2018 **Fjord** Trends

FJORD Design and Innovation from Accenture Interactive

Accenture Interactive

2018 Fjord Trends

Introduction

Our annual Trends report is always a team effort, and this year's team was bigger and more diverse than ever. More than 1,000 Fjordians, plus (for the first time) 85 clients from five continents, inspired our report, each bringing their own individual perspectives and experiences to the table.

We first gathered insights in all forms—a mix of hastily-drawn thoughts on Post-it Notes, elegant (and not-so-elegant) illustrations, simple scribbles and long-form copy, and even some musings over a cup of coffee. We then took those insights into workshops designed to hone the thinking and spot patterns—and tapped into some digital tools to help us gather evidence for our best ideas (because we're all about blending the physical with the digital). The result? Seven Trends affecting business, technology and design in 2018.

Today, we see deep divisions across global populations on a broad range of issues, which is creating social and political anxiety. We're also experiencing tension as a result of deep technological change that is altering the world we live in. There is no running from these forces. For the first time, we feel that there is just one meta theme for Trends in 2018: Tension.

Tension

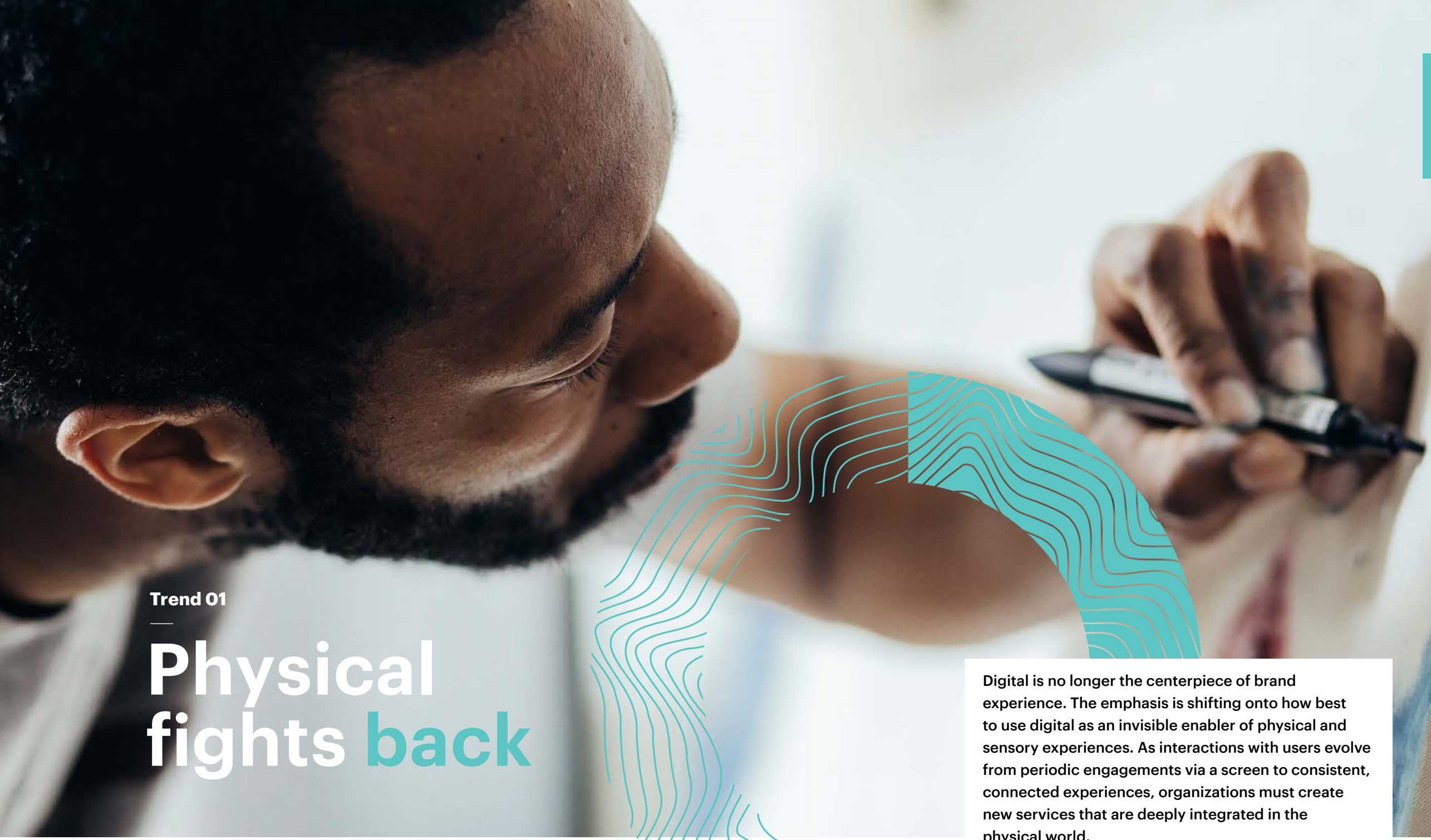
Over the past year, we've watched a polarization effect weave its way through many areas of our lives. Disagreement is no new phenomenon, nor are the paradigm shifts we experience across society. The current gulf between opposing opinions is remarkable and sometimes overwhelming, but also presents a moment of great opportunity.

Each of our Trends is born out of a fundamental tension, whether it's a shift, a disagreement, a collision or a definitive rift in ideas. Digital versus physical, human versus machine, centralized versus decentralized, speed versus craft, automation versus control, traceability versus anonymity … it's all in this year's report.

How we navigate these tensions and design for positive, long-lasting change will be more critical today than ever before. In 2018, it won't be enough to be a bystander. We collectively have the opportunity to design the world we'll be living in for decades to come.

Read on to explore Fjord Trends 2018. We hope there will be plenty in these pages to provoke conversations about what's lurking around the corner for you—as an individual, an employee, an organization or a consumer.

Happy reading!



Trend 01

Physical fights back

Digital is no longer the centerpiece of brand experience. The emphasis is shifting onto how best to use digital as an invisible enabler of physical and sensory experiences. As interactions with users evolve from periodic engagements via a screen to consistent, connected experiences, organizations must create new services that are deeply integrated in the physical world.

What's going on?

For the past five years, how we have designed services has been dictated and limited by the touchpoints that were available to us—the PC, mobile devices and analog touchpoints. Much emphasis was placed on creating experiences delivered through digital screens and as a result, people spent more time interacting via device than in person.

This is about to change.

A major shift is underway in technology, fuelled by lower costs, the disaggregation of core technology components, and users' growing angst about their own "screen addiction."

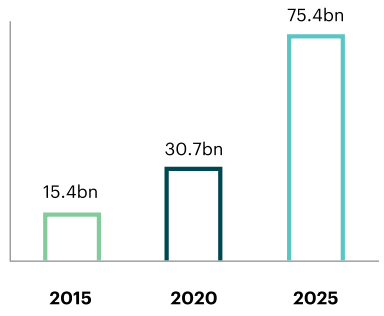
Until recently, speaker/microphone, camera, screen and sensors were found together in PCs and mobile phones. Now, they are being pulled apart—the equivalent of dismantling a Swiss Army knife, separating its various tools and embedding each into a diverse array of other places.

As the disaggregation of core technology accelerates, each individual component is blurring into the background. This is freeing organizations to move away from interactions via digital screens and refocus on human experiences—this shift will have a huge impact on how those experiences are designed.

Service design, which is all about exploring every touchpoint and channel to design an experience, has a central role to play. The disaggregation of technology components gives service designers many new avenues to explore as they create the next generation of digitally enabled services. No longer restricted by rigid touchpoints, sensory and human experiences are front and center with digital playing a powerful behind-the-scenes role.

We are now living in a world where technology is everywhere, supported by the Cloud. We exist in a fog that makes the digital invisible, and that blurs the boundaries between digital and physical. From an installed base of 15.4bn connected devices in 2015, the Internet of Things market is expected to grow to 30.7bn in 2020, and rising to 75.4bn by 2025.

Global IOT Devices



Data source: IHS

Tao Café from Alibaba

People are already starting to move away from intrusive digital technologies and kick against digital saturation. As a result, they are receptive to a more personal approach to services and products, and as technology becomes more ambient, they are migrating to services like Airbnb that offer physical, human and sensory experiences that create lasting memories.

"People are already starting to reject intrusive digital technologies and kick against digital saturation."

Technologies, mobile payments and the hunt for convenience have positioned China as the leader in what has been described by some as the online-to-offline (o2o) revolution. o2o is where customers are identified in the online space then enticed via various tools—click and collect, for example—to transact in an offline environment.

In the Asia-Pacific region, 88% of retailers plan to implement click and collect systems, according to one recent study. Alibaba, for example, recently invested US$1.25bn in Shanghai-based Chinese online food delivery service Ele.Me—a strategic move to strengthen its position in the o2o marketplace.

In a separate move, Alibaba recently unveiled its Tao Café and smart speaker—called Tmall Genie—to revolutionize offline retail. By scanning a QR code on the Taobao app at the entrance of the store, customers are tracked by cameras with facial recognition. After going through the checkout doors, they automatically make a purchase through their smartphones without needing to scan everything through a register, and can simply leave the store with their items in hand.

Amazon Go prototype grocery store in Seattle.

Elsewhere, a growing number of primarily digital brands are now placing greater emphasis on the physical while making the most of their digital expertise and data to improve user satisfaction.

Amazon, for example, has shifted its focus in recent years onto the experiential element of shopping with Amazon Go, its purchase of grocery chain Whole Foods and its partnership with Kohl's—further evidence of the company's desire to grow its physical retail presence.

Since 2015, Amazon has opened 11 bookstores, 40 pop-up Amazon stores across the US (mainly designed to showcase its products), pick-up lockers in thousands of retail stores, and "treasure trucks" that sell certain items at discount in six US cities. While at the same time, it has accelerated the speed at which it is bringing to market new Amazon Echo services.

" As technology becomes increasingly affordable, it is dispersed into the physical world and blurs into the background."

Audi Q7 which features haptic feedback controls.

Carnival on board experience and medallion.

What's next?

As technology becomes increasingly affordable, it is dispersed into the physical world. People are being served a growing number of personalized experiences anytime, anywhere, and they will expect many of the benefits they feel today to continue and to evolve as they move from one physical environment to another.

Already, we have seen voice-activated interfaces shift the emphasis onto a screen-free physical experience and away from interacting with a digital device as an end in itself. And we have seen interfaces evolve in other ways, such as the emerging use of haptic feedback—using vibrations to provide feedback and guide behavior, which especially benefits the visually impaired.

Audi, for example, has integrated haptic feedback and gesture recognition into its vehicles to declutter and minimize distractions from the user while driving. Ultrahaptics system pushes the boundaries even further.

