



John Maeda

# Design in Tech Report 2018

<https://designintechreport.wordpress.com>

# Team

## Founding Team

Jackie Xu

Aviv Gilboa

Fatimah Kabba

Justin Sayarath

John Maeda

## Report Contributors

Bon Ku  
Medicine

Ling Fan  
China

Sunil Malhotra  
India

Luis Arnal  
Latin America

## Report Translators

Takram  
Japanese

*PDF version has all images disabled. Visit <https://johnmaeda.github.io> for the full experience.*

# Welcome

Welcome to a new format for the Design in Tech Report. For this year's report, I took a stab at learning all the CSS/JS that I've always wanted to know, and then went after the task of making a fully responsive report. I've partially succeeded on my road there with this letterbox-only version — which is better than a PDF. And fortunately thanks to Takram's Shota Matsuda it is greatly improved.

If you see [Refresh Screen If Needed](#) please refresh your window and a dynamic diagram is likely to reappear. Chrome seems to work best with this report. If you don't like an interactive version like this, please visit the one<sup>\*\*</sup> on Slideshare.

Expect a video version on my new YouTube channel “John Maeda is Learning” some day that walks you through all these findings.

—@johnmaeda

# Sections Overview

## 1) TBD = Tech × Business × Design

How do technology, business, and design interrelate in the startup and corporate ecosystems?

## 2) Scaling Design

How do you scale the design function in a company to impact business at the speed of Moore's Law?

## 3) Computational Design: 1st Steps

What is “computational design” and why does it matter to business + tech?

## 4) Computational Design × A.I.

How does artificial intelligence change the future of design and what do designers need to know?

## 5) Inequality

What does technology have to do with rising inequalities and should I care as a designer?

## 6) Why Inclusive Design

Do I need to care about inclusive design more when considering TBD? What can I do about it?

# Key takeaways from the Design In Tech Reports

## 2015


14 creative firms were atypically acquired between 2004 and 2015 by tech companies like Facebook, Flextronics, Google; also Accenture, Capital One, BBVA, McKinsey & Co.

As the marginal return on computing power (a la Moore's law) diminishes and technology is less of a differentiating factor, the value of design has entered the foreground.

27 startups that were co-founded by designers were acquired since 2010 by companies like Intuit, Google, Facebook, Adobe, LinkedIn, and Yahoo.

Five (20%) of the top cumulative-funded VC-backed ventures that have raised additional capital since 2013 are noted to have designer co-founders.

There were no designers on Silicon Valley's fabled "Sand Hill Road" until January of 2014 when Kleiner Perkins appointed their first Design Partner **John Maeda**. Shortly afterwards six more VC firms acquired new Design Partners.

 **DESIGN DESIGN** Designing for mobile brought new experience constraints compared with the desktop, and made designers' skills invaluable as the pathway to non-techy consumers.

## 2016

Design firm acquisitions continue: 42 design firms since 2004, and ~50% of them in the last year alone. Accenture, Deloitte, IBM take the lead.

Designers in venture capital have increased: More designers entered VC in the last two years than the previous 4 years combined. Its history is revealed.

93.5% of 370 designers surveyed believe that coding and data-oriented skills are table stakes knowledge for designers in tech.

100% of the top 10 business schools have student-led design/innovation clubs. 6-7% of the 2015 class of HBS take product management jobs.

Designing Systems and Designer Culture emerge as key methods for design to achieve scale — building on agency practices and Karl Gerstner's pioneering work on Designing Programmes.

Instead of seeing diversity as a problem that needs solving, designing for inclusion becomes an economic opportunity and cultural responsibility.

 **The 3 Kinds of Design** There are 3 kinds of design: Classical Design, Design Thinking, and Computational Design. The most business value is being driven by the latter two kinds of design.

## 2017

Demand for designers is up with Facebook, Google, and Amazon collectively growing designer headcount by 65% in a year according to LinkedIn.


McKinsey & Co and Salesforce make significant bets on design with more acquisitions. Design tool startup InVision acquires 5 smaller startups.

Design tools begin to evolve out of print and early web design paradigms from the Photoshop era to encompass prototyping, project management, version control, inline coding, and automation.

Voice- and chat-based interfaces are grounded in mental models that don't require a visual representation. Related and unrelated artificial intelligence advancements are accelerating.

Coverage of tech design trends in China begins. Chinese design in tech principles and practices are leading the world, and are often overlooked.

90% of designers surveyed say that having a more diverse design team is personally important to them. The number one request inside their companies is to: "Talk about it more internally."

 **Inclusive Design Takes Off** Adopting an inclusive design approach expands a tech product's total addressable market. The tipping point for inclusive design begins to tip.

# Design in Tech Reports simplified

2015

Design isn't just about beauty; it's about market relevance and meaningful results.

*DESIGN is about DE\$IGN — and it's traditionally been that case since the era of the Bauhaus, and even way before.*

2016

There are 3 kinds of design: Classical Design, Design Thinking, and Computational Design.

*There are 3 kinds of design: Classical Design, Design Thinking, and Computational Design.*

2017

Adopting an inclusive design approach expands a tech product's total addressable market.

*Inclusion is good business. And new proof points are emerging. More will start to emerge as inclusive design takes hold.*

# About the 2017 #DesignInTech Report

Design in Tech Report 2017

## Quick info about the 2017 Report

- On Slideshare there were 800K+ views.
- With new video and audio versions there were 30K+ accesses.
- *Writing and its critical importance to design* — an insight by **Fatimah Kabba** — was by far the most popular perspective in last year's report.
- SEO for the new home **designintechreport.wordpress.com** has stuck solidly. Thanks for your help and for your encouragement to continue!



# Useful feedback on the 2017 #DesignInTech Report

## Positive Sentiments Shared

- “I’ve been calling myself a designer-developer—now changed, thanks 2017 #DesignInTech report.”
- “I’m putting your oral #designintech preso on @SoundCloud on repeat.”
- “Congrats @simplysecureorg for the #designintech shoutout. Great work in privacy & security.”
- “Designers Who Code & Write: opportune time to digest the #DesignInTech report.”
- “#DesignInTech ‘reframes computational design as driver of accelerated growth.’”
- “‘Design isn’t just about beauty; it’s about relevance and meaningful results.’”

## Constructive Criticism Shared

- “Adding useless adjectives in front of the word ‘designer’ isn’t doing anything positive for the industry.”
- “Using small gray text in the DesignInTech Report excludes anyone with visual difficulties.”
- “Appalled in 2017 to see platitude of ‘Design is not about beauty.’”
- “When computational design dominates, will we have a Universal Design Income?”

TBD

=

Tech ×

Business ×

Design

### Design in tech is evolving rapidly and globally

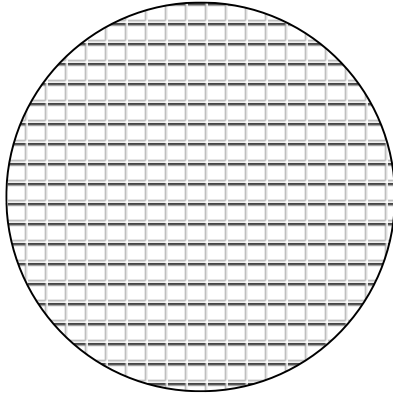
- Design isn't just about beauty; it's about market relevance and meaningful results.
- There are three kinds of design. Classical Design, Design Thinking, and Computational Design.
- In 2017 there were 21 acquisitions of creative agencies or designer-founded startups.
- Medical schools in the US are using design thinking in their curricula.
- Consulting companies are going beyond just design thinking — they're changing how business is done.
- China continues to lead in designing experiences at a scale and level of sophistication that astounds.
- Indian and Latin markets are advancing design thinking and computational design. And we have a lot to learn from them.
- **Gen B(older)** is becoming a market opportunity for new products and services that can't be ignored.

# There Are Three Kinds of Design

01

There's a right way to make what is perfect, crafted, and complete.

## Classical Design

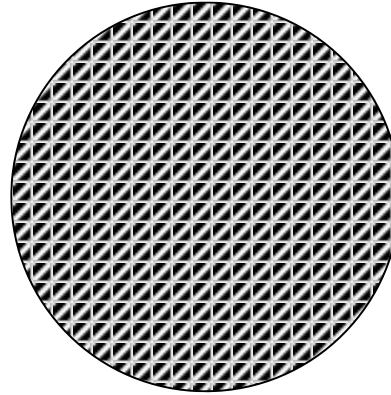


Driver/ the Industrial Revolution, and prior to that at least a few millennia of ferment.

02

Because execution has outpaced innovation, and experience matters.

## Design Thinking

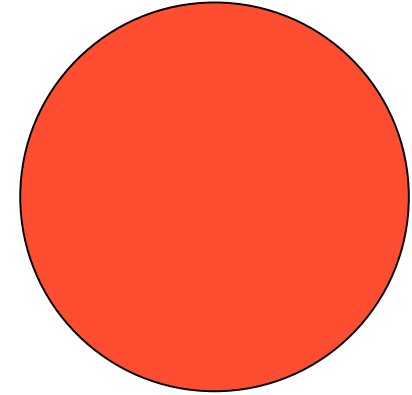


Driver/ the need to innovate in relation to individual customer needs requires empathy.

03

Design for billions of individual people and in real time, is at scale and TBD.

## Computational Design



Driver/ the impact of Moore's Law, mobile computing, and the latest tech paradigms.

# What's a Computational Designer?

via Nike

At NIKE Digital, we embrace open source, contributing to the community by building – and sharing – digital solutions that work on a global scale. We invest in cutting-edge technologies and work with a network of open source libraries and tools, like React.js, Node.js and GraphQL. These investments and tools help us advance web and native UI development, evolve our data science and eCommerce capabilities, refine our DevOps and retool our services infrastructure.

—2017 Nike job board [archived listing](#)

## Understands Computation

Has facility with representational codes and maybe programming codes. Knows what is easy and possible, hard and possible, difficult and impossible for now.

## Uses All Three Kinds of Designs

Taps into the rich history of classical design (form *and* content) while leading and teaming inclusively *via design thinking* within their org, or across orgs, for profit or not-for-profit.

## Thinks Critically About Technology

Practices being a humanist technologist who asks questions about what's being made, who's making it, and why.

## Actively Learning AI And The New

Considers intersectionality as a source of creativity and a driver of change. Embraces new paradigms and learns them deeply. Lives Apollinaire's words from the Bauhaus era, “**New (hu)man must have the courage to be new.**”

# Does computational design play a material role in a company?

As reported in Leah Buley's widely reviewed 2016 State of UX essay:

When asked, “What measurable outcomes resulting from user experience are you most proud of?” high-impact respondents gave responses like: “Multimillion dollar increases in conversion and customer lifetime value.”

By contrast, one low-impact respondent answered, “We are moving so fast there has been no time or resources for testing/outcomes – even for small usability improvements.”

# Computational Designer vs Classical Designer

When people in the tech industry talk about “design,” they often make the mistake of not differentiating between classical designers and computational designers. The former kind of designer might craft a wooden chair for a home which is used by a few people; the latter kind of designer might craft an app for a smartphone which is used by hundreds of millions of people.

	Classical Design	Computational Design
Number of Active Users	Few to Millions	Few to Billions
Time Needed to Deploy Completed Product	Weeks to Months through Distribution Channels	Instantaneously Delivered Over the Net
“Perfection” is Achievable	Yes There’s a final state.	No It’s always evolving.
Designer’s Level of Confidence	Absolute, and Self-Validating	Generally High, but Open to Analyzing, Testing, Research
Production Materials	Paper, Wood, Metal, and Anything Physical	Data, Models, Algorithms, and Anything Virtual
Skills With Tools Are Generally Grounded In	Hands and Laws of Physics	Mind and Computer + Social Sciences

# What's a Design Thinker?

## The Evolution of Design in the Enterprise

BIRTH OF TRADITIONAL DESIGN FOR LARGE CORPORATIONS / CORPORATE IDENTITY+IMAGE AND PRODUCT STYLING

**1950s** GM's CEO makes the first executive position in design with Harley Earl elevated to VP.

**1966** IBM Memo to IBM employees by CEO TJ Watson Jr. about the emerging importance of design to the company.

BIRTH OF MODERN PRODUCT DESIGN FIRMS / FROM TRADITIONAL DESIGN, TO DESIGN OF SYSTEMS+SERVICES

**1982** From 1982 Apple's design language begins to form with frog and Hartmut Esslinger's direction.

**1991** David Kelley, Bill Moggridge, Mike Nutall join forces and change the course of design by co-founding IDEO.

BIRTH OF "DESIGN THINKING" AND DESIGN STRATEGY / HARNESSING THE CREATIVE PROBLEM SOLVING SKILLS OF DESIGNERS

**2005** Hasso Plattner Institute of Design at Stanford starts.

IDEO's Jane Fulton Suri publishes Thoughtless Acts? and brings design research to the foreground.

**2008-09** Roger L. Martin describes design thinking at the CEO level with P&G's AG Laffley and his book on The Design of Business. (SAP and P&G were a few of the early executive adopters of Design Thinking.)

"DESIGN THINKING" MAINSTREAMS AS WHOLE BUSINESS STRATEGY / RE-CONTEXTUALIZING DESIGN, MAKING B-SCHOOLS INTO D-SCHOOLS

**2015-16** Phil Gilbert leads IBM's \$100M bet to bring design back to IBM.

Tim Brown and Roger L. Martin open the introductory issue for HBR on "The Evolution of Design Thinking."

