Design
In Tech
Report 2017

https://designintechreport.wordpress.com
With Special Thanks To

Michael Abbott (KPCB), Matt Mullenweg (AUTOMATTIC), Mark Armstrong (AUTOMATTIC)
and 800+ designers and design founders, managers, executives, agency leaders, and individual contributors.

2017 DiT Team

JACKIE XU, AVIV GILBOA, JUSTIN SAYARATH, FATIMAH KABBA, JOHN MAEDA
The 2015 Report explained design's rise in value to tech as due to mobile devices and the mass-consumerization of computing. We moved from “tech-led” to “experience-led” digital products as services on smartphones took over and gave access to everyone.

The 2016 Report showed peak growth in interest by venture capital firms in design, and highlight significant growth in the acquisition of design agencies by consulting firms like McKinsey & Co and Accenture. Google emerged as a new leader in design.

The 2017 Report frames computational design as a key driver of accelerated growth, with inclusive cultures @work as vital for tech businesses hoping to lead in design.
Observations

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

At top business schools, design thinking is moving into the curriculum — driven by market demand. Both McKinsey & Co and IBM have recently made appointments at their most senior levels for designers.

Adopting an inclusive design approach expands a tech product’s total addressable market. Computational designers remain in demand at technology companies of all sizes and maturity levels. Chinese design in tech principles and practices are leading the world, but are often overlooked.

Design tool companies and design community platforms occupy new positions of value for tech.

Voice- and chat-based interfaces are grounded in mental models that don’t require a visual representation.

https://designintechreport.wordpress.com
Sections Overview

1. Computational Design
   What is “Computational Design” and why does it matter to business + tech?

2. DESIGN → DE$IGN
   What’s happening in startups and in M&A?

3. Design Needs Designers
   How does one hire this kind of talent?

4. Shaping Voice
   What is the business value of “Inclusive Design”?

5. Design Is By Nature, Inclusive
   Why does inclusion go together with design?
There are Three Types of Design

The last report reviewed the difference between Classical and Computational Design. This was somewhat controversial, but we review it here again.

**DESIGN: “CLASSICAL DESIGN”**
There's a right way to make what is perfect, crafted, and complete.

**BUSINESS: “DESIGN THINKING”**
Because execution has outpaced innovation, and experience matters.

**TECHNOLOGY: “COMPUTATIONAL DESIGN”**
Designing for billions of individual people and in realtime, is at scale and TBD.

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

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

Driver/ the impact of Moore’s Law, mobile computing, and the latest tech paradigms.
Both the 2015 and 2016 Design in Tech Report pointed to the emergence of "design thinking" as entering the conscious of big business — heralded by the covers of both Harvard Business Review and Bloomberg Businessweek featuring design. "Design Thinking" is different from "Classical Design" in both how it is practiced and the final outcome: the latter results in an artifact to hold in one's hands, whereas the former results in consensus between multiple stakeholders.

<table>
<thead>
<tr>
<th>CLASSICAL DESIGN</th>
<th>DESIGN THINKING</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emphasis On</td>
<td>Practice</td>
</tr>
<tr>
<td>Raw Materials</td>
<td>Paper, Wood, Metal, and Anything Physical</td>
</tr>
<tr>
<td>Goal Orientation</td>
<td>Ship a Perfect Product/Object</td>
</tr>
<tr>
<td>Impact is Evaluated By</td>
<td>Acceptance, Adoption, and Awards</td>
</tr>
<tr>
<td>Involves Primarily</td>
<td>Classical Designers</td>
</tr>
<tr>
<td>Skills With Tools Are Generally</td>
<td>Hands and Laws of Physics</td>
</tr>
<tr>
<td>Grounded In</td>
<td>Mind and Organizational Sciences</td>
</tr>
</tbody>
</table>

Overlapping example of these two kinds of design: A design consultancy like IDEO, Frog, or a B-school program like Yale SOM, or a classic consultancy like McKinsey, Accenture, BCG.
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.

### Overlapping example of these two kinds of design: A smartphone, laptop, robot, and any human-facing IoT device.

### Review:

#### Classical Design vs Computational Design

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

![Section 1: Computational Design](Section 1: Computational Design)
Review:
The Origins of Computational Design

The 2016 Design in Tech Report highlighted four key pioneers of computational design — all leaders who brought Classical Design into the domain of Computer Science with a uniquely humanistic approach (in contrast to a purely technical approach, which was dominant at the time).