At city level, we will soon see a mapping of physical and digital together. In Hangzhou, China, Alibaba has been using AI to process video, social media, traffic and other data for its City Brain project, and congestion has been reduced. Reportedly, they are packaging the system for use elsewhere.

To capitalize on this sort of thinking, organizations must re-structure and develop new skills. Reintroducing a physical dimension to services provides an opportunity to differentiate at scale—which has been harder to achieve in the age of apps.

The future of service design will be all about blending physical with digital. Particular skills will be required for each, so we will see designers who specialize in physical and digital design working closely together, with shared goals. This will have huge implications for brands and organizations. Local Motors is successfully organizing around this: "We are focused on low volume manufacturing of open-source vehicle designs, using multiple microfactories and a co-creation SaaS platform."

Already, design specialists are responding. Carnival Corporation, for example, has developed the Medallion—a wearable smart coin that connects customers to a cruise ship through a digitally-enabled service called the Compass. It ensures each guest receives a unique and seamless experience with their personal preferences constantly captured to optimize service as it is delivered.

Having seen how things were developing, Accenture acquired design and innovation firm Matter in 2017. Matter focuses on designing products and experiences for a connected world, adding physical product design to Fjord's service design and digital product creation capabilities.

Organizations will also need to ask themselves an important question: as digital becomes ubiquitous and increasingly invisible, what future structure, brief and role should there be for digital departments or heads of digital?

Fjord suggests

01

Stop viewing digital and physical as separate

Instead ask: how do we design experiences and spaces to connect with people around us, enabled by digital in a physical world? Create experiences that fuse physical and digital. The relationship and connectivity between devices will be critical—and should be invisible.

02

Let technology inspire you

Traditionally, designers think first about the end user. In this space, designers also need to understand and look at the technological possibilities from the outset in order to deliver a new generation of services enabled by digital that thrill and excite. The joining of physical and digital design opens up a wealth of new possibilities and opportunities, so think laterally. As technology falls in price, indulge yourself in the art of the impossible.

03

Sharpen your design skills

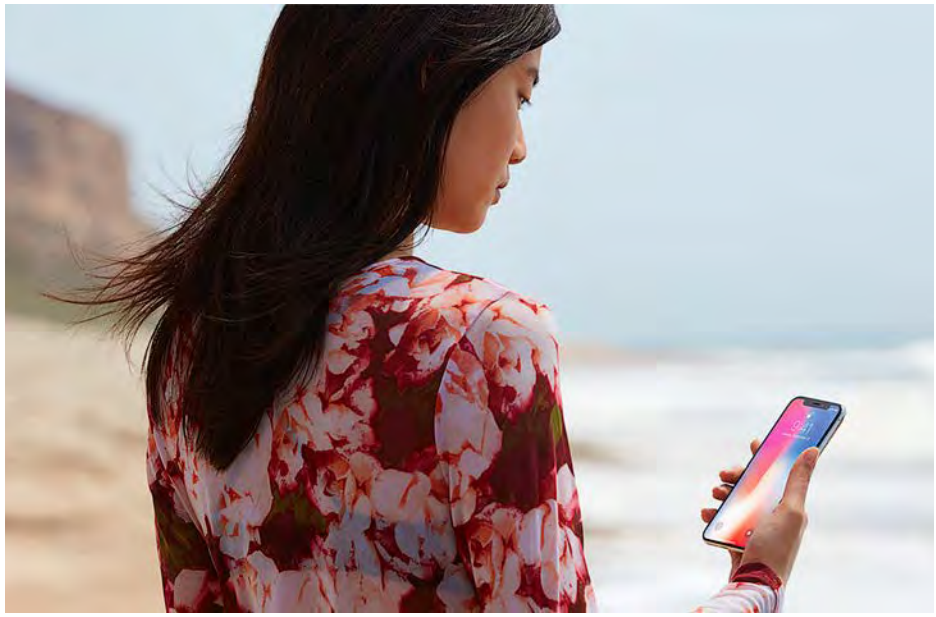
Greater physical experience design must be connected to your digital strategy. More digital will be integrated into physical products and services from the get-go. As a result, new physical and digital design capabilities may be needed in-house. And closer collaboration between physical and digital design specialists will be a must.

Trend 02

Computers have eyes

Computers have been able to read, comprehend and react to words for some time. Now, they can do the same with images. We got here with help from exponential progress in Artificial Intelligence and machine learning, combined with the fact that cameras are built into a greater variety of devices. Organizations can benefit from engaging with this powerful new source of data to create new digital services that add value and are truly compelling.

What's going on?



iPhone X, source Apple.

The camera is undergoing its biggest transformation since Louis Daguerre publicly unveiled the first practical photographic process—the daguerreotype—in 1839.

Over the almost-200 years since, the focus has been on capturing images as the device itself evolved through many varied forms and formats. As a result, intelligent digital cameras are now capturing data which can be processed through machine learning algorithms to provide more sophisticated insights than we've ever before accessed.

This has been caused by two major shifts.

First, cameras have become smarter—both in terms of what they can capture (their eyes) and what they can do with it (their brain). With sharper eyes and smarter brains, they're becoming more and more human-like. In the past, computers were limited by what a human can see and process, which was then translated into words for a computer to understand. Today, intelligent digital cameras can use "computer vision" to capture visual data, analyze and act on it without needing text inputs.

Google Clips, source Google.

Examples of the technological development to cameras' eyes are starting to appear: Google recently launched Clips—a digital camera without a display that takes pictures for you, using machine learning to recognize and learn faces, and look for interesting moments to record.

Apple's newest iPhone X has the ability to unlock itself using facial recognition.

In China, Alibaba is piloting facial recognition technology at 10,000 parcel pickup locations across Shanghai, to allow users to unlock delivery drop boxes. Meanwhile, Chinese facial recognition start-up Face++ has developed a face-detecting

Amazon Echo Look

Bosch vision for automated driving.

system now used in several apps including one to transfer money through Alipay (a mobile payment app used by more than 120m people), which scans the user's face as the only security credential.

In entertainment, Disney's research arm is experimenting with facial recognition to gauge how an audience is responding to a movie. Computer vision is a major step forward. And as computers become skilled at understanding what they see, they can spot patterns in data otherwise invisible to humans.

Cars are using intelligent cameras to assess their environment, process the data and respond accordingly—like a driver would. Bosch has created the Automated Mobility Academy that focuses on teaching vehicles how to drive. Using sensors, hardware and software, Bosch's Mobility Solutions deliver connected mobility that allows driverless cars to become a reality.

The "brain" attached to these eyes is becoming ever-more powerful thanks to Artificial Intelligence and machine learning. No longer do we need to manually input information to help a computer interpret an image—a growing number of devices can read our emotions and respond in real time.

"The 'brain' attached to these eyes is getting evermore powerful, thanks to Artificial Intelligence and Machine Learning."

In early 2017, Amazon added a camera to its new-look Echo, which enabled it to see and hear all. A user can now use it hands-free to take a still or video selfie, and view it on their smartphone to check how the they look before going out.

In Singapore, meanwhile, Sushi Express has worked with Hewlett Packard Enterprises to install cameras that track the popularity of dishes on a sushi belt, gauge which are hot and advise chefs when to prepare fresh replacements, reducing waste on less popular dishes.

The second shift is that eyes are now present in all sorts of objects—from smart wallets for catching thieves to smart contact lenses—thanks to the relative cheapness of camera technology.

For most of us, our cameras and our phones are the same device—and once that camera starts to see, it can do much more than take a picture. For example, with Google's multilingual machine translation service, travelers can use their phone to translate, simply by pointing it at text.

These shifts combine to bring a further level of sophistication and automation to our products and services. Software developer Eric Raymond once stated that "a computer should never ask the user for any information that it can auto-detect, copy, or deduce." Already, there are examples of how computer vision is taking digital services to a new level—and directly asking the user less and less.

"This new wave of computer vision will require computers to act more like humans."

What's next?

Nanit baby monitor.

Eye capture linked to Artificial Intelligence and machine learning will generate data containing more powerful insight than ever before, and designers will have to figure out how best to unlock it and utilize it to create compelling new products and services. This is both the big opportunity and the big challenge.

We are already seeing a diverse array of new applications for computer vision emerging. For example, Nanit is a baby monitor that watches a child sleep through a camera, then processes the information, providing insights on the emerging patterns impacting sleep quality.

Microsoft recently launched the Seeing AI app for the blind and visually impaired community to help people get a fuller narrative of the world around them by using computers as their eyes. The app narrates the world around a person, explaining what's in front of them and recognizing the faces of people they are with.

This new wave of computer vision will require computers to act more like humans.

It's easy for a computer to process information but, this year, we will see computers processing information while reacting to the surrounding environment—using cognition and language skills to process information more like a person.

Nest Cam IQ Indoor

With better quality input comes better quality output, and better output will drive better insights and outcomes. This will offer significant opportunities for organizations to develop a new generation of services.

It will be important to consider both the micro and macro implications. For example, what could a camera embedded in a bathroom mirror detect about the health of the person who uses it that morning, and what services might that inspire? What services could be built from insights harnessed from 10,000 such in-mirror cameras?

The true potential of computer vision depends on humans recognizing and trusting the fact that cameras and computers are becoming smarter and more integrated into daily life. This technology is ground-breaking, but none of it matters if humans won't allow it into their physical spaces and daily lives.

Security and privacy will be important issues for users in order to build trust and acceptance. People will be free to choose whether or not to invite intelligent cameras into their homes and lives. Designers must figure out not just how to make this feel safe and comfortable but how to make the experience valuable.

Fjord suggests

01

Rethink services

Organizations must start imagining the new generation of services they could create once information is more routinely and ubiquitously captured visually. An important first step is to consider the degree to which the devices or service responds to customers dependent on what it "sees."

02

Rethink your approach to data

Expect more data: eye capture will eliminate the current friction-generating steps of requiring a user to manually input data. Consider what data can be extracted from processing large quantities of visual images, and which would be most useful. Prepare for lots of different levels of data input, and plan today how best to prepare to accommodate that so data is not too unwieldy to use effectively.

03

Rethink the design context

As computers get better at reading the emotions of people using computer vision, human behaviors and intrinsic features will need to be designed into services to fully interest and engage users.

Trend 03

Slaves to the algorithm

We are looking at a new marketing environment, which is neither online retail nor a brick-and-mortar store. In this “third space,” algorithms are performing the role of gatekeeper between consumers and brands, and they are indifferent to the branding efforts that influence buying decisions people make for themselves. How do you define a marketing strategy when visual and empathy-reliant cues are removed?

What's going on?

