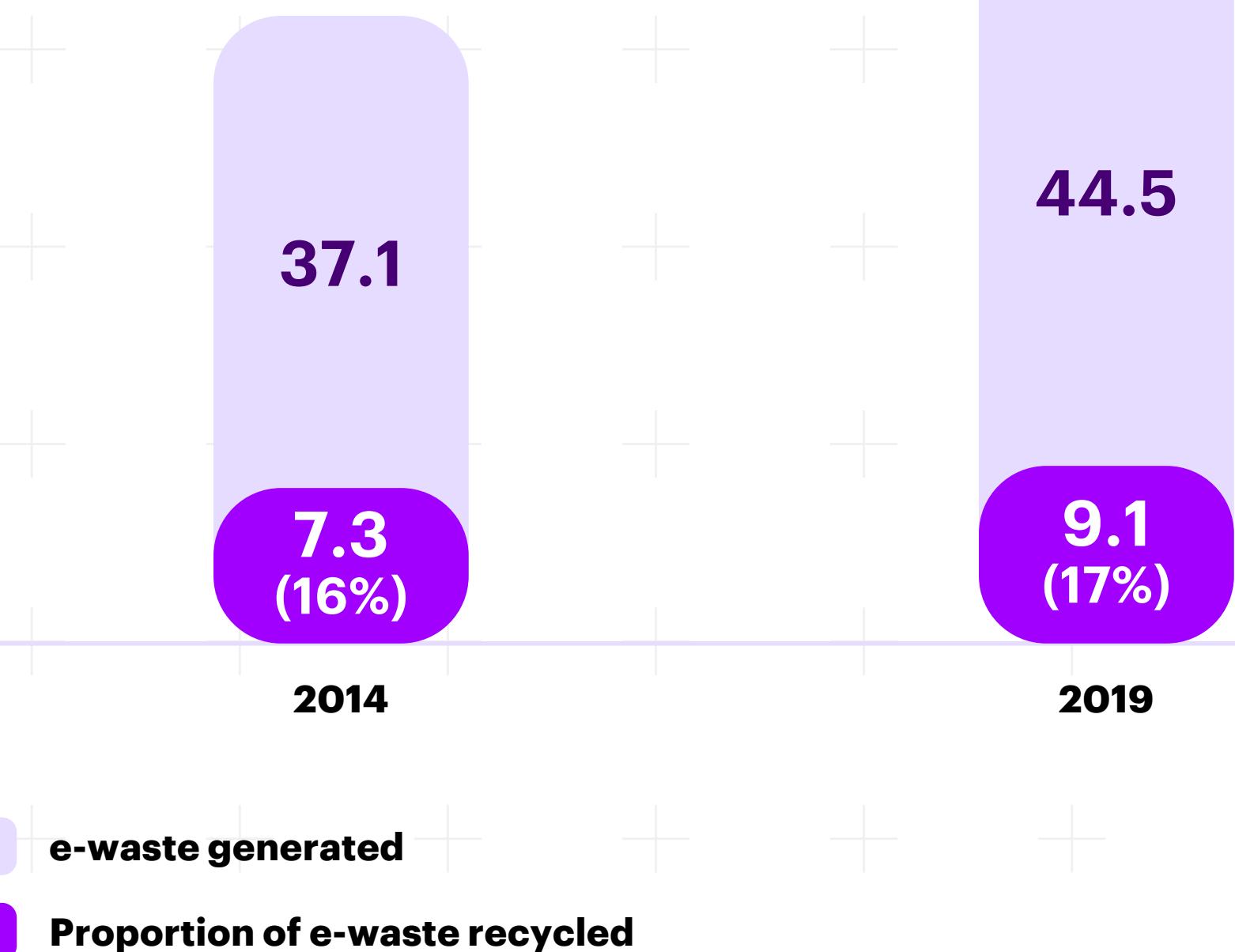
	2014	2019
e-waste generated	37.1	44.5
Proportion of e-waste recycled	7.3 (16%)	9.1 (17%)

■ e-waste generated

■ Proportion of e-waste recycled

Product retirements involve establishing systems to enable product retrieval, return, inspection, and sorting for disposal, recycling, repair, or re-manufacture. Users already have very high expectations concerning the experience they expect when engaging in reverse supply chain processes. For example, reverse-logistics company Optoro has found that 89 percent of customers who have a bad online return experience say they won't buy again from that retailer online. However, recent Accenture research showed that just 10 percent of companies were on the right path to building customer-centric supply chains prior to the COVID-19 pandemic.

In summary

⊕ **Many companies are finding that having a connected or even a smart product is no longer a competitive advantage. Being connected or smart, alone, doesn't excite anyone in the market anymore.**

⊕ **Rather, companies need to understand the kinds of experiences they should create to excite their target customers and modernize their engineering and product operations to meet those expectations.**

⊕ **There is already evidence that some product companies have identified becoming experience-led as a winning strategy.**

⊕ **Product companies need to adapt their product operations to reflect an experience-first approach now, or they risk getting left behind by competitors.**

Methodology

⊕ Our purpose in this report is to explore the success factors for product companies as they make the pivot to smart connected device portfolios.

⊕ When we set out to do this research, we were aware that there are already many quantitative studies that touch on the challenges of making business transitions in the digital age.

⊕ However, we wanted to go beyond to uncover authentic stories of product companies undertaking this particular journey to a digital product portfolio.

⊕ Consequently, we sought to get beyond data-points and numbers to understand the real-world stories of these organizations and make their journeys come to life.

⊕ The basis of this analysis came from candid interviews we conducted with 15 senior product executives from a diverse set of industries and geographies.

⊕ Their stories brought a richness of reflections that would be impossible to achieve from data points.

⊕ We complemented this approach by sitting down with leading academics working in next-gen product introduction and with internal experts at Accenture that live-and-breathe smart connected product innovation.

⊕ Altogether, this project generated approximately 300,000 words in interview transcripts.

⊕ We are proud to bring out all the richness and diversity of those discussions in this report.

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