Experience, AI and the Digital Divide

An Experience Futures Perspective

experiencefutures.org
A new digital divide separates the tech-savvy users from those who struggle to navigate digital tools, can’t buy premium services, or don’t understand technical jargon. Our digital lives are made up of complex sets of apps, sites, and systems. Those who cannot effectively navigate this digital world are adversely affected in real-life ways. The solution is to create new approaches and tools to drive experience equity customized for the individual.

Mission
We build equity into digital experiences through tools and standards that lay the foundation for a more empowered future.

Vision
We’re creating a world where every single person has fair and equitable access to technology through personalized digital experiences that adapt to their individual needs. The path to this reality is being paved by new approaches to design and automation.
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Even before COVID-19, the digital relationship between organizations and their users had become too complex to manage. As the digitization of public and private life accelerates, individuals are overwhelmed by the range of apps, websites, and channels required across every organization they interact with. Forrester has documented that even by 2017, 95% of consumers use three or more self-service channels in a single customer service interaction.1

Yet, the incentive to increase the number of digital tools within an organization continues to grow—McKinsey Global Institute estimates that an additional $13 trillion could be added to global GDP by 2030 through digitization, automation, and artificial intelligence. While these new channels and technologies create major new business opportunities and productivity gains, a radical shift is required to simplify digital relationships with both public and private organizations.

While tools like websites and mobile apps attempt to give users self-directed access within a single organization, these tools offer little help in navigating the customer’s entire digital ecosystem that spans multiple organizations. Additionally, many large organizations maintain a range of sites and apps that are often very challenging to navigate even when just interacting with that single company or institution. Even as these tools seek to improve customer experiences through digitization, the reality is that they fragment digital experience as the users traverse various applications and websites from numerous organizations to complete their life tasks.2

To compete in a fragmented digital world, organizations must move away from creating tools that help customers navigate organization-specific tasks in departments or specific units, and invest in digital ecosystems that operate around the individual.

This brief explores the complexity of self-directed digital experiences (e.g., websites, social media, chatbots, smartphone applications, etc.) that organizations provide to their customers and what is required in the future to address this through machine learning, automation, and AI. Most individuals engage in digital ecosystems that exist across organizations and industries but are overwhelmed by the digital tools available to navigate tasks across organizations. Customer demand for self-directed digital ecosystems that reflect both personal and professional obligations across multiple networks, means organizations must evolve their approach and move toward highly personalized digital ecosystems that are uniquely tailored to individuals.

Most organizations realize innovation and digitization are key to improving customer experience. Gartner predicted that by 2019, 81% of marketers expect to compete “mostly or completely” on the basis of customer experience. The COVID-19 pandemic has demonstrated the need now more than ever to accelerate the evolution of digital experiences to help global organizations compete and address customer demands. Boston Consulting Group found that firms can realize 20- to 40-percentage-point improvements in customer advocacy, see cost reductions of between 15% and 25%, and revenue increases of 10% to 20% as a result of focusing on creating value around the customer’s real-life tasks. Many organizations know this and the transformation of traditional customer experiences—across marketing, sales, use of a product, and servicing—into self-directed digital experiences on websites, mobile apps, and social media are meant to make life easier for the customer. Yet, even as organizations intensify their efforts to digitize, these efforts come at a cost.

An individual may be confronted with dozens of applications and websites to navigate a single organization’s offerings and support. These tools create dozens of paths on a journey to buy or use a product, speak to the right customer service agent, review a recent transaction, or find out whether a new prescription is covered by their insurance plan. This complexity causes frustration, such as wasted time spent navigating digital tools to find the right place or answer within an organization. Worse, that frustration can lead to leaving the user’s intended task unfinished or incomplete.

Additionally, the average person doesn’t just rely on one organization for everything they do in life—everyday tasks like managing their finances or updating their insurance coverage cut across multiple sites and apps. We see this in large companies, government agencies, and even in education.