Netflix

Spotify Discover Weekly

Three developments are ramping up to transform marketing over the year ahead: the rapid evolution of data-driven algorithms, the evolution of voice-enabled digital assistants and users' growing trust in both.

In the beginning, data-driven algorithms were introduced to make it simple to find just what users wanted in a sea of choice, which saved them time, money, and best of all, headspace. The more data the user shared, the more personalized the results they got. This is how Spotify learned how to consistently recommend new artists and tracks, and Netflix new films and box sets that users would instantly love.

Recently, the use of these algorithms has rapidly expanded beyond recommendation alone, spurring the development of a broad range of other propositions with Artificial Intelligence.

It has become common for brands to create a bot with the primary function of providing an extra interaction to deepen the connection between the brand and its customers. Examples include PINK, from Victoria's Secret, which learns about its customers' preferences to recommend specific styles of bra. In entertainment, Lionsgate launched a Power Ranger Alpha 5 bot ahead of a movie release to engage audiences by giving them a chance to chat with Alpha 5, the Power Rangers' robo assistant.

“In 2018, the rapidly-evolving voice-controlled shopping marketplace will create a ‘third space’ for retailers and brand owners.”

Amazon Echo Dot

Less common are impartial bots created by third parties with the primary aim of empowering or just making life easier for the user. Examples include DoNotPay—a “law bot” that will challenge parking fines on a user’s behalf, and banking bots such as Cleo which aims to be the Siri of personal finance. The creator of DoNotPay has recently extended the bot’s capabilities to helping refugees claim asylum.

Then you have text-based recommendation services that also enable users to make purchases. Early examples include brand owner-created messaging bots like Sephora’s, which launched on messaging app Kik in 2016. In addition to providing personalized beauty tips, product recommendations and reviews, it allows users to buy products mentioned in their chat—without leaving Kik.

The arrival and rapid evolution of voice-enabled digital assistants, (such as Amazon’s Alexa and WeChat owner Tencent’s Xiaowei) has transformed the experience of seeking product recommendations—making it more immediate, engaging and reactive than it was in text-based chats. And customers are embracing it much faster than predicted.

The challenge is this: when your customer has been seduced by the immediacy and fun factor of engaging with the likes of Alexa instead of directly with your brand, how do you reach that customer? Alexa and her rivals have in-built biases, so the key lies in finding ways around them.

In spring 2017, it was predicted that users of voice-enabled speakers—a market dominated by Amazon, which has an estimated market share of 70%—would increase by 130% by the end of the year. And the market looks set to continue growing significantly, given that 25% of smart speaker owners now use them for 11 or more tasks.

Though it has taken time for customers to get comfortable with algorithm-powered services, trust levels have now reached the point where customers are confident using them for purchases. Inevitably, it wasn’t long before the first brands struck deals with Amazon to enable customers to order via Alexa simply by speaking to her. These pioneers included pizza chain Domino’s and UK online supermarket Ocado.

Customers have taken a little while to get used to trusting algorithms, but we can now see evidence of a marked shift in the way they discover and decide what to buy. Already, customers are actively and passively deferring to algorithms.

In 2018, the rapidly-evolving voice-controlled shopping marketplace is expected to create a “third space” for retailers and brand owners. Sitting between online outlets and physical bricks-and-mortar stores, this new marketplace will be powered by algorithms rather than conventional browsing, where customers will make lots of buying decisions without even seeing the products first.

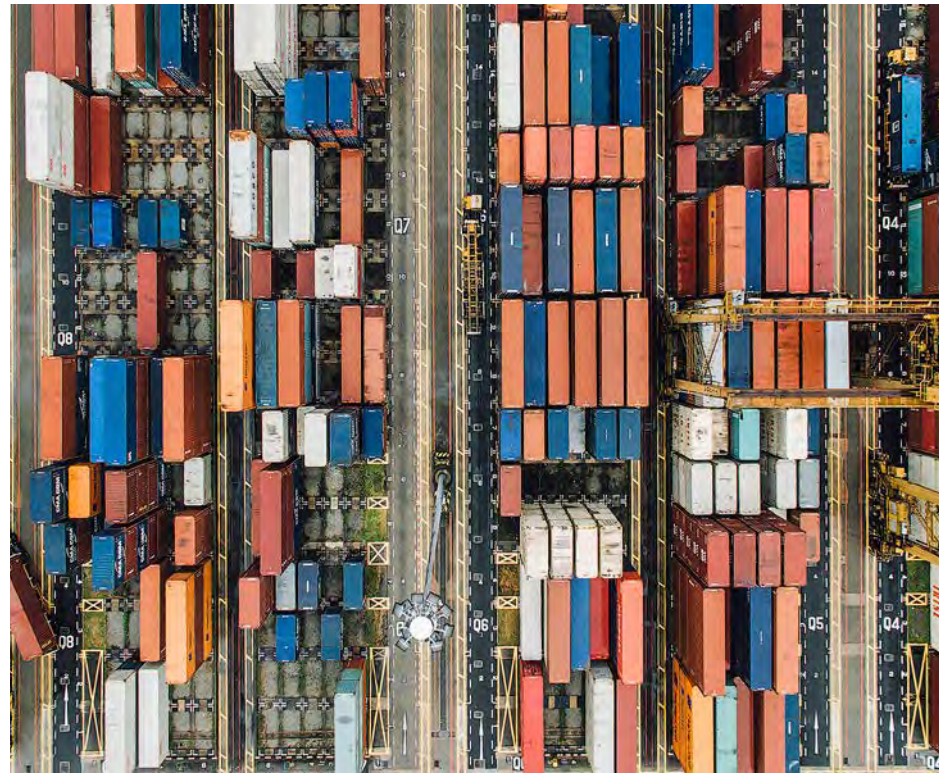
What's next?

Amazon Echo

Market signals are already telling us that as algorithm-based assistants continue to develop and thrive, they will become significant sales channels. As the machine learning that powers these algorithms continues to rapidly evolve, more personalized and preference-based services will emerge.

Gatekeeper algorithms will appear to make customers' lives easier, but they will need to understand the difference between self-serving services created to meet a brand's primary interests—typically, to sell more—and others designed for customers' benefit. As consumers distinguish between these two types of service, they will eventually choose the ones that best meet different needs, and which they trust the most.

" As the Machine Learning that powers these algorithms continues to rapidly evolve, more personalized and preference-based services will emerge."



Some organizations will be able to create gatekeeper algorithms, and their success will rely on their understanding of what different groups of their customers value best and want most from such services. Other organizations, however, will find that some gatekeeper algorithms have the power to limit their direct access to their customers.

There's a strong chance we will soon see a desensitized algorithm sitting in between an organization and its customers—one that does not notice things like visual branding efforts, celebrity endorsements or advertising campaigns. Being inherently empathetic beings, people are influenced by such things, but algorithms are not. This poses a potential problem for consumer packaged goods and retailers: if the gatekeeper between a brand and its customers isn't susceptible to the efforts it makes to win customers over, how will brands connect with shoppers?

Then comes bias. When a customer chooses a digital assistant on a particular platform, they will essentially lock themselves into a relationship with that platform's partners, creating barriers to competing brands. Essentially, homes will be turned into stores without packaging and signage, making retailers' traditional attention-grabbing strategies obsolete. This will have multiple implications for brands as well as retailers.

Already, Amazon's Alexa is more likely to recommend Amazon Prime products for first time orders. This makes it more difficult for any other brands to have their products included in Alexa's search results—particularly lesser-known brands.

Recommendation algorithms are deemed by their creators to work best when they are neither too formal nor too novel. Typically, these algorithms tend to exploit known preferences rather than encouraging users to browse new options. New or smaller, less familiar brands will find this an obstacle to their efforts to gain traction.

Over the year ahead, packaged goods and retail brands will need to learn how to navigate a new environment in which previously reliable consumer behaviors, like impulse-buying, will be eliminated or greatly reduced, and standard marketing objectives like acquiring market share will become more of a challenge.

Brands will need to understand how to get past an algorithm that enables its user to purchase products without seeing them, and they will need to find new ways to influence customers' decisions and their customers' chosen algorithms.

There is a precedent for this in search engine optimization, which aims to maximize a website's visibility to online search engines. Algorithm optimization will be next.

Fjord suggests

01

Get to know the gatekeepers

Understand them, understand how to be ranked by them, understand how to bypass them. Consider carefully whether a product or service can be designed to make it past the gatekeeper, and how to earn customer loyalty once it does. Consider creating collaborative or complementary services on an existing platform, as Domino's did with Alexa.

02

Adapt to the new marketing environment

In a world in which ingrained consumer behaviors are bypassed, find new ways to prompt your brand and purchase. Brand names will operate like a secret password so train customers to ask for you by name rather than something generic (like "shoes"). Brands synonymous with a category (like Kleenex) have the clearest advantage. Hone additional tactics that aid brand recall and differentiating features. Could one-click purchase ads be the savior of impulse brands (and advertising)? Consider how to inject purchase prompts into the environment where the customer is—in the home, car or elsewhere.

