



The Future of Work ~~Jobs~~

Jack Powers

International Informatics Institute

Institute for Career & Technical Education

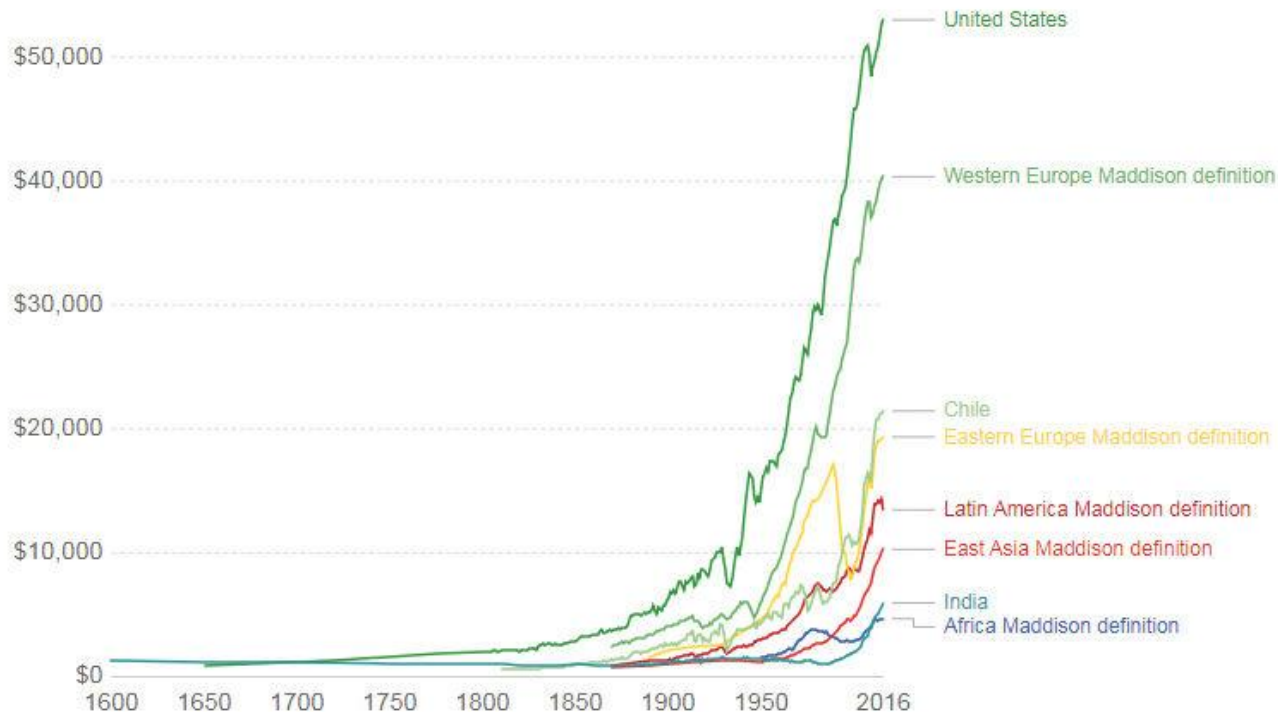
NYC Advisory Council for Career & Technical Education

Global Economy

Average real GDP per capita across countries and regions

The measures are adjusted for inflation (at 2011 prices) and also for price differences between regions (multiple benchmarks allow for cross-country and regional income comparisons).

Our World
in Data



Source: Maddison Project Database (2018)

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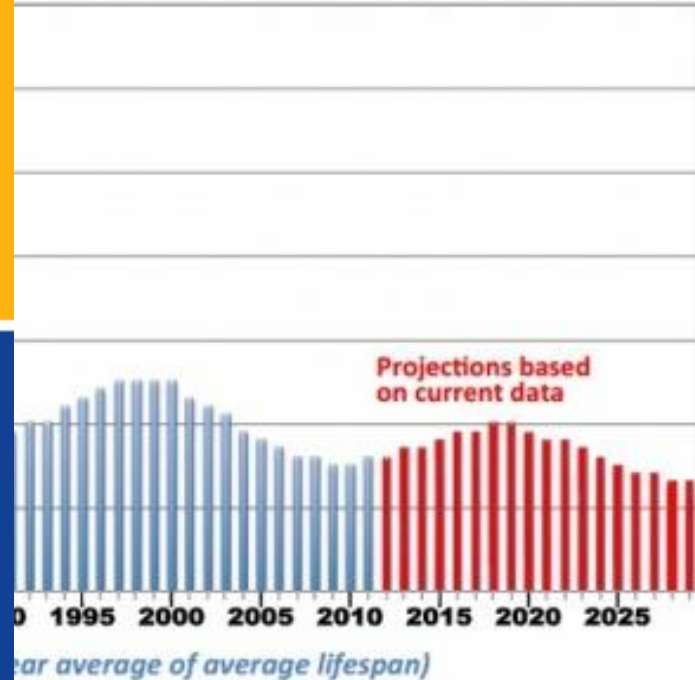
Future of Companies



Remember us?