For example, New York University’s process for new students contains at least eight mandatory steps that must be completed before a student can arrive on campus. The student is responsible for navigating dozens of sites to accept the admissions offer, pay a tuition deposit, accept financial aid, register for direct deposit (for tuition reimbursement), activate a school ID with campus security, activate their school email with the IT department, set up health coverage at the student health center, secure housing, and register for classes. Each step represents a different department, site, or application that must be navigated to complete the required information, sometimes even requiring in-person visits or calls to the various departments. Beyond NYU, the student must also coordinate information from their bank to pay tuition or receive financial aid awards. Mandatory health policies require students to coordinate between their primary health care provider and the school’s student health center to share immunization records or information about pre-existing conditions and medical needs.

NYU in particular invests 3% of their annual budget to “deliver the digital experience that people expect today through AI, machine learning, and UX design.” While there are tools intended to simplify the experience for the students, there is little to no effort to standardize or automate collaboration between NYU, financial institutions, and healthcare organizations on behalf of the individual student. Of course, there are complex technical, privacy, and legal constraints that make this difficult to achieve, but it shows that even organizations investing heavily in simplifying digital experiences still have a long way to go to simplify self-directed digital experiences that cut across organizations based on the needs of individuals.

A common solution for this problem in many organizations is to bring together experts across a number of disciplines leveraging design thinking approaches to ensure that customer value (product management, marketing, design, etc.), feasibility (IT and technology, etc.) and value (business needs, finance, etc.) are all represented. These in-person workshops then ideally lead to small, dedicated cross-functional teams using agile methods to build the solution. While these practices are still under-developed in some
The state of digital experiences

organizations, they are vital to experience transformation. However, there is often not enough funding or staff experts required to pursue this approach for each dimension of the digital experience. In addition, the solutions that emerge from these sessions often require manually created designs or prototypes, which require even more human resources or external partner funding. Yet, despite resource constraints, most organizations see the imperative to improve their digital ecosystems based on customer needs. But this paradox—the need to accelerate and deeply personalize digital experiences versus the availability of funding or human expertise—will only become more difficult to navigate in the wake of COVID-19 where many organizations have to rethink their investment models across every aspect of their operations.

Leveraging automation, machine learning, and AI is the obvious solution to moving away from labor-intensive, expert-driven experience creation to rapidly accelerating the creation of new digital experiences that reduce complexity for users.

As we look to the future of self-directed digital experiences, a new opportunity emerges if many organizations move to digital experience automation. It is based on the idea that experiences can be wrapped around an individual, with organizations serving as supporting elements, instead of experiences being organized around an organization and requiring individuals to navigate daily tasks across organizations on a daily basis.

Industry leaders like IBM® and Google® have already begun to lay the foundation of this collaboration by releasing their design systems as open source platforms—ideally allowing many organizations to contribute to distributed ecosystems that look and feel the same. The next evolutionary step will involve developing open standards and technologies that can allow organizations from many industries to contribute to a single interface built around the customer and their real world needs, rather than forcing the customer to personally manage data and digital tools meant to capture them and build only a relationship with that organization. This idea of trapping users within an organization’s digital ecosystem is referred to as a “walled garden,” and is the explicit digital strategy for most corporations today. In fact, it is often seen as a competitive differentiator.

The strategy of the walled garden runs contrary to the imperative toward simplifying digital experiences for the user, especially as most tasks span organizations. Organizations that don’t simplify risk customer rebellion.

Apple’s notoriously successful walled garden approach has established Apple as a global experience leader, and their design approach has been emulated by many other companies; yet customers complain and rebel in ways that force their evolution. As revolutionary as the iPhone was at its launch in 2007, Apple’s original strategy was to only allow native mobile apps to be loaded in iOS that it had created. All other developers would be forced to create mobile web applications with greatly reduced functionality. This led to a wide range of developers “jailbreaking” the operating system (which allows customization and modifications to Apple devices that are traditionally restricted) to allow for custom mobile apps to be loaded on an iPhone. This community-driven rebellion led to Apple launching the App Store and providing a wide range of developer APIs. Arguably, this shift in strategy led by users rebelling against the walled garden is a key attribute of the iPhone’s massive success. Yet, Apple continues to maintain a walled garden strategy for experiences and core features that are blocked from developers.