03

Beware the backlash

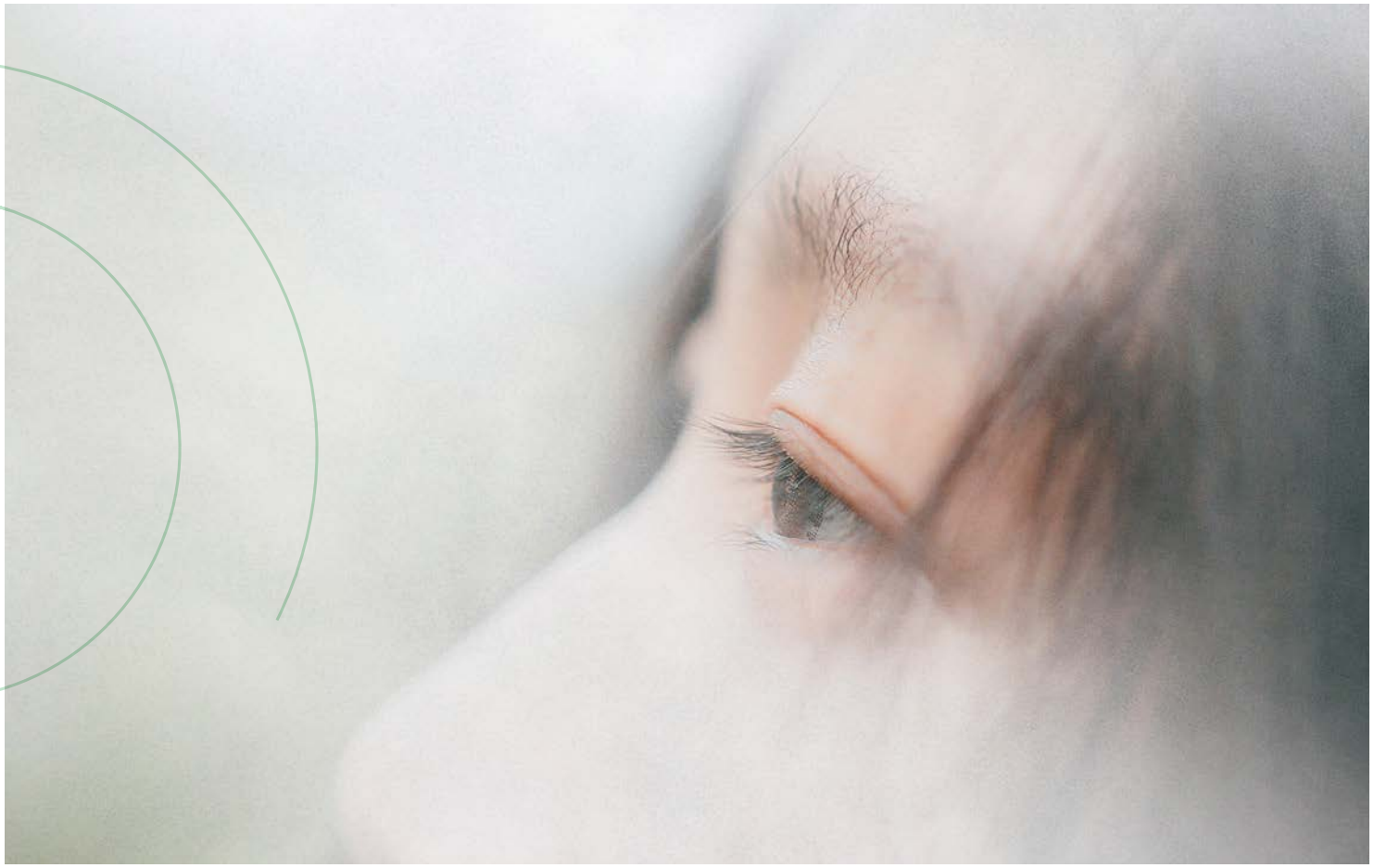
Prepare for the possibility that once algorithms' newness wears off, market fatigue dampens consumer enthusiasm. Or that consumers begin to worry their assistant has too much power over their decisions. Algorithms have limitations. Consider how they might be gamed, or hacked, and how could that affect trust in them.

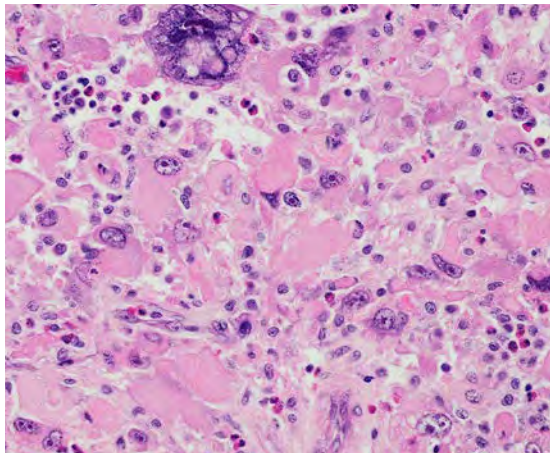
Trend 04

A machine's search for meaning

Where once the "threat" to jobs was the introduction of production lines, typewriters or motorized vehicles, the hot topic now is the rise of Artificial Intelligence and robots. Organizations must stop talking about it and start designing for this change, by coming to terms with how to enable people and machines to get the best out of each other.

What's going on?





Deep learning was used by a Harvard-based team to improve the accuracy of pathological diagnoses.

The early days of Artificial Intelligence were intrinsically linked with robots, but the rise of digital—and the software and networks that underpin it—have decoupled AI from robotics and extended its reach to a broader range of machines.

Already, machines can do a lot of our heavy lifting (literally and figuratively), and every time they do, they get smarter. Not so long ago, manual labor looked most challenged by AI, but its growing capability could see it intervene in many knowledge worker jobs, too. In China, for example, a robotic dentist recently completed its first independent implant surgery on a patient.

Furthermore, realization is growing that machines are becoming, in the words of Fjord designer Paige Maguire: "another type of user"—a collaborator or co-worker.

AI & humans working together

Cancer Detection Accuracy

AI working alone	**92%**
Pathologist working alone	**96%**
AI + Pathologist together	**99.5%**

Many are fixated on which jobs AI and machine learning will make obsolete, but this preoccupation is misguided.

True, machines have traditionally replaced humans in jobs involving repetitive tasks in non-changing environments, and they will continue to do so. Yet, now that today's AI-driven machines having decision-making capabilities and can do anything from detecting and picking only ripe apples to driving a car, they will encroach into a more diverse array of professions.

Crucially, though, the debate is shifting away from which jobs will go, and onto new and innovative ways in which people and machines can collaborate.

A Harvard-based team recently devised an AI method that could identify cancer cells with 92% accuracy. In their experiment, pathologists beat the machines by achieving 96% accuracy. When they worked together, however, the combined forces of human pathologists and AI accurately identified 99.5% of cancerous biopsies, brilliantly showing how AI and people are at their best when they collaborate.

Google is now using AI combined with human reviewers to identify and remove controversial content across YouTube. A powerful benefit of the collaboration is reducing the exposure of human reviewers to graphic content.

In early 2018, drones are due to deliver vaccines to the remote island nation of Vanuatu as part of a partnership between the island's government and UNICEF, to provide practical help for health workers on the ground.

Humanoid robots Pepper and Nao, made by Japanese company Softbank Robotics, have recently been trialled in two Singapore preschools. The robots helped teachers by asking children questions about a story they had just heard, prompting them to select answers on the screen. Again, the idea is to complement, not to replace.

The introduction of machines won't always mean fewer jobs for humans—just different ones. Mortgage brokers spend as much as 90% of their time processing applications. Such tasks are well-suited to being taken over by AI, which would liberate the mortgage brokers to focus on ambiguous cases and spend more time interacting with people rather than screens.

Pepper by Softbank

"The introduction of machines won't always mean fewer jobs for humans—just different ones."

In a recent global study, Accenture identified new job categories—Trainers, Explainers and Sustainers—where humans will complement the tasks performed by cognitive technology, created by the rise of AI-enabled machines.

Following its US$775m acquisition of robotics company Kiva, Amazon now employs more than 45,000 robots—and is still recruiting and employing people.

What's next?

Robotic warehouse, Amazon

We need to rethink the way in which machines and people coexist, and design ways to help them get the best from each other.

To avoid what has been called by some a "robot apocalypse," organizations must pool collective ingenuity, intelligence and relentless optimism to invent new ways for machines to amplify our own human capabilities. The key is to plan for a future in which people and machines work collaboratively.

We can succeed if we evolve appropriate interactions between people and machines that are powerful enough to redefine the nature of work.

BMW is already setting a strong example. One of its latest concept cars is designed to mitigate miscommunication with driverless vehicles by building a pseudo-relationship between the car and its passengers to make them feel safe when being driven around by a machine.

As a discipline that starts and ends with people, design will have a central role to play in enabling organizations to design solutions that enable their people to become comfortable with the addition of AI in the workplace.

Microsoft HoloLens

Designers will help organizations identify how they need to evolve, in order to design experiences, products and services for the new world that lies ahead. They will also help redefine the nature of the working experience and develop a new generation of products and services—some automated, others collaborative—to harness humans' and machines' combined strengths.

Moving forward, organizations must deepen their understanding of AI, consider and address some of the deeper issues and optimize strategies accordingly. Important questions they must now ask themselves include: how will we interact with machines; how will we learn to work with them; how will they learn from us; and how will we create two-way communication?

The more human-centered and social we make these interactions, the more complexity and flexibility we also introduce—not a trivial challenge. Machines need to learn about people's inconsistent use of language and the ways in which we marry words with gestures, and they will have to be able to interpret and reproduce a new etiquette.

Organizations must redesign their culture, gearing it toward meaningful work and constant learning. Looking ahead, at least 45% of what people are currently paid to do is open to automation. If it happens, this shift will converge with the dominant culture of millennials in the workplace. A Fidelity study showed millennials would take a pay cut of US$7,600 if they could find a more purposeful work or a better culture elsewhere.

WeWork co-working office space, Austin.

There are certain unfulfilling tasks that will need to be automated because people do not want to do them anymore. Organizations will need to act with care, however. If automation is imposed from the top without taking employees on the journey, rebellion and sabotage could follow.

To enable staff to evolve as previously unimagined careers emerge, organizations need to start transforming their cultures to facilitate continuous learning. They must skillfully nurture new talent (especially if AI takes over the work traditionally done by juniors) and encourage more experienced talent to be ready to absorb a constant flow of new information.

Organizations will have the opportunity to upgrade and optimize their design approach and strategy with design for a certain degree of automation. Mark Rolston, founder of Argodesign, has identified a "fat middle ground" that could benefit from some kind of AI intervention between "purely aesthetic and purely technical—incrementally tweaking designs, optimizing column widths, and experimenting with color schemes."

The design discipline must further evolve in response to the growing need for combining human-centered design with machine learning. Already, companies that provide design services are making moves in this direction. Recently, our Accenture colleagues launched Accenture Applied Intelligence, and IDEO acquired data science company, Datascope.

There will be a need for a new generation of automated products and services that harness the strengths of effective collaboration between humans and machines—this relies on successfully combining human-centered design and machine learning. These new products and services will be essential to solve problems that we can only imagine today, such as how to build visibility into machine-to-machine conversations so that people understand how machines communicate with each other.

Fjord suggests

01

Think collaboratively, not competitively

Let people do what they do best and let machines do what people do worst. Start by considering which work activities are most meaningful to us. Better, find the best way for both to work collaboratively and pool their strengths. Remember to take your people on the journey with you—to build trust in the impact of machine learning and AI, they must feel reassured, included and informed.

02

Design for interaction

Think how quickly you can tell a machine to do something, and how quickly a machine can tell you what it has done, but remember they don't have the same diversity and rich communication skills of people. Design machines to ask questions and clarify their instructions: less ambiguity = a lower error rate.

03

Be transparent, be inclusive

Algorithmic transparency should be central to your brand values. Staff and customers alike must have an understanding of how decisions are being made. Technology fails when it is not inclusive. AI has the potential to fail on a grand scale. Ensure diversity of people, data, and AI-enabled machines to keep biases in check.