Top 10 B-schools all have student-led design clubs.

**2018** IBM Design open sources their Enterprise Design Thinking framework for all.

# The large consulting firms are the major M&A driver

21 new acquisitions of creative agencies or designer-founded startups noted in 2017.

2017 JAN - FEB	MARCH	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	DECEMBER
<b>Idean</b> acquired by Capgemini <b>Unity&amp;Variety</b> acquired by Salesforce <b>Sequence</b> acquired by Salesforce <b>Dribbble</b> acquired by Tiny <b>DeviantArt</b> acquired by Wix <b>Altitude</b> acquired by Accenture	<b>JWalk</b> acquired by Shiseido	<b>The Monkeys and Maud</b> acquired by Accenture	<b>Market Gravity</b> acquired by Deloitte <b>Intrepid</b> acquired by Accenture	<b>Maya</b> acquired by BCG <b>Clearhead</b> acquired by Accenture	<b>Wire Stone</b> acquired by Accenture <b>Acne</b> acquired by Deloitte	<b>Matter</b> acquired by Accenture <b>VLT Labs</b> acquired by McKinsey & Co <b>TandemSeven</b> acquired by Genpact.	<b>Cooper</b> acquired by Designit/Wipro <b>Telepathy</b> acquired by ServiceNow (CEO: John Donahoe) <b>Brand.ai</b> acquired by InVision <b>YARD</b> acquired by Kyu Collective.	<b>Rothco</b> acquired by Accenture

2018

We're excited to join Verizon in their quest to put customers in control of their connectivity and create breakthrough live and digital experiences.

—**Moment** acquired by Verizon March 2018

# Classical Designers Tend to Look Down on Design Thinking

The reduction of a complex creative problem-solving mindset into five steps makes design seem easy when it's not. A certificate for the completion of a design thinking course is not enough to transform a business into the next Apple. So don't be deceived by the demystification of the design process or the chance to workshop out million-dollar ideas over post-its. There's more to design than what design thinking dealers are preaching.

—Natasha Jen on “Why Design Thinking is bullshit”

# Medical schools are using design thinking



This list does not include universities where medical students took design thinking classes in schools outside of the medical school. It also does not include health care professional schools. Example: Stanford medical students who might take design thinking classes at the d.school or Penn medical students taking design classes in the architecture school.

Also, this is not an inventory of academic medical centers or hospitals that have a design group or team. Many of these teams employ human centered design but do not necessarily teach medical students.

Medical schools in the US that offer a formal program or classes that teach design thinking to medical students

1. Dell Medical School at The University of Texas at Austin
2. Kaiser Permanente School of Medicine (not yet opened)
3. Mayo Clinic School of Medicine
4. The College of Osteopathic Medicine at Oklahoma State University
5. The Sidney Kimmel Medical College at Thomas Jefferson University
6. The Warren Alpert Medical School of Brown University
7. University of Michigan Medical School
8. University of Virginia School of Medicine
9. Zucker School of Medicine at Hofstra/Northwell

Bon Ku, MD, MPP /

In my experience, Design Thinking provides a platform for non-designers (myself included) - doctors, nurses and medical students - to work with designers. DT is a primer that provides us a shared language. Many of us who are in health care have already been practicing elements of DT (empathizing, prototyping, testing, etc.) but we just didn't know what to call it.

I do not believe that DT is a step by step recipe. We teach our medical students to develop a design mindset and build their creative muscles. Design thinking helps us to reimagine a better future state of health care and give us some more tools in how to get there.

# Consulting companies are going beyond just design thinking

This complex discipline does itself a disservice to just call itself “design,” which signals only surface-level solutions. Perhaps we’ll start to see new ways of describing these multifaceted and interconnected capabilities. —Hugo Sarrazin

01

## Journey Design

Infusing traditional customer (or employee) experience work with design thinking to help create spaces and experiences that drive consumer (or employee) satisfaction, operational efficiency, and revenue growth.

02

## Advanced Analytics

The convergence of Advanced Analytics (including AI) and Design is driving the confluence of insights (both quantitative and qualitative) informing the discovery and design of a solution – where data and creativity work together, not against one-another.

03

## New Design Paradigm

For design to inform new growth opportunities for clients, the need to quantify the value it can achieve by having great DNA as a company becomes critical.

04

## Designer Hybrids

As designers are now working on problems relevant to the c-suite they need to build core analytical skills that allow them to equate their design beliefs into quantifiable impact that can deliver business value have been identified.

Which companies are being perceived as improving in design?

In the 1200+ survey responses, these companies appeared to be improving in design: Google, Microsoft, Atlassian, Airbnb, Dropbox, Amazon

5 dominant words to explain why a company is perceived to be improving in design

Innovation

Consistency

Scale

Simplicity

Diversity

# The perception of design and its impact to business is cyclic

Design for Action  
HBR, September  
2015 Tim Brown  
and Roger L.  
Martin

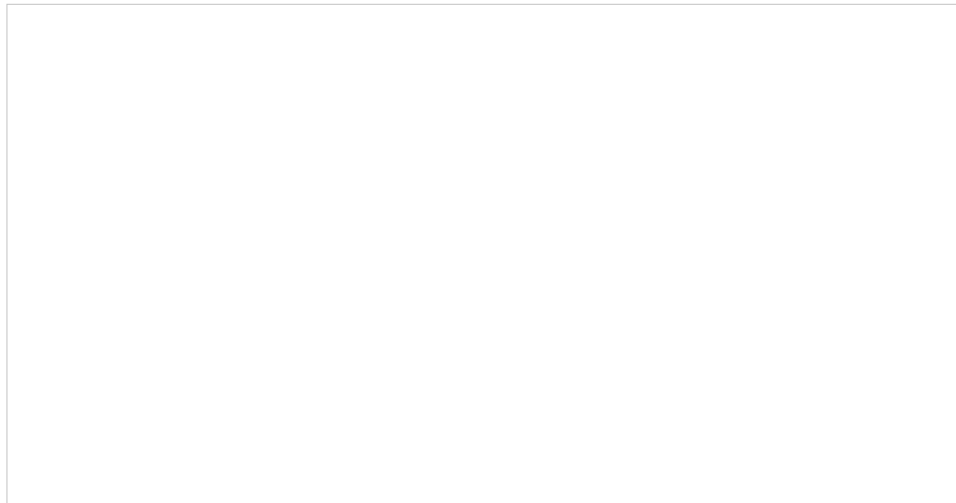
The Empathy Economy BusinessWeek,  
March 2005 / Bruce Nussbaum  
some info

The Beauty of Simplicity Fast Company  
2005 / Linda Tischler some info

Design Thinking Is A Failed Experiment.  
So What's Next? BusinessWeek 2011 /  
Bruce Nussbaum

John Maeda distinguishes between three categories: “classical” designers, who create physical objects or products for a specific group of people (think architects as well as industrial, furniture and graphic designers); “commercial” designers who innovate by seeking deep insights into how customers interact with products and services (think teams of researchers huddled around whiteboards and mosaics of brightly colored Post-it notes); and “computational” designers, who use programming skills and data to satisfy millions or even billions of users instantaneously (think tech firms like Amazon and Facebook).

—Clay Chandler TIME



The Meaning of Design Is up for Debate.  
And That's a Good Thing  
TIME, March 12, 2018 / Clay Chandler

# Classical Designers are slowly beginning to evolve

## The top 10 most critical issues and challenges currently facing design

1. (Classical) Design not having a “seat at the table”
2. Diversity in design and tech
3. Ethics in design
4. Education cost and equity of access
5. Consumer vs. social impact focus
6. Generational differences in the workforce
7. Environmental impacts of design
8. Algorithm bias
9. Advertising supported content model
10. Dark UX patterns

Highlight corresponds to computational design.

## The top 10 emerging trends to have the biggest impact on design

1. AI and machine learning
2. Augmented Reality
3. Virtual Reality
4. Behavior tracking and modeling
5. 3D printing
6. Distributed teams and virtual workplace
7. Democratization of design
8. Algorithmic design
9. Crowdsourcing and open source
10. Facial and voice recognition

# People Moves and Milestones

Happenings in the #DesignInTech space to highlight.

2016	<b>MARCH Andrew Crow</b> joins Strava as VP of Design.	<b>MAY</b> Google Ventures Design Partners publish NYT bestseller book <i>"SPRINT."</i>  <b>August de los Reyes</b> joins Pinterest as Head of Design.	<b>JULY</b> Khosla Design Partner <b>Irene Au</b> publishes <i>"Design in Venture Capital."</i>	<b>AUGUST</b> Former Kleiner Perkins Design Partner <b>John Maeda</b> goes in-house to become Head of Design at Automattic.	<b>SEPTEMBER</b> Design leader <b>Kristy Tillman</b> goes West to join Slack.  Design leader <b>Leah Buley</b> publishes her State of UX in 2016 Study.	<b>OCTOBER Catherine Courage</b> joins Google as VP of Ads and Commerce UX	2017
<b>FEB Bobby Ghoshal</b> and <b>Jason Erondy</b> launch <u>High Resolution</u> podcast for designers in tech with a <b>Katie Dill</b> feature.	<b>APR</b> Former GV Design Partner <b>Braden Kowitz</b> co-founds Range Labs	<b>JUN</b> Combine VC raises 1st fund of 12M (Founders: <b>Adam Michela</b> and <b>Soleio Cuervo</b> ).	<b>JUL</b> Former Accel Design partner <b>Jason Mayden</b> unveils Super Heroic as co-founder/CEO.	<b>JUL</b> Initialized Capital raises 3rd fund of \$125M (MP: <b>Garry Tan</b> ).	<b>AUG Kate Aronowitz</b> joins Google Ventures (GV) as Design Partner.	<b>SEP Randy Hunt</b> joins Artsy as Head of Design.	<b>OCT Katie Dill</b> leaves Airbnb to join Lyft as VP of Design.  <b>Michael Gough</b> leaves Microsoft to join Uber as VP of Design.
<b>NOV Kat Holmes</b> joins the Automattic Board of Advisors.  Intuit names its first Chief Product and Design Officer, <b>Diego Rodriguez</b> .	<b>DEC</b> Design tool startup InVision announces the \$5M Design Forward Fund.	<b>DEC</b> New Enterprise Associates (NEA) Design Partner <b>Albert Lee</b> with General Partner <b>Dayna Grayson</b> publishes the 2017 Future of Design in Start-ups survey results.	2018	<b>2018 JAN Vanessa Cho</b> joins GV as Design Partner.  <i>Google Ventures emerges as the clear leader in venture capital and design as a sustainable team.</i>	<b>FEB</b> Former GV Design Partner <b>Daniel Burka</b> joins Resolve To Save Lives as Design Director.	<b>FEB</b> IBM Design led by <b>Phil Gilbert</b> enables IBM Cloud to win two iF Design Awards.	<b>FEB</b> Design tool startup Figma raises 25M Series B led by Kleiner Perkins <b>Mamoon Hamid</b> .

# Think Beyond Silicon Valley: India and Design

By 2050, India's economy is projected to be the world's second largest, behind only China. —[WEF](#)

01

## English Speaking

125 million English speakers, second only to the United States.

Oral tradition where narrative is the primary mode of culture propagation.

India is a pluralistic society, secular and incredibly diverse. Multi-ethnic Art & Craft tradition with local idioms marking design sensibilities. \* Strictly speaking, there is no such thing as a unified "Indian" culture- it's identified by region / state.

Differing in Cuisine, Language, Performing arts, Apparel, Customs, Music, Literature, Architecture, ...

02

## Mobile Culture

India has the second largest installed base of smartphones in the world behind China of ~300 million.

Basic smartphone handsets are available at below \$50

Monthly data plan for under \$2

People in India spent ~150 billion hours on Android devices in 2016

70% of Indians consider local language (22 official local languages) digital content more reliable than content in English

9 out of 10 users coming online are not proficient in English, but adapt anyways. Many use the English keyboard -- not bothering to switch to the script of their native language

03

## China with (not vs) India

China and India make a complementary combination of machine power and human power: China - Products / India - Services.

They're giant neighbors.

Each has a population of over a billion (they collectively account for 36.3% of the world's people).

They anchor the "rise of the rest."

Each touts its style of governance as opposed to that of the other: China, with its authoritarian efficiency; India, with its democratic vibrancy.

04

## JUGAAD

In Hindi,  
*"overcoming harsh constraints by improvising an effective solution using limited resources".*

(a.k.a. "the MVP")

Thrift not waste.

Inclusion, not exclusion.

Bottom-up participation, not top-down command and control.

Flexible thinking and action, not linear planning.

[HBR](#) (2010) / Ravi Radjou, Jaideep Prabhu, and Simone Ahuja

# Think Beyond Silicon Valley: Latin America and Design

Latin America has the fastest rate of smartphone adoption in the world. —Fast Company

01

## Design Rush

Latin America (LATAM) has a long history with design that started out in the 1950s.

**1950s** - Mexico, Argentina and Brazil led the movement in LATAM of formal design schools.

**Today** - Vibrant startup ecosystem. Institutum, “IDEO of emerging markets” has 5 offices in LATAM and 140+ consultants.

**Future** - A new generation of mobile users could create an ideal environment for a new digital currency.

02

## With the Wall or Without It

LATAM region, with 650 million people, is exploring opportunities to be less dependent on the US economy.