While this allows Apple to ensure that the overall experience of an iPhone is consistent and secure, it heavily contributes to users needing to personally juggle hundreds of apps that often don’t communicate with each other. The trend of jailbreaking continues to this day and Apple continuously discounts the practice, citing the potential for security vulnerability, device instability, and service disruptions. In May 2020, hacking group unc0ver released a zero-day hack along with the release of iOS 13.5. The latest jailbreaking software covers previous versions of iOS and introduces a sandbox feature that hides unauthorized modifications from Apple, impacting up to 900 million active devices. The long standing cycle of iOS software updates with ensuing jailbreaking hacks and device hacking illustrates customers desires to build digital ecosystems beyond the boundaries of a single organization.

4. The COVID pandemic may drive more firms to turn to open source design to save money. And many designers will draw inspiration from these publicly available resources as easily as from colleagues since they’re working remotely. The benefits to recruiting will be less relevant in the short term as hiring slows. But designers fluent in open source design will stand out from their peers when the world economy regains momentum. See Contribute to Open Source Healthcare Projects for COVID and Open Access, Open Source, and the Battle to Defeat COVID-19.
5. MIT Sloan defines digital experiences complexity as processes that overwhelm customers by making them contact multiple people, enter data multiple times, log into different systems, or contact different call centers for different products from the same company. See Mocker, M (2014). Revisiting Complexity in the Digital Age. MIT Sloan Review.
6. This data is based on an empirical analysis of New York University’s 2020 Admitted Graduate Student webpage.
7. See New York University’s Department of Information Technology 2020 Mission.
8. IBM Design Language.
9. Material Design, Google’s open standard forum for design, was first released in 2014.
10. Apple Support (2018). “Unauthorized modification of iOS can cause security vulnerabilities, instability, shortened battery life, and other issues.”
Digital complexity and the fragmentation of customer experience
Digital customer experience provides an essential competitive differentiator and is tied to an increase in revenue, ROI, and retention. Yet, creation and management of the digital tools often revolve around the organization itself rather than the users they are meant to serve; departments in many corporations publish competing mobile applications, websites that look different across each division, and incompatible digital tools are created across different types of users. All of this is impeding people from completing tasks requiring digital interactions with multiple organizations, and this can be seen in every aspect of our lives—from basic business communications to healthcare to finances and education.

Across many organizations and industries, efforts to simplify for the end user do not go far enough. The healthcare industry, as an example, is making huge investments in this area but still maintains very complex digital ecosystems that customers need to navigate for simple tasks.

Aetna provides five different mobile applications to manage medical, dental, and vision health coverage. The main app, Aetna Health, houses information from 10 different websites on topics like health claims, care cost estimators, medications, benefits summaries, health savings accounts, and more. A separate app, Aetna Better Health, houses similar information across five different web pages for Medicaid users. Vision care exists in another distinct application with three different web pages for care. v-Health by Aetna offers yet another tool for managing virtual health visits and communication with two separate portals for video and audio communication. Holistic care and wellness recommendations are housed in yet another application, Attain by Aetna, with separate pages for sleep, nutrition, physical activity and traditional treatment alternative. And finally medical paperwork is housed in My Aetna Supplemental with three different options for users. Tools such as keyword search save customers time in navigating all the information that makes up their care, yet simply looking at the number of mobile applications and websites that a customer uses to navigate a task as “simple” as finding a new primary care physician can touch up to 32 different webpages and applications.13

The healthcare example above is evidence that this industry is notoriously slow to take on a holistic approach to digital transformation—and this story is the same across many other areas, both public and private. Thomas Laur, CEO of SAP Health, suggests that the barrier for most healthcare organizations lies in their “fragmented, piecemeal development of one-off applications” for particular aspects of the customer’s healthcare journey. He continues that, “while the application level seems very attractive because it delivers value quickly without a huge, rip-and-replace investment, it isn’t scalable.”14 Creating an application for every aspect of our lives is not sustainable. Adding to this problem, most organizations still have uncoordinated efforts to simplify internal experiences for administrators and practitioners, leaving the customer to blindly navigate complex internalities.15