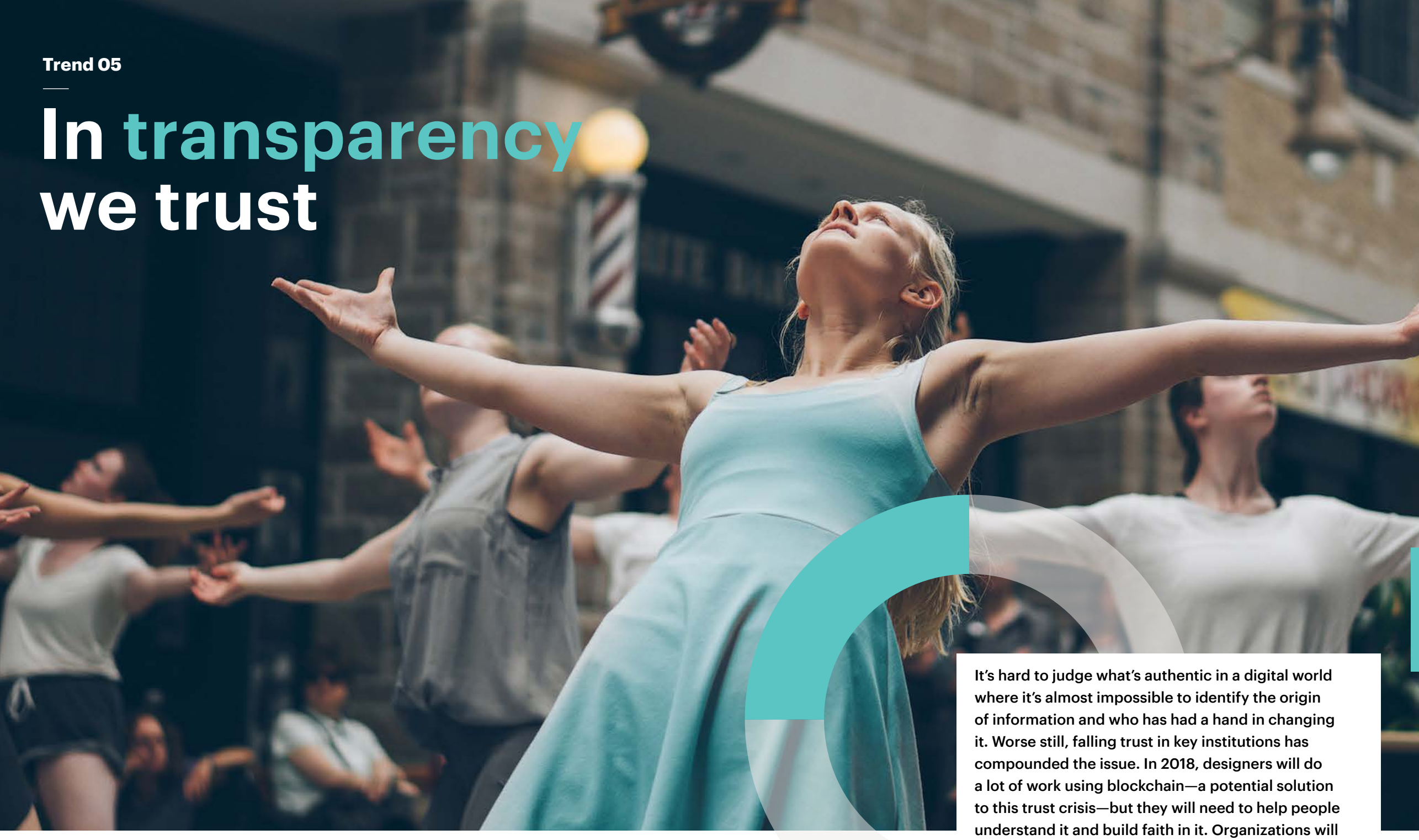
04

Future-plan for staff evolution

Who trains the next generation if AI is doing all the junior work? Organizations need a plan for enabling their staff to evolve. Remember, the journey must be taken together in order to make the most of what can be a synergistic relationship between people and machines. Employee experience is a key differentiator in the search for talent.

Trend 05

In transparency we trust



It's hard to judge what's authentic in a digital world where it's almost impossible to identify the origin of information and who has had a hand in changing it. Worse still, falling trust in key institutions has compounded the issue. In 2018, designers will do a lot of work using blockchain—a potential solution to this trust crisis—but they will need to help people understand it and build faith in it. Organizations will need to shift their emphasis from "touch points" to "trust points" when carving out market differentiation.

What's going on?

People's trust in key institutions—businesses, governments, media and NGOs—is plummeting, and their belief that "the system" is working for them is crumbling. Driven by globalization, pace of innovative disruption and a breakdown in social values, this crisis is at a tipping point.

Technology has given us unprecedented control and autonomy to fulfill our on-demand needs and curate customized experiences, but it has also fuelled our fears and made us feel more vulnerable. With many individuals unsure or even oblivious to how their data is harvested, used, shared and protected, data security, privacy, and lack of transparency have become major concerns.

Trust can be regained if organizations actively engage with the problem. One option is to use blockchain technology. By creating services based on this technology, it will become less crucial that consumers trust organizations themselves, so long as they trust blockchain. This shift has the potential to reinvent our conceptual model of trust.

A blockchain is a shared, decentralized, secure database which enables any system or device connected to a network—for example, a file server, a computer or a printer—to be connected to it. Each entry on that database is a block. No entry can be changed retrospectively, and unlike a conventional database, the chain of blocks is connected without a single organization officially designated to administer and oversee it.

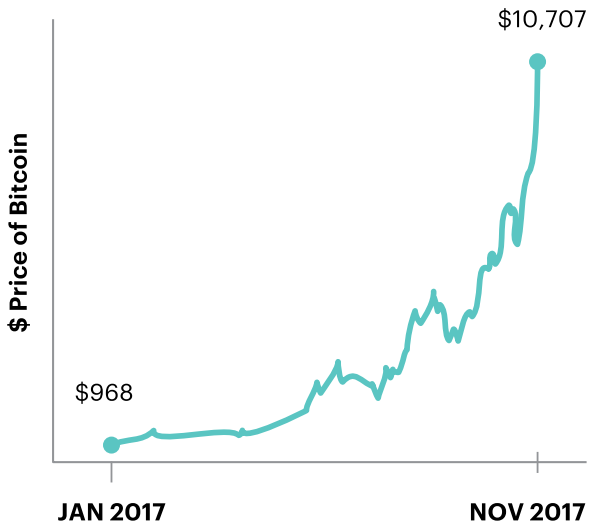
For example, a blockchain for a patient's medical records would comprise a series of records—each stamped with the date and time when it was created. Only the doctor, who has one private key, and the patient, who has another, can access the information. That information is only shared when the doctor or patient shares their private key with a third party—say a hospital or a specialist.

Inhabitants of a UNHCR Refugee camp - s focus for the ID2020 project by Microsoft, Accenture, Fjord and Avanade.

A blockchain can serve as an open, shared, yet secure database recording transactions between parties efficiently, verifiably and permanently—a growing number of organizations are now starting to harness these strengths. In fact, the volume of investment in blockchain startups is expected to eclipse US$3 billion by the end of 2017.

The best-known use of blockchain technology is bitcoin—the digital "crypto-currency" which is transacted without middlemen (banks), without transaction fees, and without the need to give your real name. The price of bitcoin, now one of a number of digital currencies, jumped in value by 900% between January and November 2017.

The rise of Bitcoin



Data source: Coindesk

"Blockchain will enable us to introduce an open platform to share data between parties"

Dubai, which has pledged to become a blockchain first economy by 2020.

Other industries—and governments—are also turning to blockchain technology. For instance, blockchain is being explored as an enabler of peer-to-peer energy trading. It allows households that consume and also produce energy to buy and sell it directly, with a high degree of autonomy and security.

Blockchain will enable us to introduce an open platform to share data between parties—including a car's manufacturer, owner, passenger, infrastructure providers and insurers—which will be necessary if we are to make autonomous driving viable. For this reason, Jaguar Land Rover recently announced it was backing UK start-up DOVU, which is using blockchain to build a global marketplace for transport data.

In the public sector, Microsoft, Accenture, Fjord and Avanade recently worked with ID2020 to develop a global ID system powered by blockchain for use by 1.1bn people in distressed situations without ID—such as refugees—to create a legal and permanent identity.

Dubai has pledged to become a blockchain-first economy by 2020, aiming to conduct the majority of the Emirate's business using blockchain. Meanwhile, Sweden is adopting "smart contracts" powered by blockchain for a land registry system. They are programmable contracts that self-execute when certain conditions are met, which streamlines an antiquated and laborious process.

Self-executing contracts represent a powerful example of a Living Service—a new generation of contextually-aware and indispensable services set to transform and improve the way we live, brought about by harnessing a combination of technologies to deliver a new layer of connected intelligence.

What's next?

Image source, Spotify

Organizations must act now to understand and harness blockchain's potential to deliver transparency and the role it can play in rebuilding trust—between organization and customer, and between organization and employee—as doing nothing risks a further distancing between these parties and, at worst, failure to connect and compromised credibility.

Because blockchain enables anything to be traced to its origin with all additions made visible along the way, it is now being explored as a way of addressing concerns about the integrity of elections and fears about hacked votes.

Platforms like FollowMyVote—a blockchain venture allowing for secure, anonymous voting, monitored in real time—are developing just this in the US. In South Asia, blockchain is being discussed as a powerful opportunity in a region where trust in financial institutions was already low—even before the 2008 financial crash.

In collaboration with Thales, Accenture recently launched a blockchain-backed proof of concept to help defence enforce supply chain standards.

UK advertiser The Marketing Group has launched Truth—the first global media agency powered by a blockchain-based trading desk to build a cleaner media supply chain with 100% transparency.

Designing services and products with trust as their hallmark characteristic will bring new opportunities—but also challenges. It will require new language and techniques, and it will depend on people understanding what blockchain is, accepting its deployment and trusting it. Otherwise, blockchain's potential to reverse the general crisis in trust will not be realized.

"Organizations must act now to understand and harness blockchain's potential to deliver transparency and the role it can play in re-building trust."

"Organizations will need to prepare for an inevitable shift from 'touch points' to 'trust points'."

Organizations will need to prepare for an inevitable shift from "touch points" to "trust points" as quality of trust rather than quality of interaction provides competitive advantage. They must explore, too, how to build trust through radical transparency. And at all times, their focus must be fixed on the human response to transparency, without getting hung up on the technology that can deliver it.

Expect new and innovative uses of blockchain technology such as Alice.si—a UK service which uses blockchain to offer charity donors the option to track their donations, and which keeps funds secure and releases them only when a chosen charity's goals are achieved.