The Trans Pacific Partnership has been signed between 11 countries, and China is solidifying its ties with the region via startups.

Ex: China’s Didi acquires 99, a ridesharing company in Brazil 99.

03

## Copy, Adapt and Improve

Increased activity in the startup ecosystem in LATAM.

Many of the startups are adaptations of successful models elsewhere customized to LATAM environment, while often finding opportunities to improve beyond the original.

Ex: Kubo Financiero is the Mexican LendingClub, and it’s introduced a social responsibility component to investing - which resonates with users in a nationalistic country like Mexico.

04

## Design for Trust

Corruption is everywhere.

There is a generalized lack of trust between people, companies and governments.

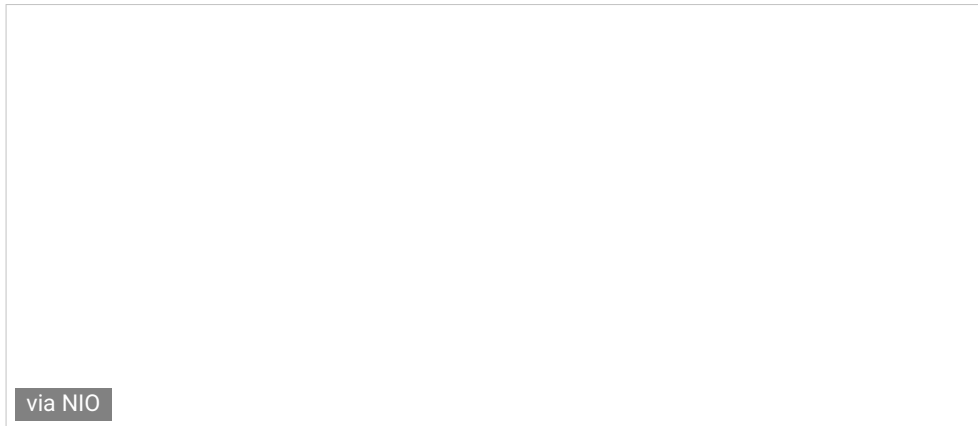
Startups are disrupting traditional industries by designing to inspire trust and prevent fraud while providing a good user experience.

Ex: Nubank - online credit card company, and Enlight - Mexico’s solar-energy startup.

# Think Beyond Silicon Valley: China and Design

01

## Car Experiences



New driving and transportation experiences via [NIO](#) [Weima](#) [Xiaopeng](#) [FF](#)

### CHECK OUT TWO NEW DESIGNER-FOUNDED STARTUPS

1. [ShanZhai City](#) A social impact assessment big-data company.
2. [Youzan](#) SaaS company to help anyone open an online shop on WeChat.

02

## Retail Experiences



Alibaba Hema and the Starbucks Roastery represent a new vertical integration between online and offline experiences.

Related: Employee-less [BingoBox](#) convenience stores are unlocked with a mobile phone by scanning a QR code and with no cashier.

# Think Again Beyond Silicon Valley: China and Design

03

## Alibaba Luban: E-commerce Design Robot

via UISDC

- Alibaba Luban produced 400 million banners during the 2017 singles day, resulting in a 100% increase in conversion rate.
- 1 million banner / e-commerce designers in Alibaba's ecosystem (70% face the challenge from Luban).
- More automated marketing design tools are emerging like Arkie and Kuaizi.

04

## Design & AI report

via UISDC

Visit the Design & AI Report produced by **Ling Fan** in collaboration with Tongji University, Tezign, and Alibaba AI Design Lab

# You're not getting any younger. You're getting B(older).

Restricting its estimate to those aged 60 and up, market research firm Euromonitor predicts that by 2020, worldwide older-adult spending will reach \$15 trillion—and that's still well before global aging will fully hit its stride. By 2030, the Boston Consulting Group estimates that the 55-plus population will have been responsible for 50 percent of the US consumer spending growth since 2008, 67 percent of that of Japan, and 86 percent for that of Germany. It's no exaggeration to say that the world's most advanced economies will soon revolve around the needs, wants, and whims of grandparents.

—Joseph Coughlin

# Think Beyond GenZ + Millennials: Think Gen B(older)

01

## A B(older) EU Median Age



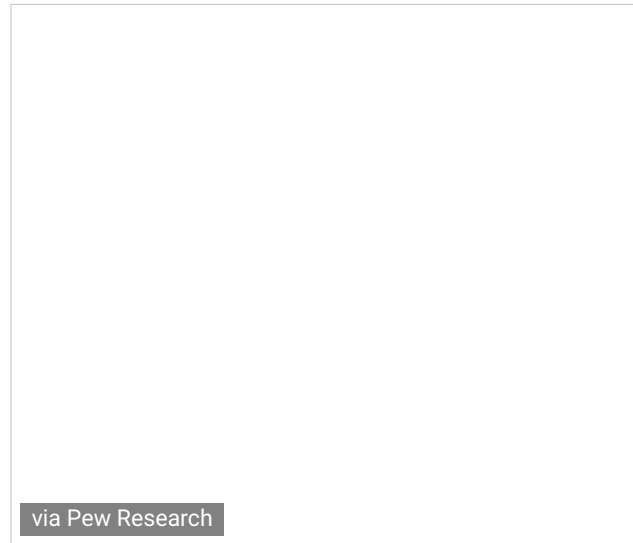
via WEF/@aronstrandberg

U.N. projects some European countries to start hitting a median age of 50 or higher. This includes countries like Spain, Italy, Portugal, and Greece, and then later Germany, Poland, Bosnia, and Croatia.

—WEF

02

## A B(older) US Too



via Pew Research

From 1960 to 2060, our pyramid will turn into a rectangle. We'll have almost as many Americans over age 85 as under age 5.

—PEW

03

## Startup CEOs Get B(older)

The aging of the U.S. population, combined with the increasing rate of new entrepreneurs among individuals aged fifty-five to sixty-four, have shifted this group from making up 14.8 percent of new entrepreneurs in the 1997 Index to 25.8 percent of all new entrepreneurs in the 2015 Index.

—Kauffman Foundation

*Younger entrepreneurs (ages twenty to thirty-four) made up 24.7 percent of all new entrepreneurs in the 2015 index*

# Scaling Design

## Design capabilities don't scale like Moore's Law

- Design is generally used early in the product development process instead of applied at the very end before it is shipped.
- Creating an inclusive culture for designers is how to start building better products. Listening to what they value is how to start.
- Unconscious bias is promoted by stereotypes that exclude others. Recognizing exclusion is a way to take immediate action.
- Design tools and systems are ch-ch-changing these days. Among many new capabilities, machine intelligence looks to change everything.
- We're in a golden age of data visualization and quant-qual science. The tools that are available today enable understanding -- for those who want it.
- User research skills and product management skills are vital for designers to understand to work more inclusively with customers and product colleagues.

# Is a college degree necessary to succeed as a designer in tech?

86%

of current design students surveyed said that they learned their digital skills from resources outside their coursework.

—2016

# Is the culture of your company set up for design to succeed?

## Which kind of design-oriented company are you?

How is your design function organized?

- A. We have a single central design department
- B. We have multiple design teams
- C. Design is a distributed expertise, not a department

How do you manage the physical/digital divide?

- A. We have discrete physical and digital design teams
- B. Our different design functions sit and operate together
- C. We train our teams so they can integrate more effectively

Where do your design teams work?

- A. Design works out of a central office
- B. Our designers sit in all of our offices
- C. We have cross-functional product/service studios

Does design fit into your development process?

- A. We have a clear design phase
- B. Design is involved in several stages of the development process
- C. Design is involved throughout life cycle (cradle to grave)

When do you undertake user research?

- A. Early qualitative research
- B. Early qualitative and quantitative research
- C. Qualitative and quantitative research throughout

What do you do with research findings?

- A. We report what the customers tell us
- B. We assess what the customers want
- C. We interpret what the customer actually needs

When do you prototype?

- A. We have a prototyping phase
- B. We may have more than one prototyping phase
- C. We iterate end-to-end and prototype as needed

Why do you prototype?

- A. To check production/launch feasibility only
- B. To fail “fast” -- kill under-performing ideas
- C. To “refine fast” -- build on solutions and address our failings

Who leads design in your company?

- A. A head of department, e.g. marketing
- B. A chief design officer
- C. A chief design officer who is a peer to other board members

How do you make design decisions?

- A. Based on leader opinions
- B. Using semi-subjective metrics
- C. Objectively (using design metrics)

How do you track design performance?

- A. We do not track design performance
- B. We review customer feedback post-launch
- C. We track pre- and post-launch as rigorously as we measure quality, cost, and delivery

How do you incentivize good design?

- A. We have no incentives tied to customers or design
- B. Design shares company-level performance bonuses
- C. We track and reward customer satisfaction, even at board level

How brave is your organization when it comes to making design decisions?

- A. We suffer from bloated and incremental product portfolio
- B. We have become better at killing incremental products during project development
- C. We strive to create bold new products to meet unmet needs, and accept that not all will

Take the  
McKosmo Quiz  
to find out your  
type! It's easy.

# At what stage is design typically involved?

2.98

overall average on a 1-to-10 point progression from a product's conception (1) to just before it ships (10). Last year it was 2.89.

64%

are 3 and below, which means the majority use design early.

By far the largest number of samples are from the US, so the variance by country will be less reliable, but good to note.

# Whatever you do, don't F up the culture

Why is culture so important to a business? Here is a simple way to frame it. The stronger the culture, the less corporate process a company needs. When the culture is strong, you can trust everyone to do the right thing. People can be independent and autonomous. They can be entrepreneurial. And if we have a company that is entrepreneurial in spirit, we will be able to take our next “(wo)man on the moon” leap. In organizations (or even in a society) where culture is weak, you need an abundance of heavy, precise rules and processes.

—Brian Chesky

# Creating an inclusive culture for designers is where to start

Do any of these designer stereotypes sound familiar?

Designers make it pretty.

Designers can't lead teams.

Designers don't understand business.

Designers only care how it looks.

# Unconscious bias is promoted by stereotypes that exclude others

*What false stereotype would you like to break when it comes to how designers are perceived?*

# How do you create an inclusively managed culture for designers?

Hey, Boss!  
Can you  
please ...

Be clear  
about the  
business  
problem.

Advocate  
for the user.

Allow for  
failure.

Ask  
questions  
to build  
empathy.

# Every boss of designers can stand to hear feedback every day

*What would you tell your boss if you could be “radically candid”? But how do you give it back? Katie Dill has good tips for Criticism and Recognition.*

# Tools that ground the visual language of the computer

1981

via Quantel

The Paintbox package came together complete with its own disc store and library management. At that time a big hard drive held 70 megabytes on 14-inch platters that occupied about 4RU, took loads of power and cost about £5000.

—Quantel

1984

via Computer History Museum

MacPaint was written by Bill Atkinson, who was a member of the original Macintosh development team. He based it on his earlier LisaSketch (also called SketchPad) for the unsuccessful Apple Lisa computer, so he originally called it MacSketch. He started work on the Mac version in early 1983.

—The Computer History Museum

1989

via Computer History Museum

Adobe Photoshop 1.0 minimum system requirements are hard disk and 2 megabytes RAM. A gray-scale or color monitor is recommended, and a Macintosh compatible scanner is optional.

—First Versions

# Prototyping tools started in code and got more visual

1987

Apple Computer Inc. will introduce an unusual database and management information program Tuesday that the company hopes will help it maintain its lead in technology for making computers easy to use.

The new software, known as Hypercard, will enable users of Apple's Macintosh computers to organize information on computerized file cards that can be linked to other file cards in intricate ways. The program will be included for no charge with each Macintosh sold, starting this month.

—NYT  
via MacGUI

1990

via Lingo Workshop

VideoWorks (1985 predecessor to Director) required a “Macintosh with at least 128k” and “although VideoWorks will work satisfactorily with just the Macintosh’s internal drive, a second (external) drive will help avoid a lot of disc swapping.”

—Lingo Workshop

2013

Emily Schwartzman road tests many of the then available prototyping tools and provides a useful study and chart — which grows into a general resource on Cooper.

via Cooper

# Design tools and systems are ch-ch-changing these days

Integrated cloud	Responsive built-in	Project management	Flexible annotation
Version control	Convert to actual code	Realtime collaboration	Machine intelligence

Future design tools with further developments in AI will possibly ...

1. Construct models of our customers
2. Generate design directions on their own
3. Sort and prioritize competing constraints
4. Identify best potential ROI and more
5. Enable savings in time for designers
6. Run experiments for us and reduce risks
7. Create many variations to test

Source: [Leah Buley: Thoughts on the Future of Design Tools](#) + [@johnmaeda's un-scientific observations](#)

8. Scan the entire experience for inconsistencies

# Erondy's Playbook has the Qs&As for designers amidst scaling

## The top 15 questions designers are asking today

1. How do you elevate the perception of design at a company? [?](#)
2. How do you show the value of design to justify hiring more designers? [?](#)
3. How do you establish more transparency for design within a company? [?](#)
4. How do you know when it's time to leave a company? [?](#)
5. As a team grows, how do you maintain the quality and consistency of its design work? [?](#)
6. What's the best way to present work during a design critique? [?](#)
7. How can a team keep track of past work and learnings as a living repository? [?](#)
8. When working with remote teams, how do you effectively collaborate with each other? [?](#)
9. How do you know when a design is 'done'/right? [?](#)
10. What are commonly used design KPIs? [?](#)
11. What are things to do to avoid burnout? [?](#) / [?](#)
12. When interviewing, what are some questions to ask about a company's culture and design team? [?](#)
13. Is going to college worth it? ([college](#))
14. How should I structure my design portfolio to best communicate my skillsets? [?](#)
15. Should I start my career at an agency, startup, or big company? [?](#)

# We're in a new age of data visualization × quant-qual science

## What's a Data Scientist?

The core set of skills:

- Programming Skills
- Statistics
- Machine Learning
- Multivariable Calculus & Linear Algebra
- Data Wrangling
- Data Intuition
- Data Visualization & Communication

## OSDSM

The Open Source Data Science Master's Degree is a cool set of resources gathered by Clare Corthell.