Pioneers of Computational Design

- **GILLIAN CRAMPTON-SMITH**
  Royal College of Art
  Computer-Related Design and Ivrea Institute

- **RED BURNS**
  NYU Tisch School
  Interactive Telecommunication Program

- **JOY MOUNTFORD**
  Apple Human Interface Group,
  Interval, Yahoo!, Akamai

- **MURIEL COOPER**
  MIT Media Lab
  Visible Language Workshop

TODAY

- Codepen [2014]
  ALEX VAZQUEZ, TIM SABAT, AND CHRIS COYIER

- DrawBot (DesignRobots) [2003]
  JUST VAN ROSSUM, ERIK VAN BLOKLAND, AND FREDERIK BERLAEN

- Processing [2001]
  BEN FRY, CASEY REAS, AND DANIEL SHIFFMAN

- Design By Numbers [1999]
  JOHN MAEDA

The 1999 pioneers:

- **JOHN MAEDA**
  NYU Tisch School Interactive Telecommunication Program

- **DRAWBOT (DESIGNROBOTS)**
  JUST VAN ROSSUM, ERIK VAN BLOKLAND, AND FREDERIK BERLAEN

- **PROCESSING**
  BEN FRY, CASEY REAS, AND DANIEL SHIFFMAN

- **DESIGN BY NUMBERS**
  JOHN MAEDA

Section 1: Computational Design
In Practice:
Design is Blending with Engineering Talent

2/5

Designers are involved in code development

In the 2016 Design in Tech Report we shared how 1/3 of the design leaders we surveyed had formal engineering/science training. It said to me that a considerable amount of "hybrid" talent is out there in the professional world, that wasn’t the case a few decades ago.

Last month I surveyed a group of designers and devs at Automattic (note the double-T) with regards to their Javascript expertise. In the graph below you can see two “humps” — to the right is the developers, but to the left is the designers.

Since 2015, WordPress developers have been encouraged to master Javascript from WP’s native PHP.

"I can read fluently, but I can’t write fluently.”
Where do new ideas come from? The answer is simple: differences. Creativity comes from unlikely juxtapositions.

NICHOLAS NEGROPONTE
Professor and Co-Founder, MIT Media Laboratory
By the Numbers

DE$IGN

If the design partner role is to help startups realize the full potential value of design, the return on investment is the ultimate barometer of success in venture capital.
## Design M&A Activity

Over 70 design agencies have been acquired since 2004. >50% of which have been acquired since 2015

### 2004 - 2012

<table>
<thead>
<tr>
<th>COMPANY</th>
<th>ACQUIRED BY</th>
</tr>
</thead>
<tbody>
<tr>
<td>2004 Frog Design</td>
<td>Flextronics</td>
</tr>
<tr>
<td>2007 Doblin</td>
<td>Monitor</td>
</tr>
<tr>
<td>2009 Bigstock</td>
<td>Shutterstock</td>
</tr>
<tr>
<td>2010 TAT</td>
<td>Rim</td>
</tr>
<tr>
<td>2011 Sofa</td>
<td>Facebook</td>
</tr>
<tr>
<td>2011 Typekit</td>
<td>Adobe</td>
</tr>
<tr>
<td>2011 Method</td>
<td>Globallogic</td>
</tr>
<tr>
<td>2011 Helicopter</td>
<td>One Kings Lane</td>
</tr>
<tr>
<td>2012 Maaike</td>
<td>Google</td>
</tr>
<tr>
<td>2012 Bolt Peters</td>
<td>Facebook</td>
</tr>
<tr>
<td>2012 80/20</td>
<td>Square</td>
</tr>
<tr>
<td>2012 Cuban Council</td>
<td>Google</td>
</tr>
<tr>
<td>2012 Behance</td>
<td>Adobe</td>
</tr>
</tbody>
</table>