Expect more leading organizations to invest in blockchain following Spotify's recent acquisition of start-up Mediachain. Spotify needs to ensure it pays the right people for every track that is played via its service. This task grows harder as its user numbers grow but it is also difficult because many of the billions of tracks played on Spotify daily don't have the proper metadata to ensure that the correct songwriters, artists or rights holders are tagged. This means royalties may not be registered, or could go missing. Spotify's acquisition of Mediachain is designed to address this need.

Fjord suggests

01

Act now

Take understanding blockchain off the "too hard to do" list and educate yourself and your workforce (all employees, not just those in technology roles) about its potential. Blockchain is not just a "deep technology" phenomenon—it's a game-changer.

02

Design for trust

To earn trust, an organization must be transparent. It will be important to design new navigation systems that simplify complex business processes and demonstrate transparency. Once the trust crisis is addressed, we will see new services emerge, which will capitalize on far deeper levels of trust.

03

Open up for collaboration

Despite significant investment, scaled implementation of blockchain technologies is slow due to many industries' wariness about privacy, governance, protection and the high degree of collaboration required to share and store data. Collaborate with trusted partners to maximize blockchain's potential.

Trend 06

The ethics economy

Organizations have started to take political stances on issues of general concern and, over the coming year, this will grow more commonplace—driven by customers' and employees' accelerating expectations. No organization will be able to afford to sit back and claim to be neutral. Navigating this new territory successfully starts with preparing to have every action (and inaction) closely scrutinized and used as a differentiator for customers choosing between two otherwise comparable options.

What's going on?

San Francisco Pride week

Apple CEO Tim Cook explained in September 2017 why he has openly campaigned for gay marriage and opposed religious freedom laws, despite a tradition of US corporate leaders keeping their political views to themselves.

"People should have values," he said. "Companies are nothing more than a collection of people. So, by extension, all companies should have values. As a CEO, I think one of your responsibilities is to decide what the values of your company are, and lead accordingly."

His sentiment neatly highlights the new environment in which organizations now find themselves and how they must prepare to best meet evolving employee and customer expectations in the year ahead.

Until now, it has been enough for an organization to be reactive. As customers, we wanted brands to make us feel like we were making good choices, so Patagonia, The Body Shop, shoe brand TOMS and others like them helped us to feel like we were being responsible.

"Companies are nothing more than a collection of people. So, by extension, all companies should have values."
- Tim Cook.

Tim Cook: Image source, Apple

More recently, customers have demanded brands do the right thing—quickly owning up when they make a mistake, for example. Inaction is dangerous, as shown by the backlash against United Airlines when it failed to quickly apologize for mistreating a passenger when removing him from a flight.

Organizations responded because they feared losing business, and they started to recognize that customers hold the power to build or tear down brands with their spending behaviors and online actions. Consider the power of hashtags. In the past 12 months, individuals and organizations have been sent into a spin by the significant consequences of their ethical decisions, made widespread by prolific social media campaigns.

Public scrutiny is the new normal, and social media has become a volatile and intimidating platform where brands can respond to current affairs. The public's mood can change fast—and share prices impacted accordingly.

"Organizations responded because they feared losing business, and they started to recognize that customers hold the power to build or tear down brands."

Tesla recently sent giant batteries, coupled with solar panels, to Puerto Rico, in response to the Hurricane Maria devastation.

The financial app Triggers, which notifies investors of micro news events that impact stock value, is just one example that shows how deeply companies are affected by seemingly minor everyday affairs.

While being reactive was previously enough, customers and employees now expect brands to proactively represent their ideologies and bring their ethical beliefs to life across a broader canvas of issues and concerns. This has coincided with a decline in people's trust and faith in governments, which has created an opportunity for organizations to step up in opposition to controversial policy.

Across the board, consumers and employees now expect to be able to make their voices heard in bigger decisions. More importantly, they expect organizations to listen without being asked.

A growing number of organizations are meeting this demand in a variety of ways, including taking a stand further away from home. For example, in response to the devastation wrought on Puerto Rico by Hurricane Maria, Tesla sent giant batteries coupled with solar panels. These batteries can store solar energy for use day and night and as such, allowed workers to begin to rebuild the infrastructure—a move that went beyond the kind of disaster relief aid we are used to seeing.

What's next?

A growing number of organizations are making their ethics clear across a range of issues by spelling them out in manifestos distributed to employees. For example, Facebook co-founder and CEO Mark Zuckerberg recently wrote and distributed a 6,000-word outline of Facebook's role in everything from promoting civic engagement to combating global crises.

In our 2017 trend Unintended Consequences, we highlighted the need for organizations to confront the unexpected impacts of their products and services, business strategies and actions. Within just one year, a new paradigm has become clear: organizations can no longer claim to be neutral or unaware. They must be proactive, identify and understand their position on a broad range of issues—before they are forced to take a stand.

"Taking a stance in 2018 will not–and cannot–be about charity, corporate social responsibility or damage limitation."

John Lewis recently got rid of 'Boys' and 'Girls' labels in children's clothing.

Taking a stance in 2018 will not—and cannot— be about charity, corporate social responsibility or damage limitation. Nor can it be about organizations being reactive, taking action only after concerns are voiced.

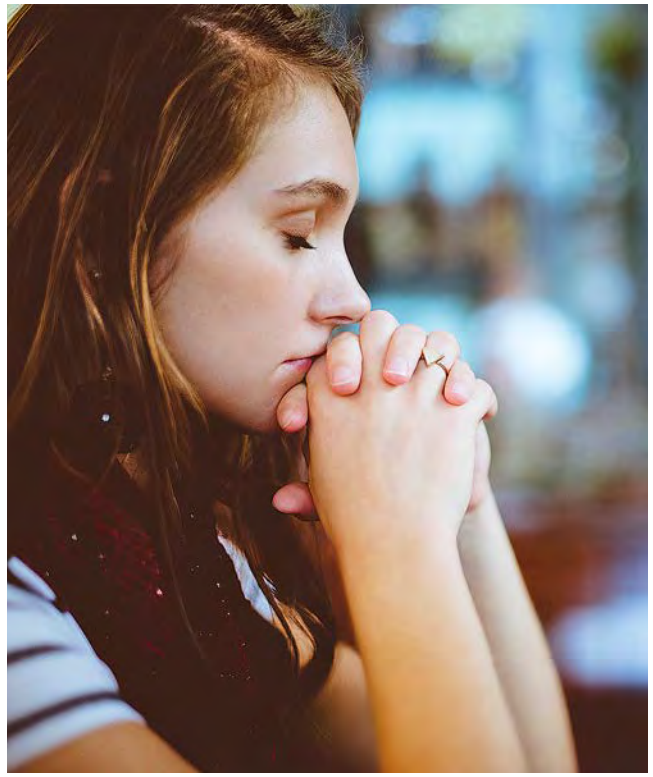
Instead, it must be about organizations being proactive and drawing a line in the sand on one or more of the many issues now concerning their customers and employees.

Forward-looking organizations are already interrogating themselves and their business practices to understand their own actions (good and bad), and also to consider events beyond their immediate realm so that they can make informed decisions on when and how to take a stand.

Two great examples of the way ahead can be found in retailing. British department store John Lewis recently decided to retire "boys" and "girls" labels in children's clothing—not due to public pressure, but simply because it believed this would be a good thing for gender equality and diversity.

IKEA has committed to employing refugees at production centres in Jordan as part of a long-term plan to create employment for 200,000 disadvantaged people around the world through social entrepreneurship programs.

Over the year ahead, organizations and design consultancies must ask themselves some hard questions if they are to meet their employees' and customers' ethical expectations. How does a company please everyone on topics that have been taboo or never discussed on a massive scale? How far should companies go in responding to



“The problems organizations will face will be multistakeholder, deep and complex at times.”

daily injustices and social issues that pop up around the world, and how can they do so with shareholders scrutinizing their every move? What type of world do they want to build, and who do they want to build it with?

Expect to see all organizations consider not just the human impact of their behaviors and actions, but the influence they would like to have on bigger issues such as extremism, equality and nationalism. Expect designers to help drive the moral compass and mechanics that help good decisions. Expect to see household brands and design companies working together to solve deeper systemic problems and forming larger networks to do so.

Making a difference will soon become a key point of differentiation, and the potential for ethics as a business metric is already the topic of some industry debate. We can expect new human metrics to emerge in addition to regular KPIs, and we’ll likely start to see Chief Ethics Officer roles created.

The problems organizations will face will be multi-stakeholder, deep and complex at times, requiring most if not all organizations to refocus in order to sharpen their sense of purpose beyond business performance and the bottom line. Only by restructuring will many be able to place values and ethics at the centre of their business—an essential next move.

Fjord suggests

01

Ethically self-audit

Invite your employees to help you define your contribution to human capital. Look within and understand your employees and customers, find shared values and desires, and build on them at regular intervals. Evaluate every decision for its human impact. Understand the ecosystem of people who directly or indirectly benefit from your company to drive more empathy—which will be critical to finding fair and human-centered solutions.

02

Define your personality and purpose

Make your ethical positions relevant and clear to your employees. Get out there and model the types of behaviors you’d like to see in the world. The more your mission and values are lived, the clearer it will be for you and your employees to anticipate what best to do.

03

Share ownership of goals

Co-generate ideas with your employees on things that matter at different levels. Turn your human-centered mission and values into external initiatives and partnerships. Define new success indicators so all can see how you are doing.

Trend 07

Design outside the lines

The design discipline is being challenged by three forces: the proliferation of design thinking, the demand for products to be scaled fast, and the potential of emerging technology. Designers need to continuously educate themselves and champion a greater emphasis on design craft if they're to deliver good, affordable digital products to market at the expected speed.

What's going on?

As encouraging as it is to see design thinking embraced widely, there is a danger that its proliferation blurs the distinction between novices and experts. When lots of people claim to employ its tenets in their work, it is crucial to be able to identify those who truly understand design thinking and its transformative promise.

Hospitals have integrated design thinking into their processes to better understand and serve their patients. Banking company Capital One has extended design outside its Digital Lab and into IT and other vital support services. Even in traditional manufacturing, firms such as US fluid dispensary manufacturer Fishman boast a design thinking approach to products and services. Some 39% of senior level executives interviewed for a recent Forbes Insight report had adopted the key precepts of design thinking.

While these examples indicate good intent, if the definition of design thinking is too narrow, or if its importance is overblown at the cost of other important factors, the decision to embrace it could in fact become counterproductive.

"The inherent need for speed that comes with Agile is crippling the creativity aspect of the design process."