## Talk data to me

Data visualization and journalism teams at The Guardian NYT WSJ have been at the forefront.



These tools show a new direction:

- Observable by Mike Bostock
- Data Studio by Google
- Colaboratory by Google

And open source ones exist too:

- D3.js by Mike Bostock
- Processing by Processing Team
- Zeppelin by Apache
- DrawBot by DrawBot Team

## Have I given up on design?

***Nope.** I'm just collecting all the parts I've been learning/doing for my whole life before — I get uploaded to the big cloud in the sky one day. To design amazing experiences for people, I've always chosen to think/work inclusively and broadly.*

# Learn user researcher skills and principles to grow

## The top 10 most valuable design skills for the future

1. Adaptability to tech and social change
2. Empathy
3. Communication skills
4. Asking good questions
5. Cross-functional skills
6. Storytelling
7. Cross-cultural skills
8. Observation and listening
9. Psychology and human behavior
10. Managing complexity

Note that many of these skills are exercised with expertise by User Researchers. To learn more about User Research see Erika Hall's work

Surprisingly very few companies conduct qualitative user research.

Early-stage start-ups surveyed by Albert Lee/Dayna Grayson that use qualitative research: 12%, Mid-stage: 32%, Late-stage: 46%

– NEA Future of Design in Start-ups 2017

# Learn product management skills and principles to grow

## The top 8 skills that designers need to understand in business

1. Product Roadmap Strategy
2. Company Strategy
3. Retention/ Engagement Metrics
4. Conversion Metrics
5. Funnel Acquisition Metrics
6. Revenue Model
7. Financial Metrics (i.e. Revenue, Margin etc.)
8. Resource Allocation

## The top 10 skills needed near-term for designers in start-ups

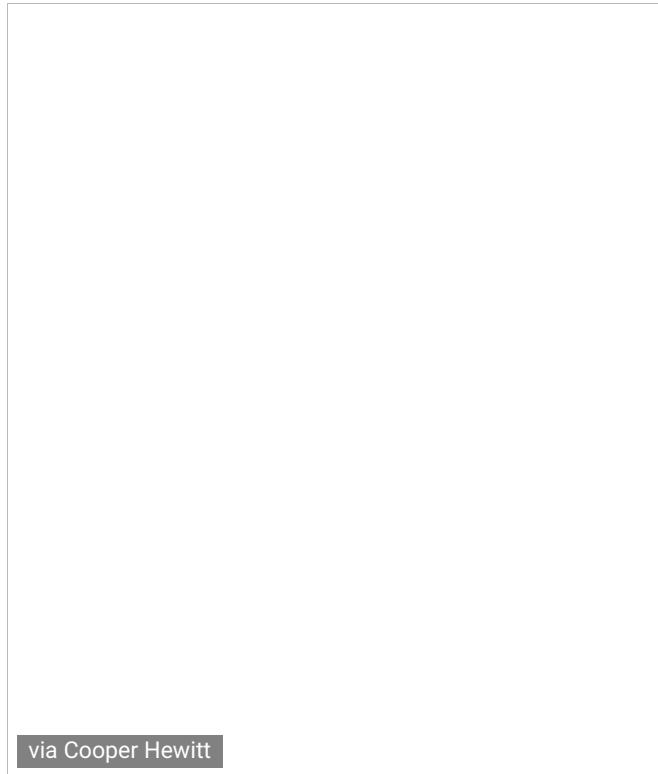
1. Business
2. Communication
3. People Skills / Emotional Intelligence
4. Writing - Copywriting
5. AR Design
6. Data Science
7. Empathy for End User
8. Facilitation Skills
9. Management Skills
10. Service Design

## The top 10 skills needed further out for designers in start-ups

1. Writing
2. AI / ML
3. Data Science
4. Empathy for End User
5. Storytelling
6. Sound Design
7. Scenario Design / Service Design
8. Ethics / Bias
9. Psychology
10. Systems Design

**Highlight** corresponds to product manager and design leader/manager skills. **Highlight** is a classical design competency that is needed today.

# The best way to scale design? Listen to what Bill used to say.



If there's a simple,  
easy design  
principle that binds  
everything together,  
it's probably about  
starting with the  
people.

—Bill Moggridge

*Bill Moggridge, co-founder of IDEO and director of the Smithsonian's Cooper-Hewitt National Design Museum, died September 8th, 2012, following a battle with cancer. An outspoken advocate for the value of design in everyday life, Bill pioneered interaction design and integrated human factors into the design of computer software and hardware.*

via Cooper Hewitt

1943-2012

# Scaling Design Case Study: Automattic.Design

01

## Design Culture

You need a CEO who cares about design, and recognizes that good design is good business. It's because the customer wants it. ✓

### Resources

- | [Stanford GSB Case Study](#)
- | [Design in Tech Reports](#)
- | [IBM Design](#)

02

## Design Talent

You need a strong designer hiring leader. They will be, "Someone who you wish was designing instead and loves talent, too." ✓

### Resources

- | [Brie Anne Demkiw's tips](#)
- | [Automattic.Design blog](#)
- | [Jared Spool's Master Class](#)

03

## Design Leaders

You need a primary design lead who cares about leadership and enjoys fostering new leaders. ✓

### Resources

- | [Redesigning Leadership](#)
- | [InVision Design Leadership](#)
- | [Within Leadership Retreat](#)
- | [Designer Fund](#)

04

## Design Systems

You need a few computational designers who work inclusively. Plus listen to Nathan Curtis. ✓

Our design system offers *[kit scope]* released as *[kit outputs]* and documented at *[kit doc site]* produced by *[people]* in order to serve *[products]* products and experiences. † † †

### Resources

- | [Awesome Design Systems](#)
- | [Adele](#) | [DesignSystems.com](#)
- | [Some Needed Levity](#)

05

## Design Ops

You want to product- and project- manage design as a service inside the org. And we've recently hired for Design Ops. ✓

### Resources

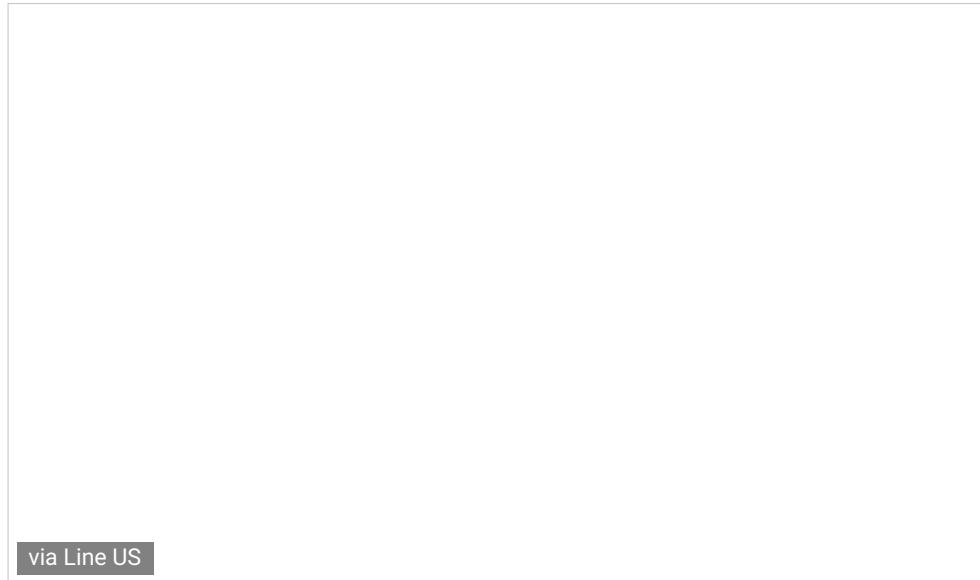
- | [What is Design Ops?](#)
- | [Design Ops Lenses](#)
- | [Holly Burroughs Cole](#)

# Computational Design: First Steps

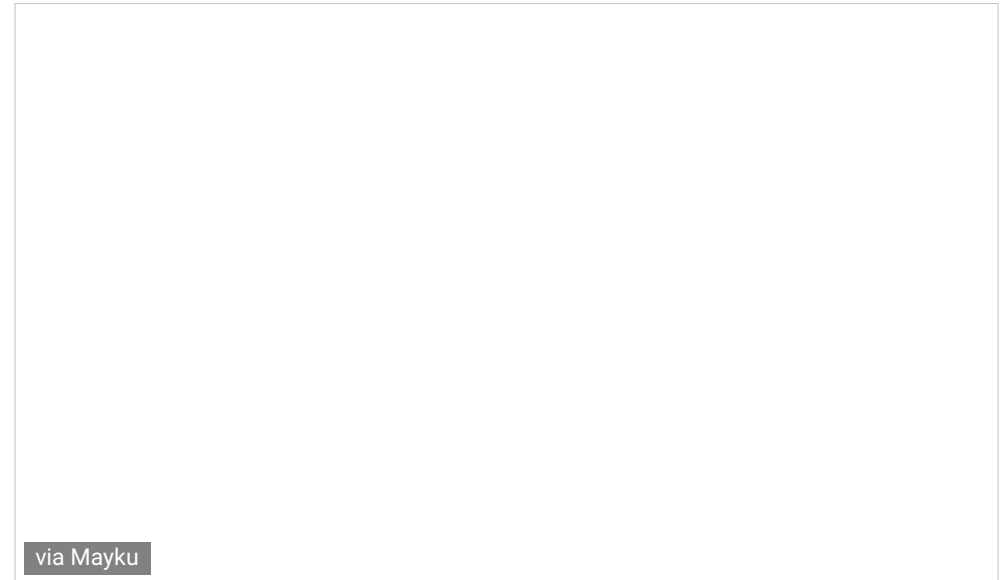
Atoms × Bits × People has happened at scale

- Custom fabrication technology that leverages computation while using less tech, traditional manufacturing ideas is becoming more accessible.
- Speech recognition has advanced to the point where the experiences provided by this technology are becoming just as important as how computer graphics technology brought GUIs to the screen.
- Augmented reality (and VR) experiments and ideas abound as the technology becomes more accessible via smartphones and inexpensive peripherals.
- The majority of Americans now own a cellphone and are rapidly upgrading to smartphones, but the US lags in 13th place in average mobile data used per person across countries.
- Speed is a key design attribute of a mobile experience with sessions averaging on the order of 30 seconds and over half of site visitors abandoning a site visit if takes longer than 3 seconds to load.

# Atoms × Bits are getting cheaper to work (and experiment) with



Line US *via the UK*



Mayku *via the UK*

The Line US and Mayku devices are excellent examples of low-cost, sophisticated computational design tools to work (and experiment) in the physical world. Line US is genius, and Mayku uses old-school vacuum forming methods.

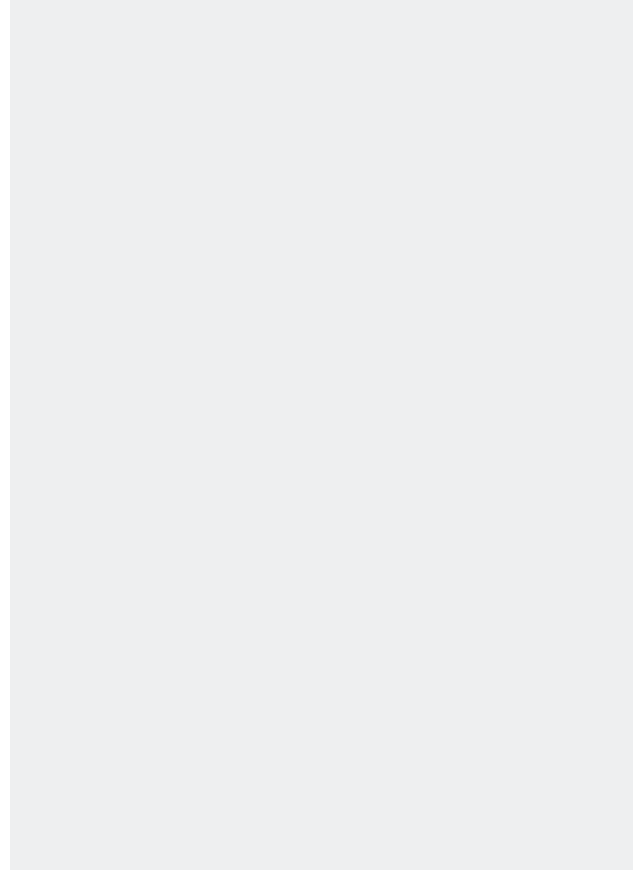
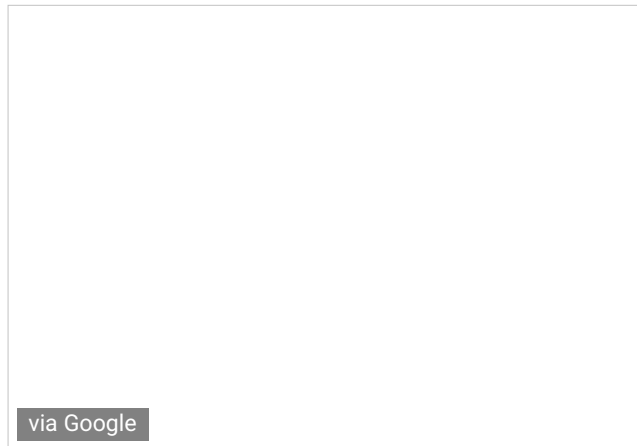
Design milestones to note are a 4d-printed dress by Nervous Systems accessioned to MoMA and the ever-expanding work of MIT Media Lab's Neri Oxman. Manufacturing machinery advances to note in 3d-printing are materials scientist Jennifer Lewis' work on footwear with Voxel8 and advanced 3d-printing capability in metal achieved by Desktop Metal

# Mobile (Atoms × Bits) is how everyone (will) get things done

When a question or need arises, our phones are by far our most trusted resource, with 96% of people using a smartphone to get things done.