S&P 500 Index (in years)



Digital Transformation

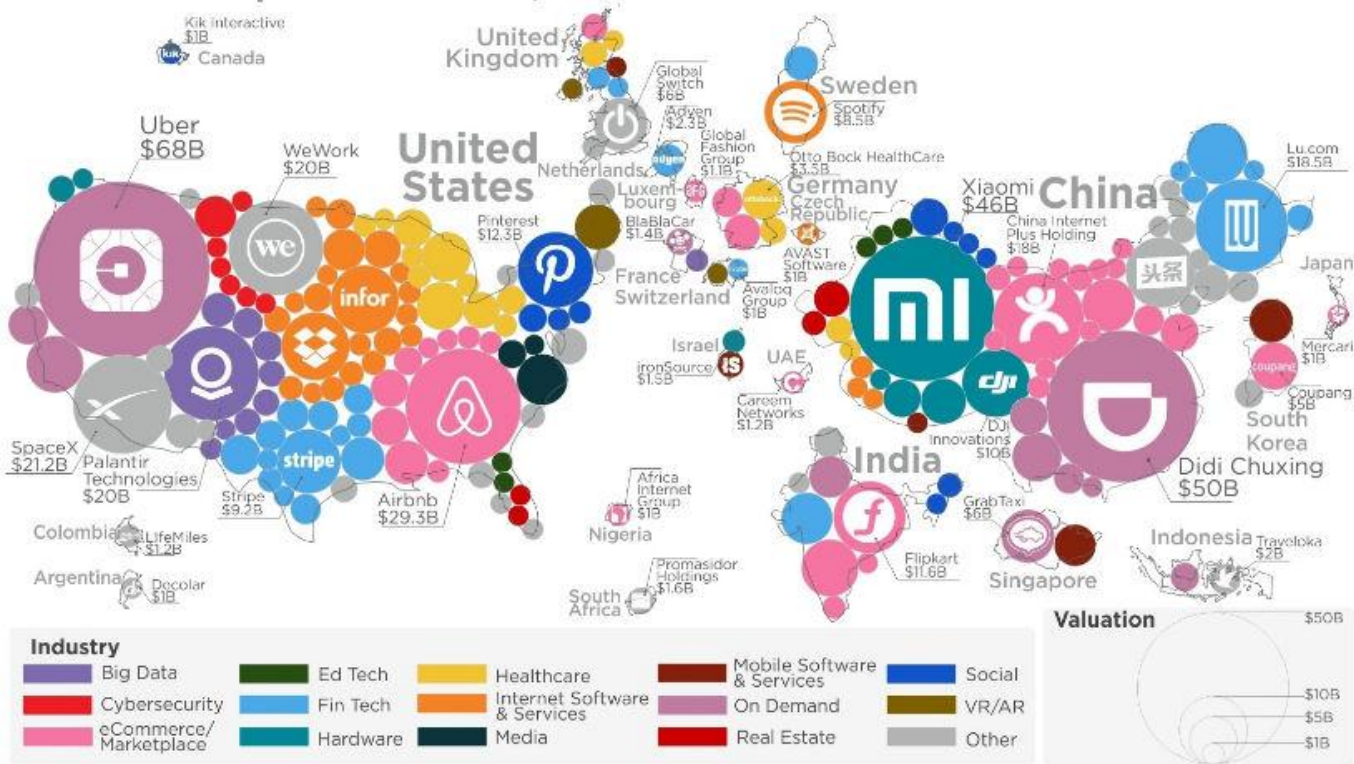
Digital transformation is the integration of digital technology into all areas of a business, fundamentally changing how you operate and deliver value to customers. It's also a cultural change that requires organizations to continually challenge the status quo, experiment, and get comfortable with failure.