Capital One Labs

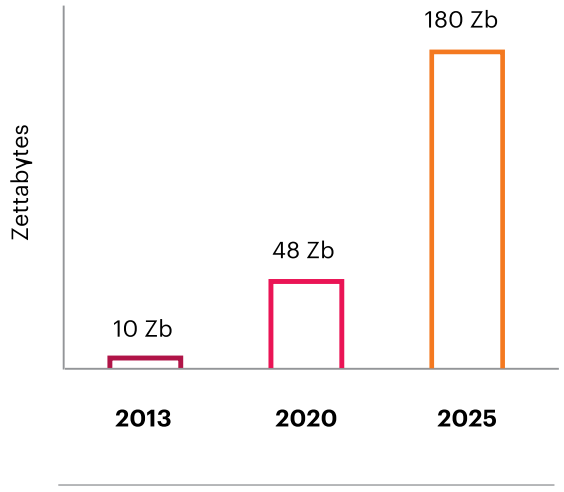
We are seeing increasing demand for products to be delivered and scaled fast in an Agile manner. The inherent need for speed that comes with Agile is crippling the creativity of the design process. The result is products being delivered to market quickly, but that sometimes lack simplicity, elegance, personality and ultimately craft, all of which should be significant selling points of design.

Staying with craft, think about the impact of mobile and social platforms on design. Some are highly prescriptive in their approach—tightly specifying design requirements for app developers inevitably results in too much lookalike design and too little aesthetic innovation.

The introduction of “flat design”—a trend in its own right—generates end products that lack originality, heart, soul and passion. Such shortcomings are the direct result of favoring a template approach to design rather than drafting as a true craftsman would. Consider, too, how many apps and logos now look the same.

Finally, the increasing importance and volume of data brings huge opportunity, as long as it is placed in the right hands. Market research firm IDC predicts the “digital universe”—the data created and copied every year—will reach 180 zettabytes (180 followed by 21 zeroes) by 2025, up from less than 10 zettabytes in 2015. Large amounts of data without a deep understanding of what to do with it, however, is useless.

Global data consumption



Data source, IDC

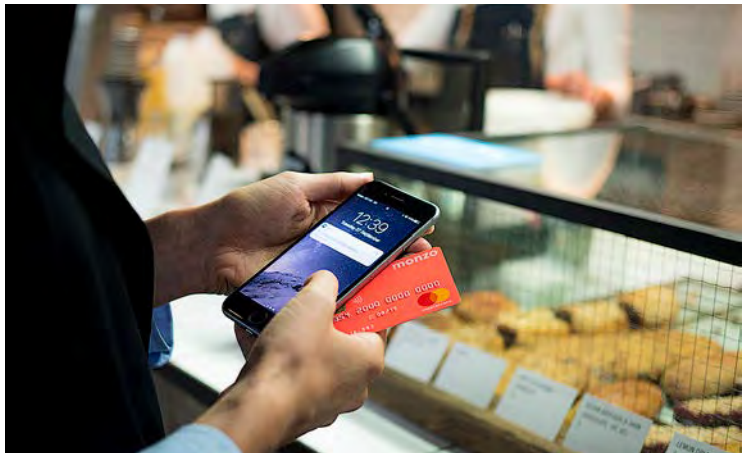
What’s next?

The discipline of design must evolve to stay relevant and ensure a design-driven approach. Organizations must re-evaluate and refocus on three pillars: depth in design craft; design processes, tools and team structures; and breadth of design skills. As we create more sophisticated Living Services that adapt to users’ needs, the need for new skills will become ever more pressing.

Organizations must understand that design thinking is at its most valuable when combined with design doing and supported by a strong design culture (Fjord describes this as “The Design Rule of 3”). Design is an important problem-solving tool and it is also capable of ensuring powerful market differentiation. Design craft is the factor that makes products loveable—essential for building the most compelling services and products.

Apple products are instantly recognizable inside and out—even without the logo. The company’s pride in its design craft is clear from the beautiful way the products are packaged. Another example is the UK-based “bank of the future,” Monzo, whose sign-up process is a thing of beauty thanks to its dramatic simplicity, tone of voice, bold color and emphasis on the human story.

“Organizations must understand that design thinking is at its most valuable when combined with design doing and supported by a strong design culture.”



Monzo Bank

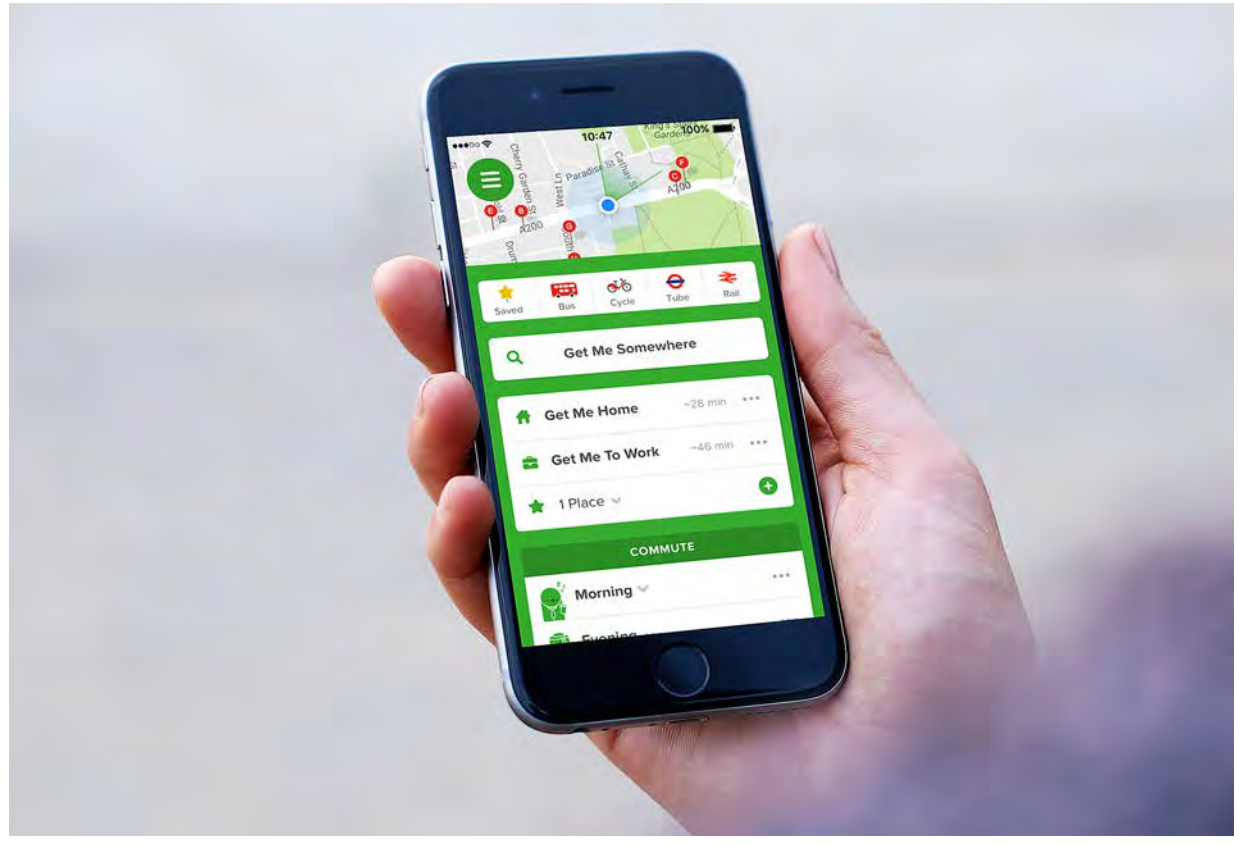
Citymapper was not the first transport application—in fact, it was just one of the thousand apps launched to bring people travel information on the go. Yet, its success is largely due to it being the first to pump the product full of personality, which shines through in the tone of voice and use of emojis, bold color palette and caricatures for each city.

It is crucial to continually optimize design processes, tools and team structures, and to embrace new methods and processes. Most importantly, organizations must define a clearer role for designers in development, which allows space for the thoughtfulness and rigor of design while not impeding the speed of Agile.

Designers are constantly evolving how they work to enable them to deliver and scale digital products more quickly, and design systems are central to helping them do this. They dedicate considerable time to finessing the craft and personality of a service to create the system, which can then be rolled out at speed across products.

Google Material Design is a great example of this, as a design language that aspires to unite the company's expansive product line under a rich set of design styles and principles—and Airbnb's design system is worth looking at, too.

Cloud-based Agile tools are enabling designers to work together at speed. Building on the established design system, products can be created and tested with users quickly—as has been powerfully demonstrated by Sketch and Figma.



Citymapper

> " As technology evolves, continual learning becomes a non-negotiable. Design today will be different from design tomorrow."

Meanwhile, designers are becoming accustomed to working in multi-disciplinary teams, working side-by-side with developers so their designs can be rapidly translated. While Spotify's early releases were undeniably transformative, their aesthetics and usability falls short of expectations. Since establishing the design team as an integral part of development, they have released well-designed products to the market quickly.

As technology evolves, continual learning becomes non-negotiable. Design today will be different from design tomorrow. Designers need to become comfortable with this and find a determination to remain endlessly curious about developments—both in their own craft and in tangential disciplines that bear an influence on it. We will start to see the emergence of "full-stack designers"—those who are familiar with a range of technologies and new disciplines.

Influencers such as John Maeda (head of computational design and inclusion at Automattic) have been talking for a while about the fact that designers should learn to code, but this is just one piece of the puzzle. With the rise of voice UI (by 2020, 30% of web browsing will be done off screen, according to Gartner), designers will soon stop working with pixels. They will need to reinvent how they craft experiences and express brands.

We now have access to unimaginable volumes of new data, produced by omnipresent sensors and smart devices powered by latest technologies. It will be critical to "buddy up" data scientists and designers to make sense of data and maximize its potential. This will require a new breed of designer that knows what data to ask for, and where to find it.

Design thinking and service design will help companies make data usable by employees, customers and partners, and will fuel innovation that opens up avenues to new customers. User experience is critical, so organizations will need to balance dual focus on humans and data to design a compelling response to customers and employees. They'll need a shift in mindset to temper their traditional focus on data security and privacy with an equal emphasis on accessibility.

And finally, designers need to be aware of the capabilities of machine learning, despite it being in its infancy, and remain doggedly focused on human need to extract its full potential.

Fjord suggests

01

Give designers space for their craft

Educate people on benefits of design thinking, but qualify it as just one part of design practice. Create a distinction between "thinkers" and "practitioners." Up-weight an emphasis on design craft to ensure product and service differentiation.

02

Establish multi-disciplinary teams

Product teams should include designers, developers, data scientists and business people working side-by-side throughout the process to bring new ideas to market at speed. These teams need to be empowered to work with autonomy, bypassing bureaucratic barriers that slow down progress or stifle creativity.