### 2013 - 2014

<table>
<thead>
<tr>
<th>COMPANY</th>
<th>ACQUIRED BY</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013 Hot Studio</td>
<td>Facebook</td>
</tr>
<tr>
<td>2013 Fjord</td>
<td>Accenture</td>
</tr>
<tr>
<td>2013 Jet Cooper</td>
<td>Shopify</td>
</tr>
<tr>
<td>2013 Banyan Ranch</td>
<td>Deloitte</td>
</tr>
<tr>
<td>2013 Hook &amp; Loop</td>
<td>Infor</td>
</tr>
<tr>
<td>2013 17FEET</td>
<td>Google</td>
</tr>
<tr>
<td>2013 Hattery</td>
<td>Google</td>
</tr>
<tr>
<td>2013 Mixel</td>
<td>Etsy</td>
</tr>
<tr>
<td>2014 Carbon Design</td>
<td>Oculus/Facebook</td>
</tr>
<tr>
<td>2014 Gecko Design</td>
<td>Google</td>
</tr>
<tr>
<td>2014 Adaptive Path</td>
<td>Capital One</td>
</tr>
<tr>
<td>2014 Reactive</td>
<td>Accenture</td>
</tr>
<tr>
<td>2014 Flow Interactive</td>
<td>Deloitte</td>
</tr>
<tr>
<td>2014 Optimal Experience</td>
<td>PWC</td>
</tr>
<tr>
<td>2014 Cynergy Systems</td>
<td>KPMG</td>
</tr>
<tr>
<td>2014 S&amp;C</td>
<td>BCG</td>
</tr>
<tr>
<td>2014 Ultravisual</td>
<td>Flipboard</td>
</tr>
<tr>
<td>2014 Aviary</td>
<td>Adobe</td>
</tr>
</tbody>
</table>

### 2015

<table>
<thead>
<tr>
<th>COMPANY</th>
<th>ACQUIRED BY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teehan+Lax</td>
<td>Facebook</td>
</tr>
<tr>
<td>Spring Studio</td>
<td>BBVA</td>
</tr>
<tr>
<td>Lunar Design</td>
<td>McKinsey</td>
</tr>
<tr>
<td>Monsoon</td>
<td>Capital One</td>
</tr>
<tr>
<td>DesignIt</td>
<td>Wipro</td>
</tr>
<tr>
<td>Seren</td>
<td>Ernst &amp; Young</td>
</tr>
<tr>
<td>Mobjento</td>
<td>Deloitte</td>
</tr>
<tr>
<td>Lapka</td>
<td>Airbnb</td>
</tr>
<tr>
<td>Catalyst</td>
<td>Cooper* &lt;consolidation</td>
</tr>
<tr>
<td>Akta</td>
<td>Salesforce</td>
</tr>
<tr>
<td>Chaotic Moon</td>
<td>Accenture</td>
</tr>
<tr>
<td>PacificLink</td>
<td>Accenture</td>
</tr>
<tr>
<td>Farm Design</td>
<td>Flex</td>
</tr>
<tr>
<td>Tactel</td>
<td>Panasonic Avionics</td>
</tr>
<tr>
<td>Fotolia</td>
<td>Adobe</td>
</tr>
</tbody>
</table>

*Software tool companies and creative communities.*

[https://designintechreport.wordpress.com](https://designintechreport.wordpress.com)
## Design M&A Activity Continued

### 2016 [PART ONE]

<table>
<thead>
<tr>
<th>COMPANY</th>
<th>ACQUIRED BY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Slice of Lime</td>
<td>Pivotal</td>
</tr>
<tr>
<td>Resource/Ammirati</td>
<td>IBM</td>
</tr>
<tr>
<td>ecx.io</td>
<td>IBM</td>
</tr>
<tr>
<td>Aperto</td>
<td>IBM</td>
</tr>
<tr>
<td>IDEO</td>
<td>Kyu Collective *minority</td>
</tr>
<tr>
<td>Fahrenheit 212</td>
<td>Capgemini</td>
</tr>
<tr>
<td>Heat</td>
<td>Deloitte</td>
</tr>
<tr>
<td>Gravitytank</td>
<td>Salesforce</td>
</tr>
<tr>
<td>Fake Love</td>
<td>New York Times</td>
</tr>
<tr>
<td>Karmarama</td>
<td>Accenture</td>
</tr>
</tbody>
</table>

### 2016 [PART TWO]

<table>
<thead>
<tr>
<th>COMPANY</th>
<th>ACQUIRED BY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carbon12</td>
<td>McKinsey</td>
</tr>
<tr>
<td>Mokriya</td>
<td>Nagarro</td>
</tr>
<tr>
<td>Uselab</td>
<td>Deloitte</td>
</tr>
<tr>
<td>Tiny Hearts</td>
<td>Shopify</td>
</tr>
<tr>
<td>Boltmade</td>
<td>Shopify</td>
</tr>
<tr>
<td>VeryDay</td>
<td>McKinsey</td>
</tr>
<tr>
<td>Waybury</td>
<td>InVision</td>
</tr>
<tr>
<td>Napkin</td>
<td>InVision</td>
</tr>
<tr>
<td>Silver Flows</td>
<td>InVision</td>
</tr>
<tr>
<td>Macaw</td>
<td>InVision</td>
</tr>
<tr>
<td>Muzli</td>
<td>InVision</td>
</tr>
</tbody>
</table>