Young Digital Competitors

The World's Unicorn Companies 2017

All Private Companies Valued At \$1B+



Fewer Workers, More Wealth



Eastman Kodak

Founded 1880

143,300 employees

\$1.54 billion market capitalization in 2014,
\$180 million in 2018



Instagram

Founded 2010

15 employees

\$1 billion sale to Facebook in 2012



Facebook

Founded 2004

17,000 employees

\$388 billion market capitalization in 2018

Workers per \$10 Million Revenue

Google **8**

Facebook **6**

Publicis Advertising 60

Amazon **17**

Macy's Department Store 62

Sears Department Store 63

Apple **5**

Samsung 94

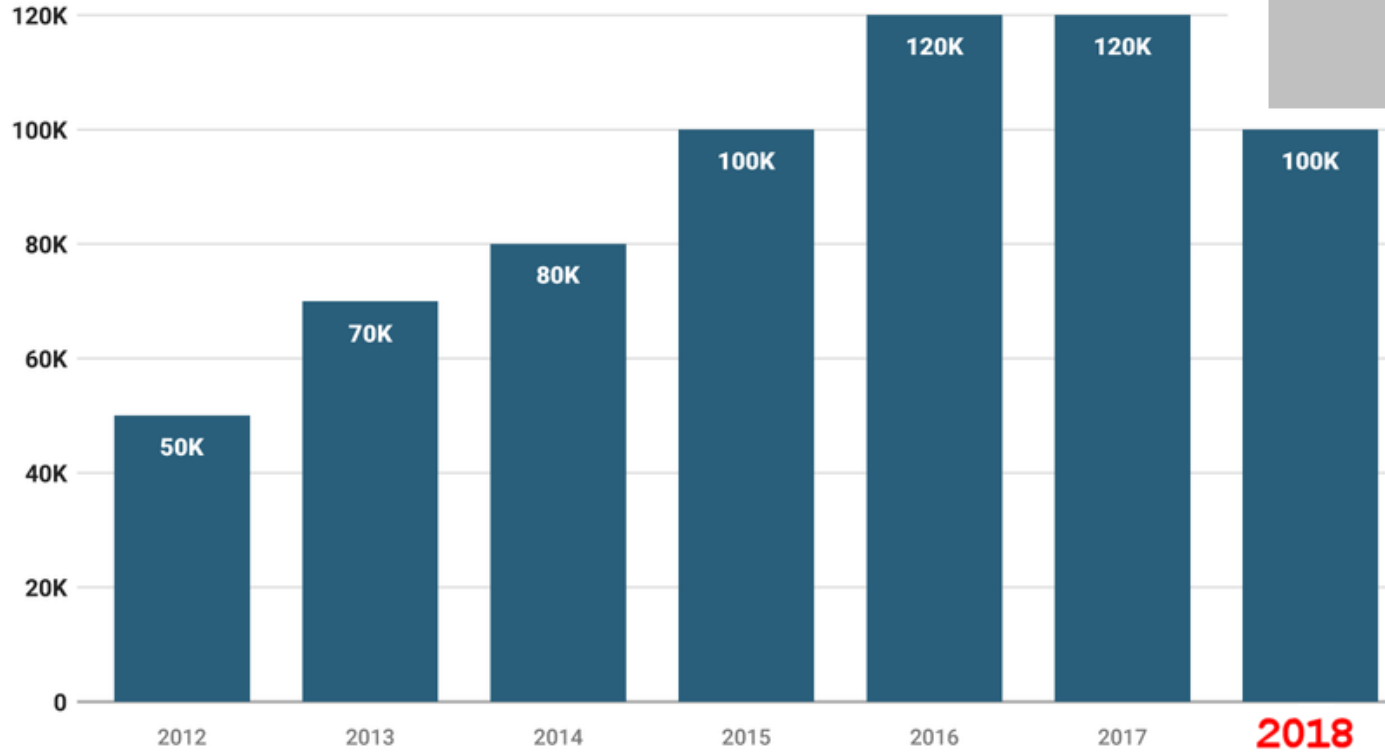
HP 112

Accelerating. Automation

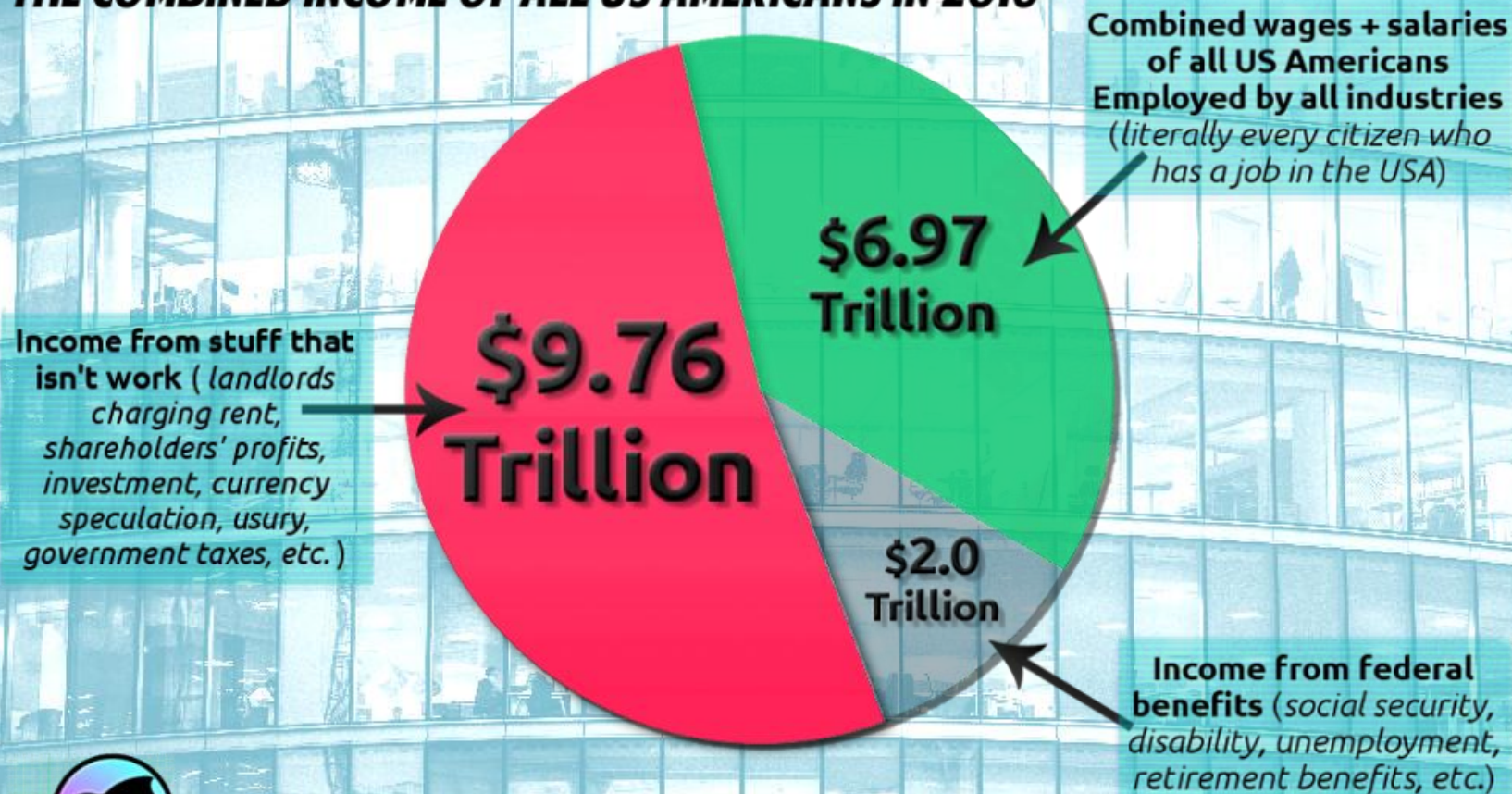
TECH CHART OF THE DAY

AMAZON GEARING UP FOR THE HOLIDAY SEASON

Number of seasonal workers hired by Amazon in preparation for the holidays



THE TOTAL AMERICAN INCOME: **THE COMBINED INCOME OF ALL US AMERICANS IN 2016**



Uncompensated Work

WORK

24-Hour Access
Unpaid Overtime
Professional Development
Networking
Mentoring
Industry Associations
Open Source Projects