03

Designers: take responsibility for your craft

Design is changing. Become determined to remain constantly curious to discover—and hungry to understand—new technologies and processes. If you don't, your skills will become redundant. Continuous learning is key to having lasting impact.

References 2018

Physical fights back

Louis Columbus, *Forbes*, "Roundup of Internet of Things forecasts and market estimates," November 27, 2016.

Martin Pasquier, *Innovation is Everywhere*, "Why China leads the online-to-offline revolution," May 2015

Amit Roy Choudhury, *Business Times*, "Almost 90% of Asia-Pac retailers betting on click-and-collect: study," August 24, 2017

Trefis Team, *Forbes*, "Why is Alibaba strengthening its o2o presence?" December 31, 2015

Yvette Tan, *Mashable*, "China's version of Amazon's cashier-less store is here" July 12, 2017

Kate Taylor, *Business Insider*, "I visited Whole Foods on the day it was acquired by Amazon – and it's clear it'll never be the same," August 29, 2017

Eugene Kim, *CNBC*, "Amazon is firing on all cylinders to grow its retail presence," September 19, 2017

Haje Jan Kamps, *TechCrunch*, "Look out for Ultrahaptics haptic feedback in new cars this year," January 3, 2017

Timothy Revell, *New Scientist*, "A smart city in China tracks every citizen and yours could too," October 24, 2017

Local Motors

Brookes Barnes, *New York Times*, "Coming to Carnival Cruises: a wearable medallion that records your every whim," January 4, 2017

BusinessWire, "Accenture acquires leading design and innovation firm MATTER," September 6, 2017

Computers have eyes

Dieter Bohn, *The Verge*, "The Google Clips camera puts AI behind the lens," October 4, 2017

Avi Tugeman, *Forbes*, "iPhone X Facial Recognition: security, convenience and the user experience," October 20, 2017

He Wei, *China Daily/Asia News Network*, "Alibaba testing face recognition technology," September 15, 2017

Will Knight, *MIT Technology Review*, "Paying with your face: Face-detecting systems in China now authorize payments, provide access to facilities, and track down criminals. Will other countries follow?", Feb2017

Mark Wilson, *FastCoDesign*, "Disney's next movie could be watching you, too," July 24, 2017

Bosch, "Welcome to the Bosch Automated Mobility Academy"

Brian Heater, TechCrunch, "Amazon's new Echo Look has a built-in camera for style selfies," April 26, 2017

JumpAdvice.com, "Hewlett Packard Enterprises has the IoT tools for your business" August 6, 2017

Paul Miller, *The Verge*, "This wallet has a built-in camera for catching thieves," July 5, 2017

Science Alert, "Samsung just patented smart contact lenses with a built-in camera," April 8, 2016

Daniel Cooper, *Engadget*, "Nanit the AI nanny tries to unravel the mysteries of a restless baby," October 8, 2017

James Vincent, *The Verge*, "Microsoft's new iPhone app narrates the world for blind people," July 12, 2017

Slaves to the algorithm

Adelyn Zhou, *Forbes*, "The most innovative brands use bots in 3 key ways," March 16, 2017

Samuel Gibbs, *The Guardian*, "Chatbot lawyer overturns 160,000 parking tickets in London and New York," June 28, 2016

Finextra.com, "Personal finance bot Cleo arrives on Messenger," January 26, 2017

Eleni Cresci, *The Guardian*, "Chatbot that overturned 160,000 parking fines now helping refugees claim asylum," March 6, 2017

Rachel Arthur, *Forbes*, "Sephora launches chatbot on messaging app Kik," March 30, 2016

Eva Xiao, Tech in Asia, "Chinese tech giant Tencent launches AI assistant" June 29, 2017

eMarketer, "Alexa, say what? Voice-enabled speaker usage to grow nearly 130% this year," May 8, 2017

Bret Kinsella, *Voicebot.ai*, "25% of smart speaker owners used them for 11 or more tasks," October 2, 2017

Rebecca Stewart, *The Drum*, "Domino's turn to Amazon Echo to let customers order pizza using only their voice," July 31, 2017

Natasha Lomas, *TechCrunch*, "Ocado launches Alexa app for grocery shopping by voice," August 29, 2017

Lee Peterson, *RetailWire*, "How disruptive is Alexa to CPG brands?" August 1, 2017

Marty Swant, *AdWeek*, "Alexa is more likely to recommend Amazon Prime products, according to new research," July 7, 2017

The Economist, "How to devise the perfect recommendation algorithm," February 9, 2017

A machine's search for meaning

Lydia Smith, *The Independent*, "Robot dentist completes first ever operation without any input from humans," September 23, 2017

Christopher Wanjek, *Live Science*, "AI boosts cancer screens to nearly 100 percent accuracy," June 21, 2016

Samuel Gibbs, *The Guardian*, "Google says AI better than humans at scrubbing extremist YouTube content," August 1, 2017

BBC, "Drone vaccine delivery for island nation Vanuatu,' June 14, 2017

Lizzie Palmer, *New Statesman*, "Eton for all: will robot teachers mean everyone gets an elite education?" October 2, 2017

Michael Chui, James Manyika, and Mehdi Miremadi, *McKinsey Quarterly*, "Where machines could replace humans—and where they can't (yet)," July 2016

H. James Wilson, Paul R. Daugherty and Nicola Morini-Bianzino, *MIT Sloan Management Review*, "The job that AI will create," Summer 2017

Eugene Kim, *Business Insider*, "Amazon's $775m deal for robotics company Kiva is starting to look really smart," June 15, 2016

Sam Shead, *Business Insider*, "Amazon now has 45,000 robots in its warehouses," January 3, 2017

Madeline Gannon, *Dezeen*, "How do you avoid a robot apocalypse?" May 18, 2017

Marcus Fairs, *Dezeen*, "BMW working with psychologists to help robot cars befriend passengers," February 22, 2017

Jonathan Chew, *Fortune*, "Why millennials would take a $7,600 pay cut for a new job," April 8, 2016

Mark Rolston, *FastCoDesign*, "Designers; robots are coming for your jobs," January 3, 2016

Diana Budds, *FastCoDesign*, "IDEO's plan to stage an AI revolution," October 17, 2017

References 2018

In transparency we trust

Edelman, "Edelman Trust Barometer 2017," January 17, 2017

Autonomous.com, "Blockchain: Back-office Blockbuster,"

Bernard Marr, *Forbes*, "A complete beginner's guide to blockchain," January 24, 2017

Crypto Consulting, "Volume of investment in blockchain start-ups will reach $3bn this year," September 27, 2017,

Isabella McKinley Corbo, *Vice News*, "The tech that powers bitcoin could tackle corruption," November 9, 2017

PwC, "Blockchain – an opportunity for energy producers and consumers?," 2016

Mike Butcher, *TechCrunch*, "Jaguar Land Rover is backing DOVU to bring the blockchain to the mobile future," August 29, 2017

Jeff John Roberts, *Fortune*, "Microsoft and Accenture unveil global ID system for refugees," June 19, 2017

Nikhil Lodade, *The Wall Street Journal*, "Dubai aims to be a city built on blockchain," April 24, 2017

Gertude Chavez-Dreyfuss, *Reuters*, "Sweden tests blockchain technology for land registry," June 16, 2016

Hanna Chalmers, *IPSOS*, "When Trust Falls Down," June 29, 2017

Shiva Bhaskar, *Medium*, "How blockchain can improve politics," July 31, 2017

Stew Langille, *e27.com*, "Bitcoin, blockchain and why it makes sense for Southeast Asia," September 29, 2017

Accenture, "Accenture Debuts Hardware-Based Security Solution to Simplify and Enable Blockchain Security for Large-Scale Enterprise IT Use," February 8, 2017

Emily Tan, *Campaign*, "TMG launches global blockchain-based media agency," November 15, 2017

Alice.si

Hugh McIntyre, *Forbes*, "Spotify has acquired blockchain start-up Mediachain," April 27, 2017

The ethics economy

Sarah Kessler, *Quartz*, "Apple CEO Tim Cook explains why companies should get involved in politics," September 20, 2017

Lindsay Stein, *Advertising Age*, "United Airlines' passenger ejection may cause permanent brand damage, experts say," April 10, 2017

Nathan McAlone, *Business Insider*, "This former JP Morgan trader built a free app that sends custom financial signals to your smartphone," June 25, 2016

Micah Solomon, *Forbes*, "They're not making customers like they used to: changing customer service trends and expectations," December 21, 2016

Dana Hull, *Bloomberg*, "Tesla is sending battery packs to storm-ravaged Puerto Rico," September 28, 2017

Fast Company, "Read Mark Zuckerberg's 6,000-word manifesto on Facebook's growing role in social infrastructure," February 16, 2017

Rachel Hosie, *The Independent*, "John Lewis gets rid of 'boys' and 'girls' labels in children's clothing," September 2, 2017

John Reed, *Financial Times*, "Ikea to provide jobs for Syrian refugees in new Jordanian project," January 31, 2017

Alan C Sauber, *ethisphere.com*, "The role of metrics in ethics, compliance and culture", April 20, 2017

Design outside the lines

Sharon H Kim, Christopher G Myers and Lisa Allen, *Harvard Business Review*, "Healthcare providers can use design thinking to improve patient experiences," August 31, 2017

Future of Work, *Nobi*, "From innovation leader to laggard,"

Cheryl Beebe, *Fishman Corp.*, "Key components of design thinking in manufacturing,"

Hugo Moreno, *Forbes*, "Design thinking: one key to digital success is focusing on humans," August 16, 2017

Gil Press, *Forbes*, "'6 Predictions For The $203 Billion Big Data Analytics Market" January 20, 2017

Olof Schybergson and Shelley Evenson, *Huffington Post*, October 17, 2016

Chris Mears, *The UX Review*, "Monzo Bank – disrupting the banking industry," August 14, 2017

John McGarvey, *McGarvey.co.uk*, "According to Ciymapper design begins with words," July 20, 2014

Nathan Sinsabaugh, *WIRED*, "What Google's material design is really about,"

Karri Saarinen, *Airbnb*, "Building a visual language,"

Jamie Sebold, *Devbridge Group* "Sketch and Agile: how we improved the design workflow," August 17, 2015

Khoi Vinh, *Subtraction*, "An interview with Rochelle King, Global VP Design, Spotify," April 23, 2015

Elizabeth Stinson, *WIRED*, "John Maeda: If you want to survive in design you'd better learn to code," March 15, 2017

Heather Pemberton Levy, *Gartner*, "Gartner predicts a virtual world of exponential change," October 18, 2016

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