To meet these needs, people are at least twice as likely to use search than other online or offline sources such as store visits or social media

—Lisa Gevelber Google



—PEW

The vast majority of Americans – 95% – now own a cellphone of some kind. The share of Americans that own smartphones is now 77%, up from just 35% in Pew Research Center’s first survey of smartphone ownership conducted in 2011.

—PEW Research Center (2018)



The Open Source typeface Inter UI claims to be better for reading text on a mobile device.

Starbucks is challenged by mobile order-ahead fulfillment but will likely design good fixes.

# Mobile adds time to our digital lives, and data usage to our plans

via @lukew

---

Mobile's mostly additive — it added more screen time in the US than it took from other media.

Time spent on mobile has surged, while time spent on other media has only slowly declined.

—Luke Wroblewski

Finland's average mobile data usage per person per month is 10.95Gb, followed by Latvia 8.21Gb, Austria 6.28, Sweden 4.38, Denmark 4.37.

The US is #13 at 2.67Gb.

—OECD

# Mobile demands higher performance standards in experience

**19 seconds**

average mobile web page load time on a 3G connection

—[Google](#)

**53% of users**

abandon site that takes longer than 3 seconds to load on mobile

—[Google](#)

**35% smaller**

JPEGs using a new open source encoder called Guetzli

—[The Verge](#)

**30 seconds**

or less constitute more than half of all smartphone sessions

—[@lukew](#)

# Mobile phones have more sensors than a microphone these days

In 2018, currently [Android Docs](#) lists Android Sensor Types as having 9 base sensors. And there are 5 other “composite sensor” types that are created out of the base sensor systems. Two sensors not listed there are the microphone and visible light camera — of which smartphones today now sport two each, at least.

For context, a BMW 5-series car has a 100 or more sensors.

Sensors provide data,  
software provides experiences.

—[Qualcomm](#) (2014)

## Android base sensors

- Accelerometer
- Ambient temperature
- Magnetic field sensor
- Gyroscope
- Heart Rate
- Light
- Proximity
- Pressure
- Relative humidity

## Android composite sensor types

- Linear acceleration
- Significant motion
- Step detector
- Step counter
- Tilt detector

## Other sensors on devices

Range camera, IR camera, Heart rate, Fingerprint

The Nintendo Switch represents a different kind of form-factor in design, which gives rise to a different kind of experience.

via Nintendo

Snapchat Spectacles received a lot of attention for how it failed to capture attention, but it remains a clever design experiment.

via Amazon

▶ Relevant SNL sketches: [Alexa](#) [Glasses](#)

# Towards conversational design

Conversation is not a new interface. It's the oldest interface. Conversation is how humans interact with one another, and have for millennia. We should be able to use the same principles to make our digital systems easy and intuitive to use by finally getting the machines to play by our rules.

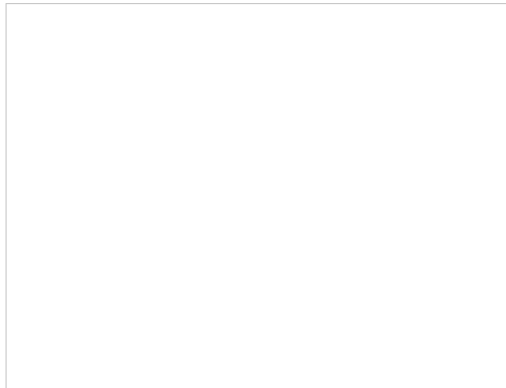
—Erika Hall

# Conversational experience design is worth talking about

Voice promises to deliver interactions closer to how we all communicate as human beings. Applications have to adapt to people now, instead of the other way around.

—Khoi Vinh

Sonos enters the voice arena with the Sonos One



Siri saying, “*One liter is 33.81 fluid ounces.*” in iOS 9, iOS 10, iOS 11.



—Apple Machine Learning

Voice recognition is the transcribing of audio to text and natural language processing is taking that text and working out what command might be in it. Since 2012, error rates for these tasks have gone from perhaps a third to under 5%.

—Benedict Evans

Conversational Design is out this month by design leader, user research guru, and author, **Erika Hall**.

The experience design milestone in prose × chat by Typeform is worth reading/seeing/interacting.



The Science of Talking with Computers  
DAVID Miami / BK Spot  
Infinite Looping Voice Assistants  
Billy Bass Alexa

# The Web's become much better at listening and speaking up

2012

This specification defines a JavaScript API to enable web developers to incorporate speech recognition and synthesis into their web pages. It enables developers to use scripting to generate text-to-speech output and to use speech recognition as an input for forms, continuous dictation and control. The JavaScript API allows web pages to control activation and timing and to handle results and alternatives.

—W3C

2018

```
var recognition = new SpeechRecognition();
```

The Web Speech API provides two distinct areas of functionality — speech recognition, and speech synthesis (also know as text to speech, or tts) — which open up interesting new possibilities for accessibility, and control mechanisms.

—Mozilla Using the Web Speech API



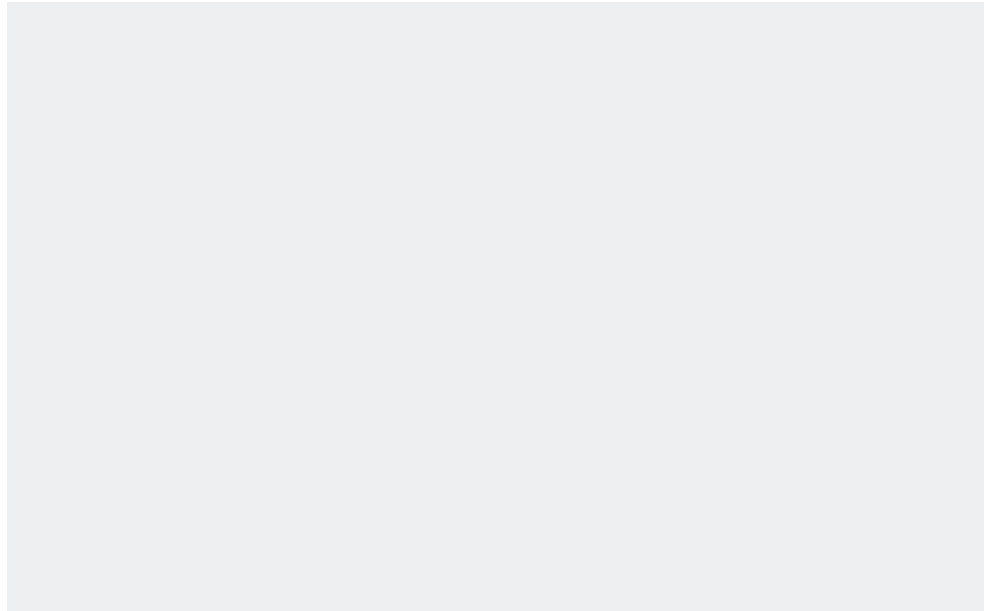
Listen Talk Colors Map States



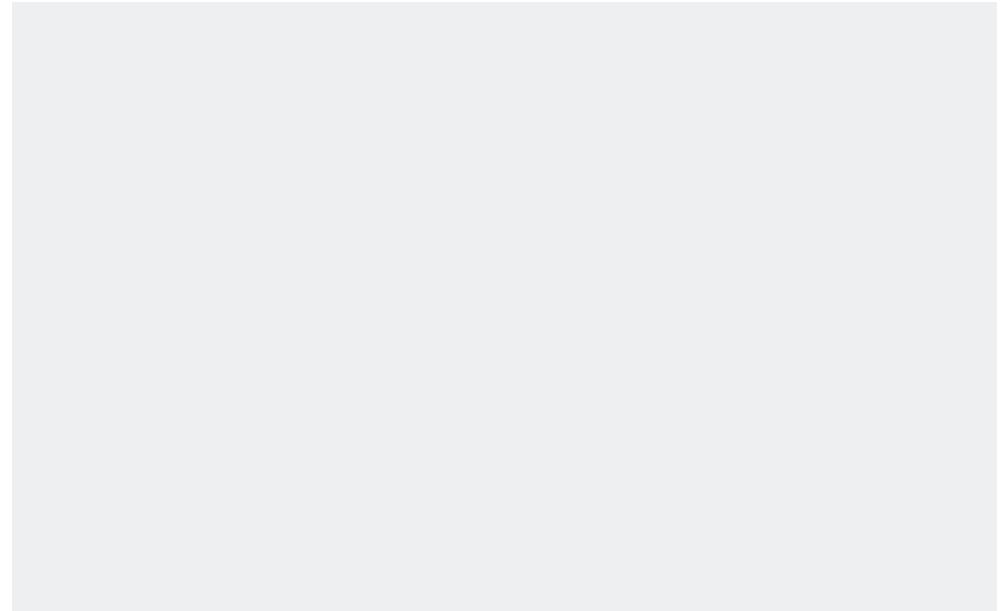
Google Experiments with Mystery Animal Meme Buddy

# Should you care about augmented/virtual reality? Sure!

We believe that AR technologies will be instrumental in closing the skill gap that is responsible for the shortage of skilled manufacturing workers. Because AR will allow more workers to do high-skill jobs, and improve their performance in this work, we are optimistic that industrial productivity will grow and that this will ultimately translate into higher wages. —HBR



Zach Lieberman and collaborators



Project iCan ドラえもん どこでもドア

# Computational Design: Artificial Intelligence

AI isn't good at inclusive design because we aren't, too

- 88% of designers surveyed believe that it will be at least 5 years or more until visual designers are replaced by AI. AI can already do a lot right now.
- The history of AI and generating visual art goes back to the 1960s with A. Michael Noll and other artists at Bell Labs, and stretches back to Marcel Duchamp.
- AI is extremely proficient at tedious tasks that no human should really have to do, like: adjust image contrast, correct messy lines, and re-style images.
- Google is by far the leader in mixing AI with design experimentation due to the amazing talent they've acquired like Martin Wattenberg and Fernanda Viegas — who at IBM first advanced data visualization with their landmark Many Eyes.
- AI is showing us the unintended consequences of running what appear to be “fair” algorithms that feed off of past activity and practices that are converted into training data. But embedded in that training data is our long history of exclusion.

# When do you expect AI to replace most visual designers?

5

years or more before  
AI replaces most  
visual designers  
believed by 88% of  
designers surveyed

35%

of designers surveyed  
believe it will be ten  
years or more

# AI has gone to art school and its grades are improving

## ► Input Image —Max-Planck Institute

via UAL  
A digital computer and microfilm plotter were used to produce a semirandom picture similar in composition to Piet Mondrian's painting "Composition With Lines" (1917). Only 28% of the Ss were able to correctly identify the computer-generated picture, while 59% of the Ss preferred the computer-generated picture. Both percentages were statistically different (0.05 level) from selections based upon chance according to a binomial test.

—A. Michael Noll (1966)

## ► Generated Image —Max-Planck Institute

GitHub repositories with AI-related terms

94,681

machine learning

28,189

deep learning

10,544

artificial intelligence

# “Hey AI-designer. Can you go and \_\_ for me?”

- ▶ Remove watermark \*
- ▶ Resynthesize style \*
- ▶ Change expression \*
- ▶ Perfect contrast \*
- ▶ Generate variations \*
- ▶ Fix drawing \*

via Facebook: 10 Tips to Spot False News

**Consider the photos.** False news stories often contain manipulated images or videos. Sometimes the photo may be authentic, but taken out of context. You can search for the photo or image to verify where it came from.

—Facebook Help Center

# AI can make more than just images

Kram / Weisshaar

## Designing by AI

Design an advertising spot by AI

—AdAge

Fits you into a garment perfectly by AI.

—Quartz

Design a game engine by watching another one being played by AI

—Georgia Tech

Design websites by AI

—WIRED

Design a Stitchfix blouse by AI

—WSJ

Design complex machinery parts by AI

—Technology Review

Design a table by AI Kram / Weisshaar (2003)

# Learn AI and don't be afraid — stay awake. Don't freeze.

80

[createwith.ai](#) examples  
curated by Nao Tokui.

Open source  
[deeplearn.js](#) is a  
library lets you  
experiment with  
machine learning via  
the Web

Martin Wattenberg, Daniel Smilkov, Fernanda Viegas [Teachable Machine](#)

# It's only human that we will work to thwart AI with all our might

via Technology Review

How do you turn a dog into a car? Change a single pixel.