### 2017

<table>
<thead>
<tr>
<th>AGENCY</th>
<th>ACQUIRED BY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Idean</td>
<td>Capgemini</td>
</tr>
<tr>
<td>Unity&amp;Variety</td>
<td>Salesforce</td>
</tr>
<tr>
<td>Sequence</td>
<td>Tiny</td>
</tr>
<tr>
<td>Dribbble</td>
<td>Wix</td>
</tr>
<tr>
<td>DeviantArt</td>
<td></td>
</tr>
</tbody>
</table>

**Four**

Design Partners were elected in the last year at McKinsey & Co [5 Total Design Partners].

**Three**

IBM Distinguished Designers are corporate-appointed for the first time.

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Software tool companies and creative communities. [https://designintechreport.wordpress.com](https://designintechreport.wordpress.com)
@justinsayarath @tberno
When ex-Apple designer and startup founder/CEO, Mark Kawano, was asked if he was glad that he launched Storehouse even though it closed in 2016, he responded unhesitatingly: “Absolutely.”

The overwhelming majority of startups fail to make it out of their seed funding phase. And no founder claims that it is an easy path to success in the startup world. It is a tough, complicated journey to undertake as an entrepreneur which pays immense tolls on the individual and their families and friends. But they don’t let failure ruin their optimism.

Top 20 Reasons Startups Fail

<table>
<thead>
<tr>
<th>Reason</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Market Needed</td>
<td>42%</td>
</tr>
<tr>
<td>Ran Out of Cash</td>
<td>29%</td>
</tr>
<tr>
<td>Not the Right Team</td>
<td>23%</td>
</tr>
<tr>
<td>Got Outcompeted</td>
<td>19%</td>
</tr>
<tr>
<td>Pricing/Cost Issues</td>
<td>18%</td>
</tr>
<tr>
<td>Poor Product</td>
<td>17%</td>
</tr>
<tr>
<td>Need/Lack Business Model</td>
<td>17%</td>
</tr>
<tr>
<td>Poor Marketing</td>
<td>14%</td>
</tr>
<tr>
<td>Ignore Customers</td>
<td>14%</td>
</tr>
<tr>
<td>Products Mis-Timed</td>
<td>13%</td>
</tr>
<tr>
<td>Lose Focus</td>
<td>13%</td>
</tr>
<tr>
<td>Disharmony on Team/Investors</td>
<td>13%</td>
</tr>
<tr>
<td>Pivot Gone Bad</td>
<td>10%</td>
</tr>
<tr>
<td>Lack Passion</td>
<td>9%</td>
</tr>
<tr>
<td>Bad Location</td>
<td>9%</td>
</tr>
<tr>
<td>No Financing/Investor Interest</td>
<td>8%</td>
</tr>
<tr>
<td>Legal Challenges</td>
<td>8%</td>
</tr>
<tr>
<td>Don’t Use Network/Advisors</td>
<td>8%</td>
</tr>
<tr>
<td>Burn Out</td>
<td>8%</td>
</tr>
<tr>
<td>Failure to Pivot</td>
<td>7%</td>
</tr>
</tbody>
</table>

Startups Embody “Productive” Failure

@asanwal

Takeaway:

CB Insights / Anand Sarwal
The “Designification” of Venture Capital

Fund$°

Last year’s Design in Tech Report predicted that there would be more funds started by designers in the future. And with the launch of two new funds — one co-founded by designer Garry Tan and another to soon be announced — it appears that it’s already beginning.