For savvy users, navigation across organizations amounts to more than the typical frustration with digital experiences. However, for those without the technical acumen, language skills, or time to invest in understanding, there is a real risk of being left behind if they can’t complete their tasks at times urgent or time sensitive tasks. In the most severe cases it can mean the inability to find the right specialist, underusing health benefits and other negative outcomes. As the healthcare sector continues to use technology and digitization to improve quality of care, many without access to smartphones or reliable internet connections are unable to make use of new applications and chatbot features to assist in navigating their healthcare experience.16 As a result, digital tools compound further inequalities of race, age, socio-economic status, and gender, deepening gaps for marginalized groups. Some companies are attempting to address this. For example, ZappRx is a collaborative health information technology platform created to support customers through the process of procuring specialty medications by automating the relationship between the patient, the clinician, the insurer, and the pharmacy.17 The company optimizes a process requiring clinicians to process 50 pages of paperwork while asking customers to navigate through separate documents to find out whether their prescription can be covered by insurance. ZappRx raised more than $40 million from investors and was recently acquired by Allscripts in 2019.18 Yet even as ZappRx solves one problem for coordinating specialty prescriptions, it adds yet another digital tool for managing healthcare experiences.

This fragmentation becomes magnified as a customer’s life tasks exist across many organizations and industries. The lack of digital experience coordination across different organizations means no one organization is truly designing around the customer. Financial services firms have steadily introduced digital tools over the past 20 years to help ease the process of completing banking transactions. Technologies like ATMs, telebanking, and mobile banking applications seek to simplify customers’ digital experiences.19 Yet, for the typical individual, a personal financial ecosystem can span multiple organizations. Consumers may use Bank of America for their main checking and savings account, loans, and high-rate savings accounts may be housed by your local credit union. Credit cards can exist at any number of organizations (e.g., Chase-Amazon, Target Red Card, Amex, etc.). Corporate credit cards are likely held at a separate institution from your personal accounts. Even gift cards exist under separate entities with different websites. Wealth management takes place at a completely separate organization and application. Even at modest levels of income and wealth, at best consumers may have four separate financial applications; at worst they may engage with many more, each with their own unique digital accounts, apps, sites, and preference settings. Transfers and communication across these organizations are driven primarily by the customer, a perfect example of how the burden of digital complexity has been pushed to the individual.

12. Based on an empirical analysis of Aetna Health applications available in the iOS App Store.
Artificial intelligence is accelerating as an area of core information technology investment and will have a dramatic impact on the customer experience. Most organizations have invested in a huge range of technologies and platforms that are meant to make the customer’s life easier. For example, IBM’s conversational AI, the Watson Assistant, aims to improve digital experiences by providing real-time scalable customer service and self-service options. Organizations who used the Watson Assistant actualize a cost savings of $5.50 per contained conversation and $7.75 per correctly routed call, saving in total $19.7 million over three years.19

There are also many precedents showing the need to collaborate across organizations to simplify digital experience complexity, such as supply chain automation. A basic supply chain involves a network of providers, manufacturers, wholesalers, and dealers/retailers. Historically, supply chains suffered from complexity, a lack of formal relationships, limited information sharing, and lack of standard data representations. Collaborations beyond one organization in the chain were constrained. Early technology solutions came in the form of one-off tools that were only available within a single company in the process but not scalable across the entire network. Organizations at each stage created their own technologies to improve their process yet the lack of standardized data made automated information sharing impossible. The lack of collaboration around the end goal of the supply chain created uncertainty in thousands of companies, with many organizations either making massive investments to own their own supply chain end-to-end or managing a complex web of alternate sources.