—Technology Review

On March 28th, 2017 congress passed a law that makes it legal for your Internet Service Providers (ISP) to track and sell your personal activity online. This means that things you search for, buy, read, and say can be collected by corporations and used against you.

Click this button, and your browser will start passively loading random sites in browser tabs. Leave it running to fill their databases with noise. Just quit your browser when you're done.

—makeinternetnoise.com

How to hide from machines? How to become invisible in an increasingly visual age.

—ANTFC version alpha\*

# Because what we make in now has unintended consequences

JULY 2015

**Google** Mistakenly Tags Black people as “Gorillas” Showing Limits of Algorithms WSJ

JUNE 2016

More **Airbnb** Customers are Complaining About Racism The Economist

AUGUST 2016

Clearly **Snapchat** Doesn’t Get What’s Wrong With Yellowface Wired

How **Nextdoor** reduced racist posts by 75% Fusion

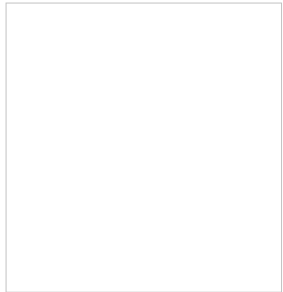
SEPTEMBER 2016

**Airbnb** CEO: Bias and Discrimination Have No Place Here Time

And a new and needed discourse is emerging

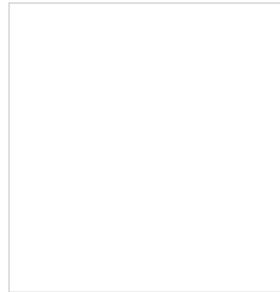
APRIL 2017

**Tragic Design** by Jonathan Shariat and Cynthia Saucier



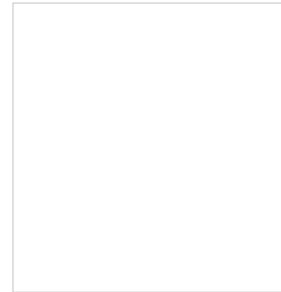
OCTOBER 2017

**Technically Wrong** by Sara Wachter-Boettcher



JANUARY 2018

**Automating Inequality** by Virginia Eubanks



**Kat Holmes** new book is forthcoming on inclusive design

Design has long been asking questions about social responsibility

Design for All is design for human diversity,  
social inclusion and equality.

—EIDD Stockholm Declaration (2004)

# Inequality

## We can expect AI to only widen the digital divide

- It's easy in the technology world to look away from inequality because the privileges that come with tech life are pleasurable and self-fulfilling.
- But designers in tech can easily forget that they're in a tiny minority of the population that doesn't really match their much broader consumer market.
- So getting out of the tech bubble can be a simple yet powerful way to better connect with "real" people who don't really need what is being created today. Ultimately, it becomes a way to design and make better products for all people.
- A majority of designers in tech find themselves not working solely on premise. This means that we are entering an era where work can be more evenly distributed outside of hubs like Silicon Valley.
- Our design imperative at Automattic is to imagine a world where WordPress is good design for all. And we're currently exploring how remote work can achieve a new level of inclusive design.

# We're seeking a freedom that's being eroded on the Internet

We are in the “Internet Two” phase as Steven Johnson called it. Internet One was an open network, open protocols, open systems. Internet Two is closed platforms that increasingly dominate the market and own and control our content and us. We need to get to Internet Three where we take back control of ourselves. It is high time for that to happen.

—Fred Wilson

## FCC votes to remove net neutrality

The FCC's net neutrality vote has finally been published in the Federal Register, the government's official record of all administrative actions. The moment is key, because it kicks off the next phase of the fight over the future of the Internet.

—Washington Post

We're fully connected but algorithmically divided

Blue Feed, Red Feed:  
See Liberal Facebook  
and Conservative  
Facebook, Side by Side

—WSJ

Noted blog posts in 2017

F Facebook  
—John Gruber

Quitting Facebook  
—Heinrich Hartmann

Facebook you (*bleep*)  
—Brad Frost

*Note that similar posts are being  
made on most major social networks  
these days of “I’m giving up XYZ”*

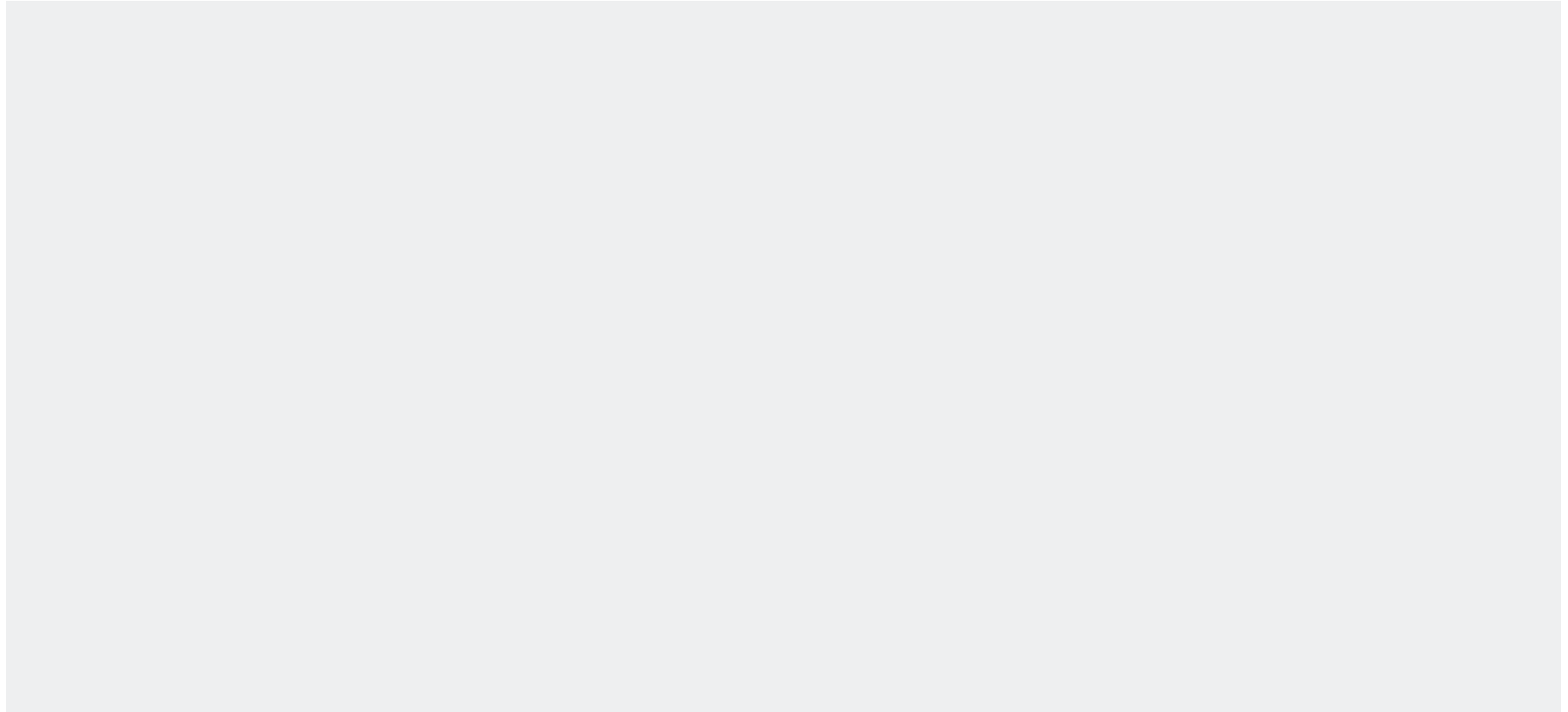
# #DesignInTech is a global phenomenon and beyond Silicon Valley



# The US map for #DesignInTech is unsurprising



# But if you look closely or broadly, inequality sits in the shadow



—EIG *This Mapbox wouldn't embed*

# Congrats! You're in the 5% of the most-skilled computer users.

Nielsen-Norman Group

Across 33 rich countries, only 5% of the population has high computer-related abilities, and only a third of people can complete medium-complexity tasks. What does this simple fact tell us? You are not the user, unless you're designing for an elite audience.

—Jakob Nielsen NNG

# Is the digital divide related somehow to poverty and inequality?

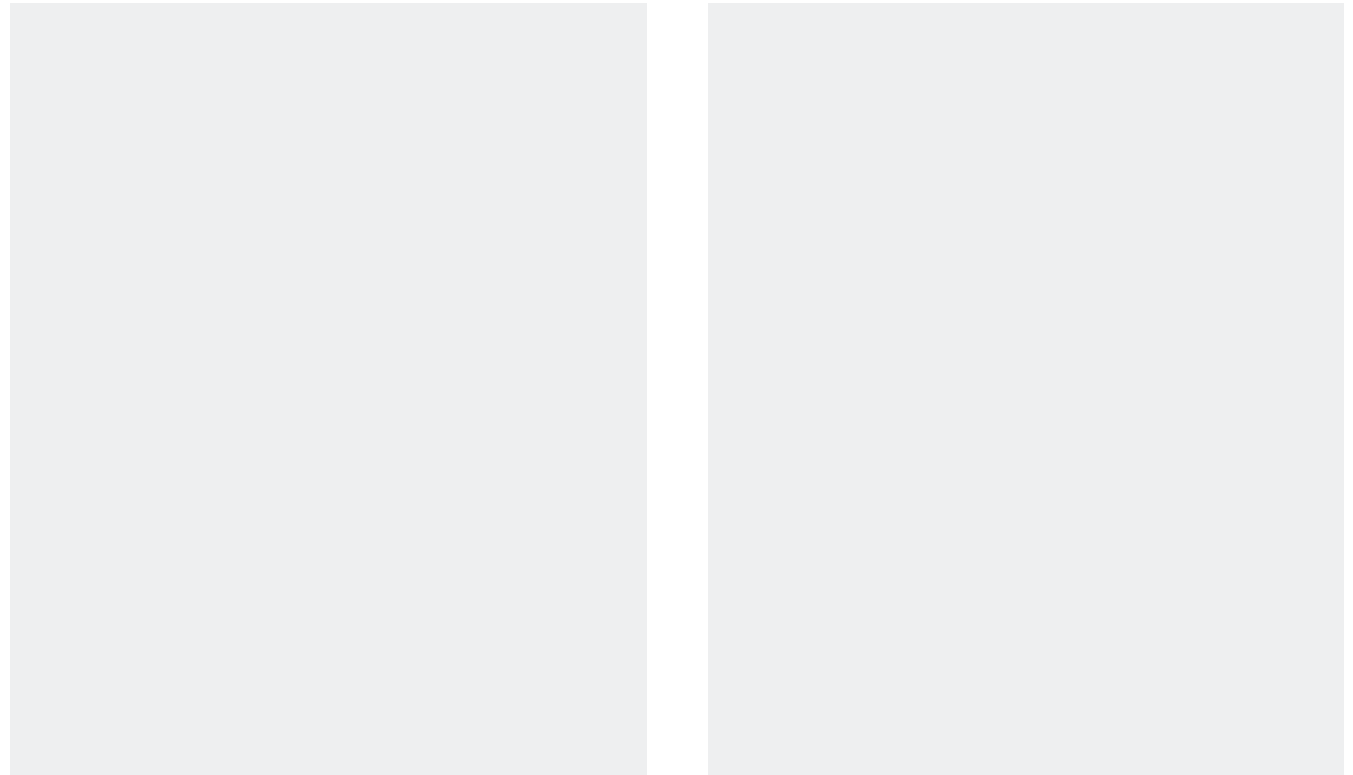


While urban poverty is a unique challenge, rates of poverty have historically been higher in rural than urban areas. In fact, levels of rural poverty were often double those in urban areas throughout the 1950s and 1960s.

1. Poverty is higher in rural areas
2. Most new jobs aren't in rural areas

It's easy to see why many rural Americans believe the recession never ended: For them, it hasn't.

—PBS



# Do you need to care at all? No. But you need to feel the imbalance



I was a child refugee.  
I know how it feels to  
live in a camp,  
robbed of my  
humanity.

—Ai Weiwei



The exiled Chinese conceptual artist Ai Weiwei has here created an ambitious, humane and often shocking cine-essay on the subject of migrants and the 21st century migrant condition.

—The Guardian

# Inequality impacts innovation, and we need all minds to beat AI

The more segregated a place becomes, the less innovative it is likely to be.

—Richard Florida

A.I. is presenting us with an opportunity to rethink economic inequality on a global scale.

—Kai-Fu Lee NYT

Systemic inequality can haunt machine intelligence.

—Kate Crawford NYT

## 638

From the [Remotive.io](#) list of companies hiring remote workers.

Source: [Remotive.io Zapier](#)

# What's “remote work” and where is it heading today?

2012

Telecommuting, working from home, working remotely: they all essentially mean the same thing (working somewhere other than in an office). And this form of work is growing.

—TIME

2018

A growing number of startups are operating without a physical office for some or all of their workforce. It makes hiring people around the world easier, keeping costs down. But it can make employees feel disconnected.