<table>
<thead>
<tr>
<th>Early-Stage Funds that are Design and/or Inclusion Oriented**</th>
<th>Later-Stage Funds that are Design and/or Inclusion Oriented**</th>
</tr>
</thead>
<tbody>
<tr>
<td>500 Startups</td>
<td>Accel Partners</td>
</tr>
<tr>
<td>Bloomberg Beta</td>
<td>Bessemer Venture Partners</td>
</tr>
<tr>
<td>Collaborative Fund</td>
<td>Google Ventures</td>
</tr>
<tr>
<td>Cowboy Ventures</td>
<td>Greylock Partners</td>
</tr>
<tr>
<td>Designer Fund</td>
<td>Khosla Ventures</td>
</tr>
<tr>
<td>Homebrew</td>
<td>Kleiner Perkins Caufield &amp; Byers</td>
</tr>
<tr>
<td>Kapor Capital</td>
<td>New Enterprise Associates</td>
</tr>
<tr>
<td>KPCB Edge</td>
<td>Sequoia Capital</td>
</tr>
<tr>
<td>Rivet Ventures</td>
<td>True Ventures</td>
</tr>
<tr>
<td>Slow Ventures</td>
<td></td>
</tr>
<tr>
<td>Y Combinator</td>
<td></td>
</tr>
</tbody>
</table>

** have (or had) a designer on their team, or have a stated inclusion focus.

NEW Backstage Capital / March 2016
Arlan Hamilton
“Hamilton is one of the first LGBT black women to start a venture capital fund.”

NEW Initialized Capital / October 2016
Alexis Ohanian and Garry Tan
“We’re founders who are engineers, designers, and product people.”
Trend: Designers Remain in High Demand

+65% Y/Y

According to LinkedIn the highest echelon of the technology industry is vying for more design talent - Facebook, Google, and Amazon have collectively grown art and design headcount by 65% in the past year - with much headroom to hire more.

SOURCE
NEA Future of Design Survey 2016

Design-Centric: Design was "important" or "very important" to their business. Committed: Have a designer as a co-founder. Mature: Have more than $20m in funding and at least 20 designers on staff. Unicorn: Design-centric + Have a valuation in excess of $1B.
Trend: Design Thinking Proliferating Into Business Schools

Top business schools have student-led design clubs, which are pushing the curriculum in b-schools to shift as well.

"The fundamental profile of designers is beginning to shift as traditional markets begin to value design as a strategic lever."

VIA KPCB VENTURED

Designers Jessica Helfand and Michael Bierut join the faculty of Yale SOM / July 2016

STANFORD GRADUATE SCHOOL OF BUSINESS
Design Thinking Bootcamp: From Insights to Innovation

HARVARD BUSINESS SCHOOL
i-Lab Design Thinking & Innovative Problem Solving

INSEAD
Innovation by Design Programme

UC BERKELEY HAAS
Design Thinking for Business Innovation

UVA DARDEN
Specialization in Design Thinking and Innovation

MIT SLOAN
Product Design and Development

YALE SCHOOL OF MANAGEMENT
Design and Management
Trend:
There’s No Clear Winner Yet For Tools In Computational Design

“It’s the Wild West for managing the files that designers generate. Dropbox is the clear winner, though GitHub does surprisingly well. Overall, it’s clear that not a single design-specific solution has taken hold here.”

KHOI VINH

What is your primary tool for interface design? (2015)
1. Sketch
2. Photoshop
3. HTML/CSS

What tools do you use for project management? (2015)
1. Other
2. Slack
3. Trello

What is your primary tool for prototyping? (2015)
1. HTML/CSS
2. Invision
3. Other

1. Dropbox
2. Github
3. Google Drive

A New Generation of Computational Design Tools are Emerging

SOURCE
2015 Designer Tools Survey
## Trend:
Creative Communities Are A Secret Ingredient

### Five
Creative community acquisitions in the last five years. There’s likely going to be more.

*It’s important to remember that creative communities are generally “not for sale” in a traditional way. Membership is primarily voluntary, and it is in the pursuit of a common good as the primary driving factor.*

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>Shutterstock</td>
<td>Adobe</td>
<td>Adobe</td>
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<tr>
<td>Bigstock</td>
<td>Muzli</td>
<td>Fotolia</td>
</tr>
<tr>
<td>Invision</td>
<td>Deviant Art</td>
<td>Dribbble</td>
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<tr>
<td></td>
<td>Acquired: 2017</td>
<td>Acquired: 2017</td>
</tr>
<tr>
<td></td>
<td>Wix</td>
<td>Tiny</td>
</tr>
</tbody>
</table>
Trend: Designers Are Hungry For Capital

Of designers surveyed would start a company if they had access to venture capital / other funding, in ranked order:

1. **Product Studio** →
2. Consumer Startup
3. Enterprise Startup

"The Digital Product Studio blends three components: Consultancy, Venture & Own Product. Each feeds and informs the other in a powerful virtuous circle of network, experience, funding, brand, craft, and talent."