SHIFTED

Data Entry
E-Commerce Sourcing
Diagnosis & Repair

LIFE

Care Work
Personal Development
Church Groups
Fraternal Associations
Social Media

SHIFTED

Data Entry
E-Commerce Sourcing
Diagnosis & Repair
Cybersecurity

Future of Jobs

Digital Transformation Framework

Financialized Landscape

Disruptive Business Models

Contingent Workforces

Commercial & Regulatory Compliance

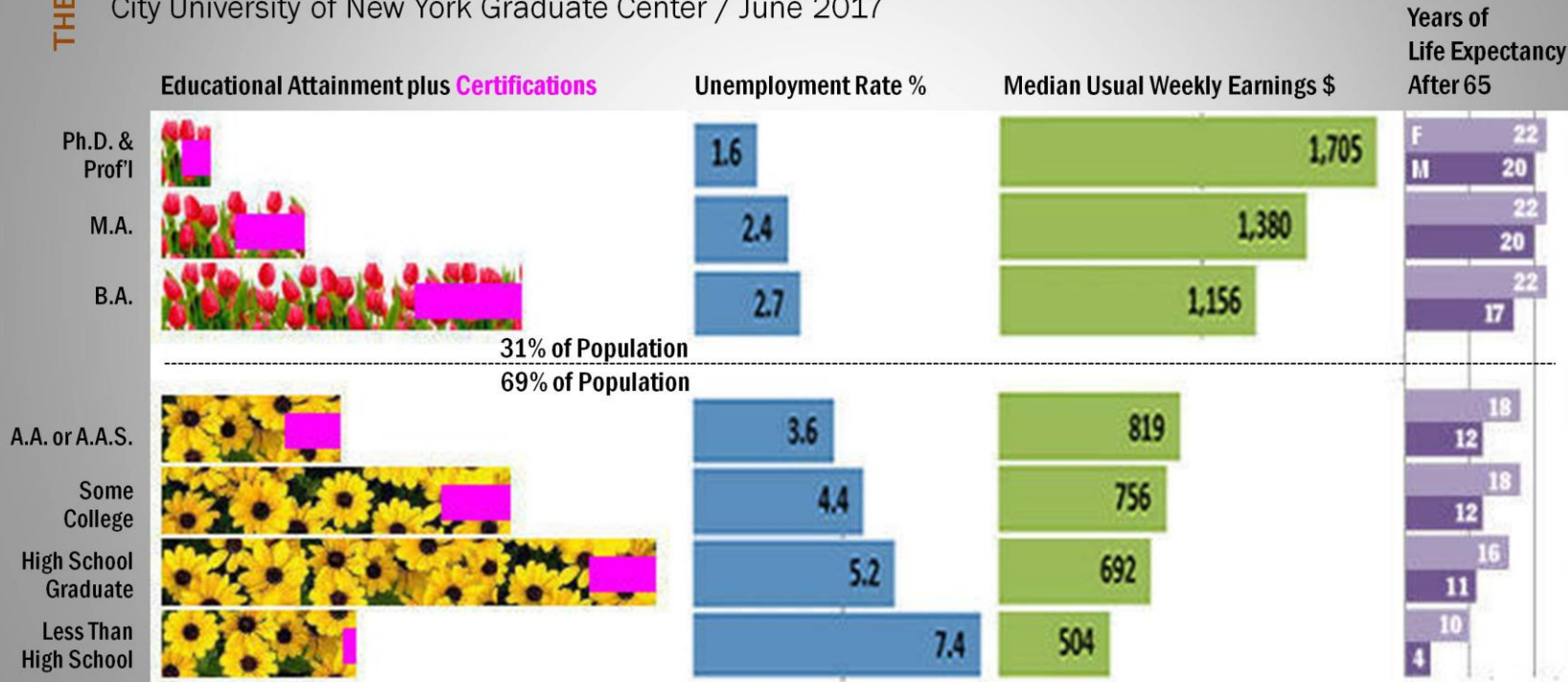
Education & Jobs

THESIS TALK

Open Source Micro Diplomas: New Credentials for New Learning

Jack Powers, MA Liberal Studies: Urban Education
City University of New York Graduate Center / June 2017