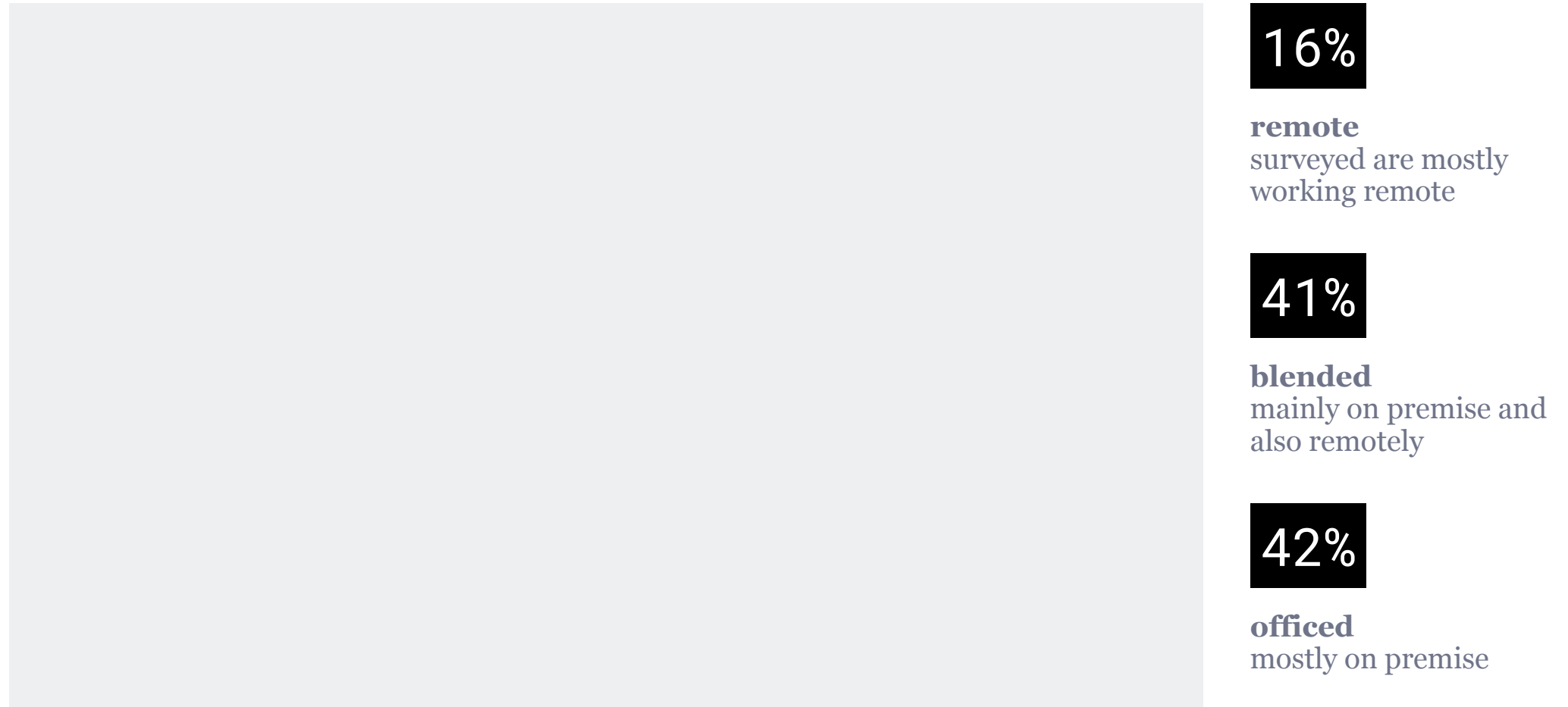
—The Information

\*\*Remote work × design tips are available via Automattic Design.

Facebook is never going to work like this. Google is never going to work like this. But whatever replaces them will look more like a distributed company\*\* than a centralized one.

—Matt Mullenweg

# Where do people work? On premise, remotely, or both?



# Automattic Design is working with students in Paintsville, KY



via @johnmaeda

I traveled with the TechJobsTour team led by Leanne Pittsford and Megan Smith through Paintsville, Kentucky. In the US there are 500,000 open tech jobs projected to grow to 1 million by 2020. Who gets to have them? Can we change exclusionary patterns?



via Gannett

A crowd of several thousand swarmed Pres. Lyndon B. Johnson in April of 1964, when he made a trip to the Appalachian town of Paintsville, Ky. in Johnson County as part of the “war on poverty.”

—Courier Journal



Around 119 million people were at risk of poverty or social exclusion in the EU in 2015, representing more than 23% of the EU population. The majority of Member States inhabitants of rural areas are more at risk of poverty or social exclusion than urban inhabitants. In 2014, 27.2% of the rural population were at risk of poverty and social exclusion compared with 24.3 % of the population living in urban areas.

—EU Parliament

# Inclusive Design

Inclusion = INCLU\$ION

- Changing perception around the idea of “helping those who are less fortunate than ourselves” into “learning how ignorant we are as privileged people” is a useful daily exercise.
- Using that energy to design and make better products is a certain kind of passion and practice that we’ll see more often in technology companies. Because inclusive design is becoming commonsense.
- Choose action over wondering about what you can do about the world you see and don’t agree with. It’s easy today due to all the technologies we have available to us.

A simple definition of diversity and inclusion says it all

Diversity is being invited to the party;  
inclusion is being asked to dance.

—Vernā Myers, Esq.

# Inclusive design takes center stage after many decades

Inclusive design issues in tech are recognized and empathy (plus action) is rising.

Pre-1950s	Early <u>designs</u> for people with disabilities, from typewriters to telephone curbs, become mass-market solutions that benefit everyone with the rise of industrialization.	After World Wars I and II, the increase in wounded veterans drives new demand for accessibility accommodations, led by programs like University of Illinois at Urbana-Champaign's <u>early work</u> on the American Standards Association A117.1 to create architectural accessibility standards in 1961.	1950s-60s	Ed Roberts, Berkeley, Independent Living Movement raises visibility of the rights of people with disabilities, leading to important societal change and making Telegraph Avenue one of the first fully wheelchair-accessible streets in the United States.	1970s-80s
Barbara Allen, a Washington-based interior designer, publishes one of the first illustrated guides to accessibility criteria, an important early example of how to turn legal criteria into design standards.	Patricia Moore goes undercover as an elderly woman to conduct design research in hundreds of cities over the course of three years, laying the groundwork for inclusive design practices.	"The Seven Principles of Universal Design" are published by <u>Ron Mace</u> of North Carolina State University.	Section 508 of the Rehabilitation Act of 1973 is passed, governing accessibility of information technology (IT) in the Federal government. After the rise of the internet, these standards will become some of the most important criteria for regulating accessibility in digital technology.	Jutta Treviranus founds the <u>Inclusive Design Research Centre</u> , offering one of the first university degrees in inclusive design.	<u>Susan Kare</u> designs the iconographics for the Apple Macintosh and <u>Virginia Howlett</u> brings design to Microsoft Windows. Both open the door to making nerd-centric computing experience into ones that can possibly appeal to non-computer people.
1990s	The Americans with Disabilities Act is passed. This civil rights legislation prohibits discrimination and guarantees that people with disabilities have the same opportunities as everyone else to participate in the mainstream of American life.	DesignAge action research programme of the Royal College of Art begins and evolves into the <u>Helen Hamlyn Centre for Design</u> to undertake design research and projects with industry that will contribute to improving people's lives.	European Institute for Design and Disability (EIDD) is created with the mission statement, "Enhancing the quality of life through Design for All." and "Good design enables, bad design disables."	Web Accessibility Initiative WAI starts after a World Wide Web Consortium (W3C) presentation at the White House. <u>Read Accessibility</u> is Good Business by the W3C.	The first version of Web Content Accessibility Guidelines <u>WCAG</u> are published by the World Wide Web Consortium, specifying key criteria for accessible web and digital technology design.

# A solution for inequality by design? Inclusive design re-awakens.

Microsoft Inclusive Design has fantastic resources for you to get started.

# Bias in AI and who's auto-complete?

Turkish uses the gender-neutral pronoun, “o.” Yet, when the Turkish sentences “o bir doktor” (top) and “o bir hemşire” (bottom) are entered into Google Translate, they translate into English as “he is a doctor” and “she is a nurse.”

—Princeton

via Princeton

# So recognize exclusion, and take action

To start, recognize exclusion

## Recognize exclusion.

### —Kat Holmes

If you don't believe it, visit [Congrats, you have an all male panel!](#)

Also check out the [4-hour podcast](#) Automattic Design leader **Ashleigh Axios** created with **Amy Choi** (Mashup Americans) **Ethan Zuckerman** (MIT Media Lab) on [Design and Exclusion](#) with **Aarron Walter** (InVision), **Maria Giudice** (Autodesk), **Paco Viñoly** (NextDoor), **Aminatou Sow** (TechLadymafia), **Anne Diaz** (Airbnb), **Andrew Sinkov** (Etsy)

And be curious about biased tech

Sorry, Alexa Is Not A Feminist

—[The Atlantic](#)

Amazon's Alexa Now Stands Up for Herself If You Use Sexist Language

—[Glamour](#)

Your company's Slack is probably sexist

—[Quartz](#)

How to Fight Sexism on Your Company's Slack

—[Life Hacker](#)

Change your avatar to an URM

And you'll want to change it to a cat thereafter once you experience the difference.

Enthoven began the experiment by swapping out her photo for an image of her cofounder, Eric Lu. She was surprised to see harassment drop to nearly zero.

—[Wired](#)

# Be sure to include others unlike yourself, and bring your friends

via TechJobsTour in Paintsville, KY

David Gibson, the superintendent of the Paintsville school district, had this idea that the company I'm at, Automattic, which is all remote, that people could be in Paintsville and get a full-time job without leaving the area. A lightbulb went off, that David's kids could do that, and live where their families have lived for generations, and still have an income and benefits. —Fast Company

# Design inclusively to expands your total addressable market

As Hollywood starts to reflect society's diversity, it's also making the highest grossing movies of all time.

Black  
Panther

Wonder  
Woman

Star  
Wars

The  
Foreigner

The Big  
Sick

There's so many movies from different points of view that are making a ton of money. Don't do it because it's better for society and representation, even though it is. Do it because you'll get rich. You'll get that promotion, right?

—Kumail Nanjiani at the Oscars

'Black Panther' Should Become Marvel's Latest Billion-Dollar Movie This Weekend —Fortune