*Jules Erhardt, in 2016 State of the Digital Nation*
China

China Is A Major Force in Designer Co-Founded Companies

Three Designer Co-Founded Chinese Companies Have A Combined Market Cap Of Over $300B

- Alibaba
  Two of the eighteen co-founders are designers

- Visual China
  Four of the seven co-founders are designers

- Xiaomi
  Two of the eight co-founders are designers

Designer Co-Founded and Venture-Backed Startups Emerging In China

- Meitu Xiuxiu
  A selfie photo editor app and platform

- Innomake
  Design-driven smart transportation project

- Mogujie
  An online fashion e-commerce platform and community

- Youzan
  An e-commerce application in WeChat app store

- Xiachufang
  A community to share cooking recipes

- Taihuonao
  A design-driven innovative community and incubator

- Tezign
  A platform based design and creative talent solution

17 M

Designers in China with 0.5 million design graduates every year.
China

Four Trends From A Designer CEO’s Viewpoint

QR Codes

WeChat embeds QR code reader as the most frictionless means for offline interaction. Offline interactions let you easily LATER scan QR code for payment, visiting a site, adding a friend, etc.

Voice

WeChat lets people leave up to 60 second voice messages. People are holding the speak button on WeChat and speak to the cell phone everywhere. It’s leading to micro classes, and micro Q&A apps.

Transportation

Hub-less bicycle sharing has become app-enabled so you can pick up a bicycle anywhere. The app unlocks the bike with its built-in chip, solid tires, and is chain-less.

FU × AR

In the spring festival just passed, 1 billion Chinese mobile users scan the Chinese character “福” (good fortune) that appears in offline scenes to collect “福” in Alipay.

“… software makers in China are far from being mere hawkers of pale, tasteless knockoffs forced onto the unsuspecting public living behind the Firewall.”

DAN GROVER, IN MORE CHINESE MOBILE UI TRENDS

Halbo Lei / Co-founder+CEO at Taihuoniao, Ling Fan / Founder+CEO of Tezign, Professor Min Wang / CAFA
Design Needs Designers

“Capital is being superseded by creativity and the ability to innovate — and therefore by human talents — as the most important factors of production. If talent is becoming the decisive competitive factor, we can be confident that capitalism is being replaced by ‘talentism’...

-KLAUS SCHWAB
Founder of the World Economic Forum
In 2016, the largest US-based national designer association AIGA issued a study in collaboration with Google to reveal a sentiment shift for its future towards digital and interactive forms of design.

**Top 10 words to describe the Future of Design**

Size is proportional to popularity

- **Digital**: 605
- **Interactive**: 300
- **Simple**: 231
- **Clean**: 145
- **Inclusive**: 125
- **Human**: 109
- **Exciting**: 106
- **Innovative**: 101
- **Experience**: 94
- **Size**: 90

**LEAST SATISFIED DESIGNERS**

- Publishing (74%), Print Design (74%), Architecture (71%)

**MOST SATISFIED DESIGNERS**

- Industrial/Product Design (83%), Brand Strategy (82%), Digital Design (82%)

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**SOURCE**

AIGA x Google Design Census 2016

@AIGA x GoogleText
Accelerated Learning:
Teaching Yourself Online

86% of students surveyed say they learned their digital skills from resources outside their coursework.

The average program in design's primary area of expertise lies in Classical Design instead of Computational Design. Furthermore, their traditional emphasis is on individual creation (versus teamwork), intuition-driven work (versus testing), and eschewing business thinking (as equivalent to "selling out").

Free Options

Inexpensive Options

Tuition Options
More than Design:

Code is not the only unicorn skill

Programs

Design Schools that include Writing degrees or offer Writing and Content Strategy focused coursework

1. School of Visual Arts IXD MFA
2. Otis College of Art and Design MFA
3. Ringling College of Art and Design BFA
4. Savannah College of Art and Design BFA/MFA

Verbal Design

“We talk about the power of words—both content and style—all the time. When it comes to friendships, romance, work dynamics, and, dare we even mention it—though nothing is more telling, more relevant—politics, words have the power to change our opinions, incite action, divide or unify us, move us. Words can shape reality.”

Jennifer Van

Words as Material

“I think of design as a process of articulation. We join together to express an idea in a coherent form. We bring ideas to life. We connect the dots or build bridges for our users. That often means being specific about what a product does, who it’s for, why it matters, and how it works. We have to trek through a pile of ambiguity to do this.”