Supply chain automation evolved to allow a wide range of companies to employ technology to centralize and optimize complex processes and, in effect, reduce manual effort between providers, distributors, and sellers. This automation can take many forms including data interchange, routing, administrative paperwork, packing and picking, and even customer returns.20 Automation allows supply chain management to consider end-to-end processes rather than by each isolated function.

McKinsey estimates that supply chain automation continues to automate inefficient processes through the use of blockchain technology to reduce documentation errors in supply automation. Leveraging the blockchain is an evolutionary step in putting data in the hands of users by publishing transactions in a public ledger that is based on open standards. During a 12 month trial period, this new technology helped reduce the transit time of a shipment by 40 percent, avoiding thousands of dollars in cost. Answering a question like “where is my container” is reduced from 10 steps and five people intervening, to one step and one person with automated blockchain technology.21

The solution to the current complexity with digital ecosystems must come from automating the experience of users across organizations in the same way as the supply chain was simplified through automation. Automation of self-directed digital experiences will ultimately include computer-driven generation of design, front-end development, and data to drive personalization of digital experience—not only within but across organizations. As a short-term step within organizations, automation can simplify and personalize disparate experiences across business units, functions, and departments. The recent trend to leverage AI driven chatbots is one small example of this pivot. Business Insider Intelligence predicts that the global annual cost savings derived from chatbot automation across the insurance industry alone will surge from $0.5 billion in 2020 to $5.8 billion in 2025. Lemonade’s policy chatbot, Maya, acts as the front-end experience to the entire company and can onboard customers in as little as 90 seconds, compared to the approximately 10 minutes it would take with traditional insurers online. Additionally, Lemonade’s claims chatbot, Jim, can settle claims within seconds, while incumbents could take anywhere between 48 hours and more than a year to settle home insurance claims.22 While these examples are driven not only by chatbots as the UI but also include the backend systems and business processes, they provide evidence that customers are choosing solutions where the company prioritizes simplicity custom tailored to the individual. For this to work across organizations, a wide range of design and data standards need to be created and adopted.

In a 2020 report of Digital CX Design, Forrester describes the many benefits of developing open-standards around CX design.23 Organizations who collaborate stand to shine a spotlight on their design practice (which helps attract talent), get feedback (which helps improve the system), and give others a foundation for developing their own system (which extends the sharing company’s influence).24

Google did so in 2014 with Google Material Design, a design system based on open-source code, as a single underlying design system that unifies the user experience across platforms, devices, and input methods.25

Of course, this is intended also to expand Google’s developer ecosystem, which is a core of their business model. These small steps require widespread adoption to shift the experience across entire industries and sectors, but they demonstrate a journey to a world in which organizations design their products to meet customers where they are rather than designing product and marketing journeys that lead customers down narrowly defined paths.
The automated future of customer experience

The future of digital experiences must involve far deeper collaboration across organizations in order to design experiences around users, not just deliver digital tools within walled gardens. Even as digitization and automation evolve the customer journey within an organization, users are still expected to manage their own collection of tools and understand how they work together. As automation becomes more prevalent, we can begin to truly design around customers and simplify experience across multiple organizations for tasks users are trying to accomplish.
The implications for the user of an experience that spans across organizations, is that there will be a small number of technologies that sit in between the human and the collection of organizations required for any task. A user managing their finances on a mobile device will have a single UI versus many. A student will have a single digital interface across all of the academic and administrative elements of their education experience. A patient will have one single tool to manage all communications, prescriptions, benefits, and billing for healthcare issues. For some users, this would be highly graphic and for others it would present more data. This personalized AI layer will understand the user’s ability to absorb information and adapt accordingly. For some users, voice or chat interfaces may be the preferred way to navigate – for others it may look more like a traditional application UI. The point is that in the future, the collection of organizations contributing to a task will be adapted and designed around the individual.

This vision of the future requires massive leaps in natural language processing, design standards, data infrastructure and personal computing platforms. This future also poses new and enormous challenges in areas where bias and ethical concerns can impact individuals in significant ways. New technology standards will need to be defined to enable organizations to simplify experience across a customer journey rather than within an organization’s walled garden.