# Recent movie review SMS from my 82-year old moms



# 2018 #DesignInTech Open Survey Credits

Pedro Sanoja, Alejo Romano, Victor Fernandez, Yawen Jang, Cam Rogers, Chi Ryan, mel, CATHERINE HILLS, Paul Strike, Chris Mc Lay, Hayden Dobson, Benson Low, Hass, CAJ, Joyce Seitzinger, Ben Hamley, RS, Glen Barry, Tom Key, SJD, M.Y., ZT, Drew P A Smith, Jessica Tong, Sam Hancock, VT, Christian Baker, Laura van Doore, Jake Deakin, notrevol, valentijn destoop, Mark Graham Dunn, Glauco Cardoso, Pedro Belleza, Romeu Biscaia Machado, Bubu, Paula Fehper, Cristian Mazzeo, Thiago Barcelos, Lucas Terra Cardial, Bruno Fischer, Duda Rodrigues, Andreia Bersot, LionelC, Tiago P. Taveira, Fabrício Astua, LMSM, FNazario, Melissa Ribeiro, Rafael Brandão, Dani Tavares, bani torricco, G0ntz, Rafael Fernandes, Georgi Kamov, Kevin Morris, Johnny Chauvet, Allyna Sagun, Ryan Neufeld, Adam Leon, Lenny Laurier, Aloke Pillai, Suds, Nuff, Matt Nish-Lapidus, Tyler Benning, Heidi McCulloch, Yabo, Kimberley Peter, Filippo Di Trapani, Myriam Picovschi, Julia Guimaraes, mCorby, Francis Gagnon, Marc-Oliver Gern, Jonas Altman, pak, Jacqueline P. Ashby, Kirill Vechtomov, ic, Justin Lim, Lynne Polischuik, Travis Gertz, Craig Cullimore, cs, Emily, Jenna B, Akshay Chauhan, Sim.S, Noman Sid, José Concha, Ariel Contreras @acontrerasv, Alejandro Urrutia, timworks.net, Misterymotion, Nicolas Ochoa, Koncarovski, Ivana Preiss, Antonin Pospisil, Carsten Nguyen Henriksen, JPT, Jesper Philip Sølvbørke, Daniel Gjøde, Stupid Studio, Thomas Madsen-Mygdal, Bo Madsen, Niels, Morten Lundholm, Troels Nørlem, Pärtel Vurma, Velvet, Monika Zych, PPoi, Niko Laitinen, Vesa Ahtiainen, John T, armansansd, Alexandre Crenn, Charlie Coucou, Charles Bail, Pierre-Denis Autric, Thomas Nicot, Frederique PAIN, Nicolas Marescaux, Chaker Bejaoui, Lise Kemen, David Duhamel, kliger, Matthieu Bousendorfer, j03£, Rachel Ilan, MASC, Helmut Ramsauer, Evgeny, A. Ribotta, Dawn Ahukanna, Florian Lohse, Philipp Schaefer, MSM, Michael, hiep, Fernando Galdino, Jochen Denzinger, Jenica Lewis, Dragomir Ralchev, Marc from Heimatdesign, Guergana, Markus Nowak, Marianne Guillen, Carolina, Yasmina Haryono, Jannes, Kilometer, Lew Freyholtz, CJC, KN, Axel Baumann, Daniel Echeverri, Michael, N, Agoston Nagy, David Udvardy, Saneef Ansari, Amal Tiwari, Saikat dutta, Anoop Chandra, Nandha, Mohit Sharma, Prateek Parijat, Pallavi Naik, Aradhana, Baskar Ganesan, PointBlank, Prob G, Sandheep, Sweta, Murthy Gollapudi, Prafull, Aadesh Mistry, Vispat, Gavin remedies, Arwin Brahma, Tanuja P., Kumar Murthy, NS, Guillermo Acevedo, Soo Basu, Anand, Nipun K. Gardodia, Somyeah, Abhishek Jayaprakash, Arganka, Red Lemonade Creative, Lara Hanlon, Hilary Kenna, Ivan Frantar, Ellis Boyle, Mark Swaine, mm, Eoin Smith, John Buckley, Almudena Blanch, Aidan Doré, Craig Phillips, Rui Eduardo, LH, Kostya Gorskiy, Chanan Greenblatt, Eric Hinz, Eyal Fendell, rainwiz, Antonio Civita, Alessandro Pollini BSD design, Luigi, Niccolò Magnani, Andrea Gaiardo, Luca Troisi, Carlo Cavedon, Lorenzo Ruggieri, Manuela Ciancilla, Giovanni Caruso, aldo fontana, Francesca Monti, Annalisa Angelini, Daniele Vitali, ka2, M. Tanaka, Kenji Mori, Itsumi Matsukawa, Yasuhiro Sakai, Bert Brautigam, Nathan Paterson, Toshiki Wada, Hajime Kuge, Hans Kurihara, Koichiro Eto, Fady Rostom, Anissal, samcy, Sylvain Vanderhaegen, Justin Farrugia, LA, Joram Patiño, H. McNamara, Polo Garcia, Wendy Johansson, Iliana Moreno Guzman, Oscar Zavala Hernandez, Jeroen Frumau, Zuzanna Skalska, 360Inspiration, Jos van Roosmalen, Patrick de Jong, Murat Akyol, Hielkje Zijlstra, Wilbert Baan, Bob van Luijt, Dylan Evans, Jenny Shen, Linda Mertens, David Linssen, Peter Boersma, AL, Anon, Brian Lucid, Georg, tristam sparks, Steph Creasy, Rildwan Olayemi Bello, Leif Knutsen, Tom gabriel johansen, Eric Haidara, CS, Eder Rengifo, Hope Joanne Dag-um, Eric Agoncillo Ambata, Maciej Mlynek, Ines Bravo, Sara Gago, Hugo Froes, JPR, Francisco Bordallo, Luis Madureira, Peter Anthony Martins, samuel rosario medina, Dan Baciu, Ovidiu Berdila, IR, Archie, Edison Chee, Amanda Arielle Lu, Lwjon, Anuradha Jain, Ben, Maik Lutze, Kimverlyn Lim, SL, LM, Jon Edwards, Francois Brill, Tefo Mohapi, Ali Ndlovu, J.M, J Y, Antonio Molin, Andres Lopez Josenge, @serrodsan, Claudio Lobos, M Lop, miscalzonzillos, Luis Eduardo Dejo, atriz, Pilar Saura, Marco Righetto, Manu Ageitos, Jesús Miguel Gimeno, @abrahamnavas, JCG, Carlos García Maganto, Dragon, AICS, Team PowerHorse, May O. Caballero, Martina Gobec, Andrea Picchi, Patrik Beskow, Allen Smith, Martin Willers, Vincent Garcia, Supermarjo, Zelia sakhi, Jared Fossey, Nirvana Soltani, Hannes Johansson, Diana Africano Clark, Serena Cangiano, Raphael Schaad, Dominic Wuffli, Sylvestre Lucia, Philipp Maul, Raimund Erdmann, Jules Skopp, Marie-France Bojanowski, Mihaly Keserü, Olivier Heitz, jj, Emre Girgin, Twikirize Switzin Tibz, Denys Kulyk, Alex Debkaliuk, Maksym Tkachuk, Ram Prakash Palaparty, TP, Riccie Audrey Janus, Robin Howie, Roland Whitehead, Jordan Harper, barry ainslie, Ryan Burke, JC, Marcela O, eebster, Brendan Kearns, John Williams Taylor, Adam Williams, Thai.H, Jon Rowlandson, Niklas Hagemann, Mr Nick James Turner, Jonathan Conway, Sergei Golubev, Christina Li, Sevil Rahimova, Stephen Wood xLab, Eli Symeon, Sophie Allcock, Alex Menczykowski, Sander Gyuris, IP, Jiri Jerabek, Kartik Poria, Christopher Gameson, bup, J Meijer, Giovanni Luperti, MC, QS, Alessio Cuccu, Mariana Morris, Tammie Lister, I Chhat, Aden Davies, Michelle Gerrard-Doyle, Konrad Pitale, Gfag8!, Les Hughes, Liam Hutchinson, Gabrielle Micheletti, MP, Luis Salinas, Shimbug, G Knowles Topham, Jeff Salanco, Matthew Gallagher, Dan Abelow, AV, Jared Stephens, Mark Loomis, David Wen, Chad Ostroff, Nick Cochran, Duncan Robertson, James Dow, Jodi Cutler, Peter Eckert, chris hammond, Erin Hauber, Hayley Hughes, KEM, Nick Tilden, TS, Meriah Garrett, Kara Miekina, Anthony Armendariz, Randomood, Dennis Eusebio, Shaun Bhargav, J. Dustin, Vogthorstar, Remote queen, Lance Willett, Kara DeFrias, Brent Summers, Ali Sarwat Hussain, Kelsey Lancaster, Flo Kat, Sara V, Jonathan Kies, Darin Marshall, Igor, Jim C-L, Alessandra B., Chris Wallace, Joshua smith, Visual Communicator, Florian Schommertz, Scott McManigal, seb, Bri, @shelton, Veronica Kovachi, Justin Ruckman, Jon Bell, Rutiger Poopinstalk, Kevin Bethune, Mark Uraire, Carlo Paolo Espiritu, Nicole Thayer, sylvia, Q.O.T.U. Design, inc., ANON, MH, Michael Sueoka, Matthew E. May, Shawn Johnson, Neil LaVigne, Michelle Wong, Alexa Roman, Patrick Fredrickson, Arturo Perez, RC, goodwinux, claudia bardales, Bryan Cheung, Paul Hanaoka, Marissa, Masako Ikegami, b zepeda, Michelle Chin, irene hoffman, BadGenius, Reed Reibstein, CMAINA, Joe Schram, Leslie Luo, Michael J. Morgan, Che Douglas, Ben Bausili, Joe Payne, Floyd Sanchez, Paul-Felix Montez, Tania Lili, Brian RS Ward, Creative Juggernaut, Russell Ong, Mercury Murphy, Lauren Hancock, Alex Yra, Evan Verdoia, Aaron, Houshang, Jay F, Jonathan Shariat, Neeharika gupta, Prithika, Laura Martini, Dddd, Jeff Z., Diego Rodriguez, Vinita Israni, Leigh Anne Miller, R. Mangrobang, musho, Ozy Urrutia, Christiana, Tara, Yuki Alzona, Daniel Castro, Alex Kim, Tom Illmensee, Michelle Koh, NB, Holly Marie Gibbs, JY, Darren Farrugia, George Chen, Maria Giudice, Ramya, Peter Cho, n/a, Gareth Kay, Dirk Cleveland, James Murnane, Jeff Zwerner, Florentin Hortopan, Julie Stanesco, Maria M Fabbri, NBL, Melinda, Gretared, Tyler Miller, Teddy Zmrhal, Meekal Bajaj, James Song, Alessandro Sabatelli, mo, Christian Talmage, Ann-Caryn Cleveland, Christine Park, bebe buckner, Ryan Fariñas, Michele Mizejewski, Steffan Schlarb, Vikram, Luan Chen, Vandy Meares, Andrew S, Todd Zaki Warfel, Arianna Orland, Mary Lukanuski, Vineeth Nair, Israel Nevarez, Brian Beaver, Sharon Cardinal, Diana Tobey, Kyle Bennett, Jsp, Daniela Steinsapir, Kasia Wyser-Pratte, Michael Polivka, Akira Motomura, Eric Fain, Kurt Varner, Genevieve Conaty, Laura Mattis, Siyuan Tu, Glenn Rawlinson, Tommy K, Benjamin Schwartz, Bruno Marinho, PKP, Hamza El-Falah, Jake Mac, Dan Harrelson, Stu Griffiths, AmeliaW, Caio, Joanna Ellis, Len, Alex Dixon, C. A. Stavridis, S. Jones, Vel Prakhantree, Marcelo G., DP Venkatesh, Ashleigh Axios, Jaymes Cloninger, Kit Oliynyk, Katherine M. Zhou, XF, Natalie Buda Smith, Jen Strickland, WTB, Sharif Elshinnawi, MH, Kendell Warner, Kyle Johnston, John Resman, Josh Kubicki, Jason Hargis, Ruzanna Rozman, Adam Rotmil, Michael Ellis, Stacy Kvernmo, Daniel R Farrell, Graphex, Jason P Belaire, Scot Przybylski, GRID Impact, Pete Kinser, J.H., Swan5280, David O'Connell, Peter Lloyd, MWK, Brad Baer, Robert T. Whyte, Jason Prunty, mm, Ryan, Devon Burgoyne, James Williams, Pete Fleming, Troy Lanchance, Kate Clayton, Tom McQuaid, jfm, David, Al Logiodice, Layne Jackson Hubbard, Rafael Guevara, Bri Piccaril, Nasty Gold Woman, Dipti Siddamsettiwar, Bryan Howell, Rich Hauck, Yoda, Jordan Jackson, Michelle Leonette, Jason Rincker, Catherine Shen, Sean Oakes, Danny Salvatori, Samantha Clark, Jose Coronado, Chino Wong, Dasami Moodley, Karyn Campbell, Michelle Knoernschild, Judy Wert, MT, Torry Colichio, Randy J. Hunt, Ilya Startsev, Syed Lagoon, B Reichler, Van Rais, Sean Ro, NXD, David Fisher, Mattias Wikman, SL, L. Batista, Juan Daniel Herrera, Gloria Kim, im good., JHMOTIVF, Ryan Haigh, Sandra Barron, Rochelle King, Jessica He, MP, Clay Wiedemann, Sumin Chou, Stephen Gates, Bumhan Yu, Daniel Gomez Seidel, Faye Lee, Jerlyn, SHANI SANDY, flomerboy, Richard Ting, Andrew (Ande) La Monica, Sandy Chen, Vincent Bahk, Adam, Isa Gouverneur, Stephanie Liu, Cheryl L. Oppenheim, Michael Keany, pnts, Anna Fine, wwl, Kathryn Simon, Jason Brady, Sarah Doody, Laura Simpson, M. Dulin, Kevin Smith, Gunther Chanange, Melanie O'Donnell, TJK, Karl van Turk, CDG, GG, Randy J. Hunt, Albert P, Jay Fichialos, Haijing Liu, Dennis Wong, Cathi Bosco, S.A. Meier, Jeff Golenski, Keith Instone, Milan Kocic, Stephen Szermer, Andy Davies, John Fitch, Not Sure, John Horstman, @jeremydwil, Melody Roberts, Nathan Lagacy, Katherine Luby, Steve Finikiotis, Jase Miller, CWR, David A. Townsend, Mark Rattin, Bill Bernahl, MG, mkbbooks, Chris Coffin, Karen Nickerson, Jeff Steffen, Daniel Orbach, MultiBiomech, Vanya Prokopovich, Chacko Poothicote, Daniel Marano, Isaac Girard, Jay Liu, jenniwon, CRH, Michelle Curtis, EthanLP, Tristan Harward, Leslie Bondaryk, Lisa deBettencourt, David Abbet, Meeta Mathur, Mel Choyce, Maria Matveeva, Miracle Tonic, Fahad Punjwani, Churu Yun, Luke Jones, Chris Blocher, Patrick Miller, Dale Prentiss, Mirekulous, Jared Fanning, Amy Huang, Kimberly C. Wolting, Sarah Brockett, Chris Chiles, Drew Lettner, Shane Ernest, Thomas Y., Michael Laviolette, Kevin Meyer, Andy Vitale, Alan Smith, Bob Marchant, Roel Uleners, Ashish Rao, Dylan Wilbanks, Jared R Davis, James Holt, Paola Reyes, Tim Whalin, Wolo, FARRUKH RAZA, EAL, Nico Nuzzaci, Blank, Lucas Colusso, Julie Larson-Green, Jenny Lam, Jerrod Larson, J. Lucero, Manali Gortekar, Savage Ewok, Andi Rusu, Omar Elfane, Toots MacAfee.

# Disclosure

This presentation has been compiled for informational purposes only and should not be construed as a solicitation or an offer to buy or sell securities in any entity.

The presentation relies on data and insights from a wide range of sources, including public and private companies, market research firms, and industry professionals. We cite specific sources where data are public; the presentation is also informed by non-public information and insights.

This is the third publication of the Design In Tech report. We will post any updates revisions or clarifications at <https://designintechreport.wordpress.com>

Please report any errors to @johnmaeda on Twitter. Thank you! John Maeda has minor equity positions as an investor in certain companies referenced in the presentation [maedastudio.com/startups](http://maedastudio.com/startups).