Nicole Fenton

Why UX Design is a Lot Like Writing

“Here’s where I’d like to draw the parallel with writing—because a core skill of the interaction designer is imagining users (characters), motivations, actions, reactions, obstacles, successes, and a complete set of “what if” scenarios.”

Susan Stuart
The Design Education Gap:

Acquiring Data, Business, and Leadership skills beyond the classroom

The top 3 skills needed by designers in practice are not available to them as basic coursework in education as a designer.

<table>
<thead>
<tr>
<th>Desired design education biases</th>
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<tbody>
<tr>
<td>Understanding business and finance</td>
</tr>
<tr>
<td>Using research and analytics to design</td>
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<tr>
<td>Leadership and teamwork</td>
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</tr>
</tbody>
</table>

Business and finance skills are desired the most by graduates, + research and analytics skills too.
46% of designers surveyed say that their highest ranked design leader reports to the CEO. 2nd highest (at 31%) is VP/Head of Product.

Orgs: There’s No Single, Perfect, Design Organizational Structure

Section 3: Design needs Designers
Orgs:

Where Design Reports Changes Based Upon Company Size
Orgs:

From Annual Design In Tech Report Sentiment Survey

70%
Of agencies have a single holistic design team that includes designers who focus on brand/comms/marketing.

50%
Of companies have a single holistic design team. The other half splits designers across marketing and product.

Impact and lacking challenging work is the #1 factor for designers switching jobs

Average Tenure
Agency = 4 years
In-House = 2.4 years
Independent Contractors = 3.8 years
Shaping Voice

I don't make songs for free. I make them for freedom.

CHANCE THE RAPPER

Blessings in Coloring Book, 2016
Blogs Brought New Voices To The Web

23 Blogs in 1999
50M Blogs in 2006

Social media = blogging

Weekly Usage by Percentage

- Facebook: 70%
- Instagram: 32%
- Twitter: 30%
- YouTube: 25%
- Pinterest: 25%
- TikTok: 18%
- LinkedIn: 17%

The democratization of influence

27% of the internet is powered by WordPress

Section 4: Shaping Voice
Design is:
Less Open These Days

8 of 10
Smart phone apps are owned by Google or Facebook, and when mobile devices are used there is 20% chance the person is engaging the Facebook app.

“The open architecture of the web led to an incredible era of experimentation. Many startups were controversial when they were first founded. What if AOL or some other central gatekeeper had controlled the web, and developers had to ask permission to create Google, YouTube, eBay, Paypal, Wikipedia, Twitter, Facebook, etc. Sadly, this is where we’re headed on mobile.”

CHRIS DIXON
“The Decline of the Mobile Web”
Design is:

Attention to Detail, but
Context is Everything

Design is concerned with all the details that make an experience something that is spectacular and memorable. That said, these days it isn’t an easy task to achieve given how devices can vary and how browsers can interpret code in a variety of unpredictable ways. But the greater context in which these experiences come to be need to be considered.

Variability in Browsers

Using caniuse.com to see if a particular CSS descriptor works across browsers.

Variability in Devices

How and whether people hold different device types, by Steven Hoober

Section 4: Shaping Voice
Often in how design is talked about with regards to the screen, the topic of "how it looks" dominates the main discussion. However, the one design trend with the most significance today for web content creators is an invisible one: *Will my page get found?* Which means designing for the non-human viewer, too.

**Design Trends**  
Authors: Loredana Papp-Dinea | Co-Author: Mihai Baldean

- Semi-Flat Design
- Cinemagraphs
- More 3D
- Animations
- Landing Pages
- Geometric Shapes
- Courageous Colors
- Innovative Scrolling and Parallax
- Color Transitions
- Mobile Browsing
- Custom Graphics and Illustrations
- Creative use of neutral space and Grid
- Storytelling
- Lazy Loading
- Split Content
- Full-Screen Forms
- Videos Everywhere
- SEO is Important
- Hidden Navigation
- Tiny Design Details

*Designers are not only optimizing for user experience, but are simultaneously optimizing for non-human experience.*
Design is:

Now A Lot of Talk

Chat-based interfaces are grounded in mental models that don’t require a complex graphical representation and navigation system.