Data sharing and privacy standards will need to be created to allow for experience automation across organizations. Investment for automation tools focused on the experience layer will need to be defined and funded. Ethical and bias related issues will become more pronounced and urgent as users decide to allow an AI to control and filter the information they need to navigate their digital life. This is a critical consideration to ensure that marginalized users are not further disenfranchised by standards or technologies that underpin this approach. In addition to technology, design and ethical issues, many expert skills/roles will need to be transformed or re-trained. Regulatory barriers and considerations will also need to be taken into account by government organizations to ensure consumer/citizen protection.

27. Here we use the term “collaboration” loosely, as it is often the case that open standards are employed to create a more vibrant and thriving competitive landscape.

A stepwise model for self-directed digital experience

As we begin to look ahead to how organizations will take on the next generation of digital experience through automation and AI, a maturity model emerges that can help business leaders, technologists, and designers conceptualize their path forward. This model examines the progression for both individual users and for organizations. Taking steps toward reorienting digital experiences around users where individuals control AI that govern how organizations interact with them may seem like science fiction. However, in the coming years, organizations that double down on proprietary standards for digital ecosystems will find themselves chasing an ever-dwindling marketplace as customers rebel in the same way they reject being marketed to online.

Our maturity model is based on consumer adoption trends and the efforts happening today in multiple organizations with four distinct steps—Baseline, Beginner, Intermediate, Advanced—each with observable characteristics.
Maturity phases as experienced by the individual:

At the beginner phase, individual customers experience a high degree of complexity for most digital tasks. Barriers (i.e., walled gardens) between organizations, force the customer to navigate, manage, and drive integration across organizations. Tools like Google’s password storage or Apple’s Keychain attempt to solve complexity yet are only addressing specific elements of the customer experience (password management in this case). At this phase, the organizations within an individual customer’s self-directed digital ecosystem have no connection and the user is responsible for making their experience across digital tools work together. Every organization that the individual interacts with has a widely different set of sites, channels, apps, and tools and requires the users to navigate separately to understand how data is managed or related.

In the intermediate phase, users continue to encounter digital experience complexity across multiple organizations, they become aware that the lack of interoperability amounts to wasted effort and frustration. This leads to customers migrating toward companies that specialize in simplifying self-directed digital experiences (e.g., Mint for managing budgets, Lemonade for shopping for and managing insurance policies, Amex for leveraging its points across multiple organizations, etc.). Aggregated user data begins to be distributed across a wider range of organizations across a digital ecosystem, leaving users concerned about who has access to their information and what profiles are being built. While digital tools and ecosystems work together better, each one is trying to contain the user within their walled garden.

In the advanced phase, users have a high degree of control and AI tools at their disposal to consolidate their digital ecosystem based on the individual’s preferences and aggregated data. Individuals become less and less aware of the brands or individual companies that are component parts of their overall experience. In tasks like managing finances, users may not be entirely clear which organizations are involved but clearly understand what is happening on their behalf while interacting with a single AI tool that acts on their behalf.

Maturity phases within organizations:

In the intermediate phase, organizations begin to leverage front-end automation as a differentiator for how users’ needs are met, but this is limited to select features and still within a walled garden experience. A higher degree of organizational management with cross-functional teams allows for initiatives to be orchestrated around the customer rather than happen in silos. Design systems are integrated into technology platforms so any new deployment renders the right design across all applications for all users. While a great degree of user data is collected by the organization, it is still considered proprietary and not shared across the user’s ecosystem to help them better solve tasks that span multiple organizations. There is no data sharing across organizations at the experience layer. The desire to compete on the basis of customer experience outweighs the user’s desire for self-directed digital ecosystems that take into account the user’s needs first. Even as organizations at this level remain competitive among their industry peers, they fail to consider ethical and bias-conscious considerations around systems that aren’t flexible around user needs.