1B
Facebook Messenger Users

846M
WeChat Users

Conversational interfaces are grounded in the original CLI (Command Line Interfaces) and are a bit retro, but effective.
Prior to 2012, the average error rate for image recognition was 28% and for speech recognition it was 26%. After ML, the average error rate for image recognition became 7% and for speech reco 4%.

“Voice will not replace the screen”

JAKOB NIELSEN [2003]

The Arrival of Machine Learning

BENEDICT EVANS [2012]

5.3M

Amazon Echo’s sold

AMAZON.COM [2016]
Help Wanted:
Designers In Security

$150K—200K/yr

The cost for protection against a sophisticated DDoS attack. For an individual journalist, it’s a prohibitive one that threatens the future of the Open Web.

Today’s connected technology products and services make us more vulnerable than ever before - it’s incumbent upon designers to build product features and UX that call out and protect against those vulnerabilities for end users. Bottom line — you don’t need to be a cyber expert to be a designer in security. Learn more about non-profit organization Simply Secure.

“Privacy and security matter, and if you care about any part of the Internet then you need to care about security, because there are so many risks — including IoT related risks these days. Designers are needed to make the complex challenges of security actionable and understandable. It's a great opportunity for design leadership: complex problems with multiple stakeholders and an urgent need for human-centered thinking.”

AME ELLIOTT
Design Director of Simply Secure
Design Is By Nature Inclusive

“By recognizing exclusion we can start to build empathy for people who interact with unwelcoming designs every day of their lives.”

KAT HOLMES, IN DESIGN.BLOG
Principal Design Director, Inclusive Design at Microsoft
**A Shift:**

Moving towards inclusivity

Historically speaking, technology products weren’t designed with inclusivity in mind because the users of the products were generally the makers of the products. The number of people using computers used to be very small. However today, due to smart phone proliferation, everyone is now using computers. To design for everyone, we need to now think and work more inclusively than ever before.

### Section 5: Design is by Nature, Inclusive

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>June 2016</td>
<td>More Airbnb Customers Are Complaining About Racism.</td>
<td>A. W., The Economist</td>
</tr>
<tr>
<td>Aug 2016</td>
<td>Clearly Snapchat Doesn’t Get What’s Wrong With Yellowface.</td>
<td>Davey Alba, Wired</td>
</tr>
<tr>
<td>Aug 2016</td>
<td>How Nextdoor reduced racist posts by 75%</td>
<td>Kashmir Hill, Fusion</td>
</tr>
<tr>
<td>Sep 2016</td>
<td>Airbnb CEO: “Bias and Discrimination Have No Place” Here.</td>
<td>Alex Fitzpatrick, Time</td>
</tr>
</tbody>
</table>

**Survey**

Companies trending upwards in design perception:

1. Airbnb
2. Google
3. Slack
4. Microsoft
A Tool: Microsoft Inclusive Design Toolkit

15,000+

Downloads of the Microsoft’s inclusive toolkit since September of 2015, with 23% of those downloads occurring since the start of the year. The toolkit consists of the manual, activities, and videos that have been used to facilitate a range of workshops on inclusive design in South America, Asia, Europe, and all over the United States.

IBM’s Accessibility Handbook has had > 50K views and 10K paper copies distributed to date.
Inclusive Design is Good Business

90% Is having a more diverse design team important to you, personally?

Of designers surveyed answered YES. 8% were INDIFFERENT. 2% were NO.

As products and services in our lives become more personalized, there is a growing need for the teams that build products to look and feel like the users on the other side. Recruiting and retaining diverse teams is essential for inclusive design — it’s more important than ever before.

2016 DESIGN IN TECH REPORT

The Conversation

“We're already very diverse. When diversity becomes part of the culture you don't have to manufacture it.”

“We haven't talked about this and there are more pressing priorities.”

“It's very diverse already and we're pushing design into completely uncharted areas in terms of geography and industry.”

“ Biggest issue is diversity outside of the design team. Design team is not the problem.”
One of the things I have learned about effective decision making is that the best decisions are often made by diverse groups of people. Saying or hearing these words is magic: That's really interesting, I had never thought of it that way before. Thank you.

MARY MEEKER
Internet Trends Report Founder and KPCB Partner
What is Design? It’s about business. It’s about people. It’s about technology. It’s now about digital technology — which touches a lot of people. And it’s now about a lot of people unlike yourself since it is in the millions of people. Because it involves so many people today, design responsibly.

Valerie Casey invites you to start a Creative Power Day in your community.
Disclosure

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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.