In the advanced phase, organizations have oriented their digital tools around the individual journey and the aim to create walled gardens is replaced by integration into AI tools controlled by users. Organizations’ experience automation is guided by open standards that simplify end-to-end user experiences, customized based on user preferences and data. Artificial intelligence manages all digital experiences; there is little to no management or experience creation by humans. Tools like Adobe Sensei and IBM’s Watson become commonplace in orchestrating self-directed digital experiences for the user across organizations. Data sharing is normalized across organizations along the user’s journey through technologies like blockchain that protect proprietary information while allowing pertinent data (such as experience preferences, etc.) to follow the user as they go from enterprise to enterprise to complete their life tasks.
Envisioning this future means a radical shift in a number of areas that haven’t been realized yet. AI tools need to be accessible and configurable to non-technical experience managers. Data that helps drive a user’s management and consumption of information needs to be shared in a safe and reliable way across organizations through technologies like blockchain or other distributed ledgers. Brands and marketing organizations must reorient themselves to have clear value to the customer even if they don’t understand what services are being provided. Design functions must be able to create products and a wide variation of assets that allow for each user’s experience to be configurable by the AI layer that the user, not the organization, controls.
In addition to the change in how organizations engage with users, the self-directed digital experience of the future requires data management and processing that take on a more secure posture. Users must first opt in to have key elements of their data (experience and otherwise) managed across organizations, forming a secure and trusted ledger of their activity. Tools like Brave Browser are now beginning to help users process data on their devices instead of in the Cloud to enhance privacy. This shift around empowering users with their own data will rapidly accelerate as tools become more powerful. These advancements would allow for experience data to be shared across journeys or across organizations without complex financial or legal agreements. In effect, as data privacy and sharing becomes more advanced, the conditions will be set for digital experience to be personalized without hassling the user about it. To achieve this, users must have more control over the way their data is stored or processed and the ability to see how decisions are being made on their behalf and adjust as desired.

Data and AI ethics will also need to have a formal role in organizations that heavily rely on automation. This will lead to new practices and standards that will be adopted broadly across organizations rather than having each organization defining its own ethical standards. This is important as it will provide transparency to the individual about how organizations maintain their ethical standards. Consider early e-commerce: the public looked to Verisign to tell us if a site was actually safe to do commerce with from a data security standpoint. Independent auditors could help users trust if ethics are being prioritized even if the users can’t understand the mechanics behind them.

Industry and technology organizations will need to respond to public policy or follow local, state, and federal guidelines about ethics and AI protection. Consumers in places like California are already electing representatives that are passing data protection laws. The same will need to exist for AI-driven ethics and bias protection in experience design.

For organizations looking to plan for this model or capitalize on the opportunities it represents, there are several areas for possible investment:

• Creating teams that are optimized to remove organizational and discipline barriers for experience simplification (e.g., full stack designers, pairing developers with designers, end-to-end customer data normalization).
• Investing in technology infrastructure and digital product management approaches that emphasize variation of experience and personalization over human capital intensive approaches.
• Creation of new platforms, products, or services that automate elements of the experience creation process (e.g., tools to generate UX flows, generation of design systems, automation for UX / UI creation).
• AI platforms that drive personalization across all channels, design, and content with an organization.
• Data sharing standards or platforms that allow for a user experience to be personalized and simplified across multiple organizations.
• What happens to the role of brand and marketing when the digital experience of your organization is filtered through an AI that individuals control?

• What models can we use from other industries or processes that can be employed for cross organizational collaboration around the user?

• What technologies are in play that will contribute to this future state?

• What tools are emerging that would allow users to manage their digital ecosystem through AI tools?

• What technologies don’t yet exist that need to be created?

• What are the ethics considerations for allowing AI and automation to simplify the end users data and/or process it for them?

• What policies or laws need to be enacted to help protect users?

• What software tools should be open sourced to help accelerate the adoption of AI driven experience ecosystems?

• What governance or standards should be defined by cross-functional experts?

• What design systems, patterns, or standards can help organizations accelerate experience automation?

• What industries or use cases (i.e., jobs to be done) could most benefit from this approach?