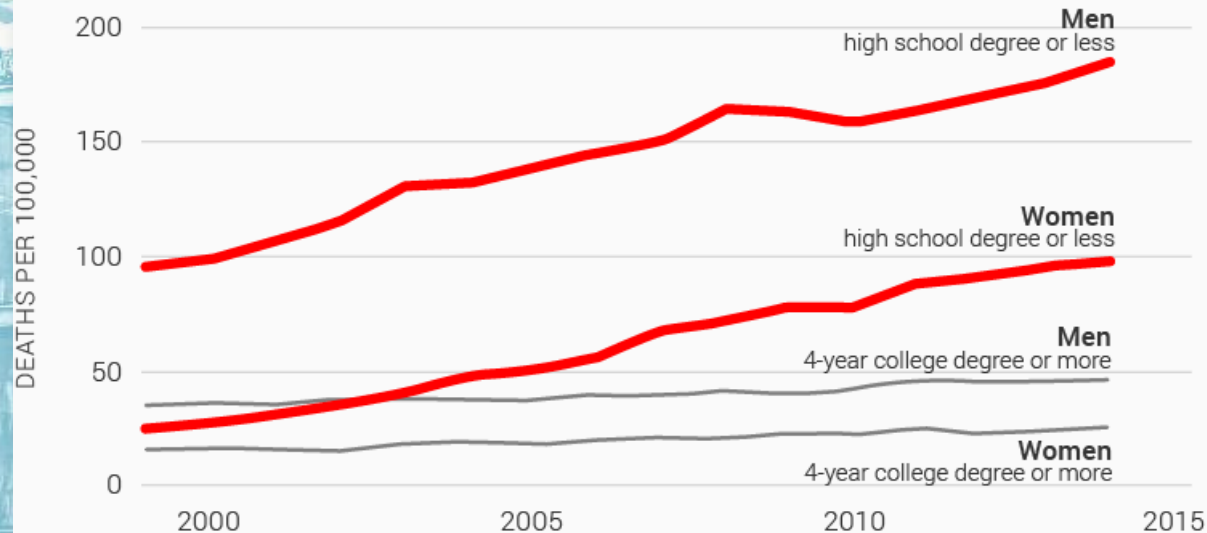
Tulips and Daisies: Education, Income and Class in America



Education and Longevity

White non-Hispanic midlife mortality from “deaths of despair” in the U.S. by education

Ages 50-54, deaths by drugs, alcohol, and suicide



Source: “Mortality and morbidity in the 21st century”
by Anne Case and Angus Deaton, Brookings Papers

Table 3

Certifications and issuing organizations listed by North American Industry Classification System (NAICS) industry code

		Issuers	Certifications
NAICS Code 11	Agriculture, Forestry, Fishing and Hunting	30	63
NAICS Code 21	Mining, Quarrying, and Oil and Gas Extraction	9	26
NAICS Code 22	Utilities	24	137
NAICS Code 23	Construction	78	325
NAICS Code 31	Manufacturing	14	21
NAICS Code 42	Wholesale Trade	36	69
NAICS Code 44	Retail Trade	33	57
NAICS Code 48	Transportation and Warehousing	43	92
NAICS Code 51	Information	50	151
NAICS Code 52	Finance and Insurance	81	224
NAICS Code 53	Real Estate and Rental and Leasing	42	96
NAICS Code 54	Professional, Scientific, and Technical Services	399	500
NAICS Code 55	Management of Companies and Enterprises	100	359
NAICS Code 56	Administrative and Support and Waste	177	389
NAICS Code 61	Educational Services	92	194
NAICS Code 62	Health Care and Social Assistance	364	500
NAICS Code 71	Arts, Entertainment, and Recreation	56	166
NAICS Code 72	Accommodation and Food Services	24	66
NAICS Code 81	Other Services (except Public Administration)	112	360
NAICS Code 92	Public Administration	58	127
		<u>1,822</u>	<u>3,922</u>

1,822
Curricula

3,922
Certifications

Finding a Job

On-Line Reputation Management

Adult email, clean record, linked e-Portfolio

Digital Resume

Customized, updated, linked to Open Badges

ATS: Applicant Tracking Systems

Optimized text, keywords, PDF or DOCX, no images

Video Interviews and Hire-Vue

Filter candidates

Sort by Random



Delbys Oberlechner

Profile

Up

Feedback

Average Rating
(out of 2 Highest Rating)

★★★★★

My Recommendations

None

Setup

Hard

Autoplay

Delbys Oberlechner

Previous

1

2

Next

CANDIDATE NOT ANSWERING TO YOU

Recorded Question

Tell us about your professional and educational background.



★★★★★

Contingent Labor

2016 U.S. Employed Labor Force

149,703, 000 Americans (16 Years and Older)

Source: GAO, BLS, NORC, Jobenomics

Contingent Workforce: 40%

Part-Time Workers:

<35 hours/week

16%

Self-Employed Workers:

3%

Independent
Contractors:

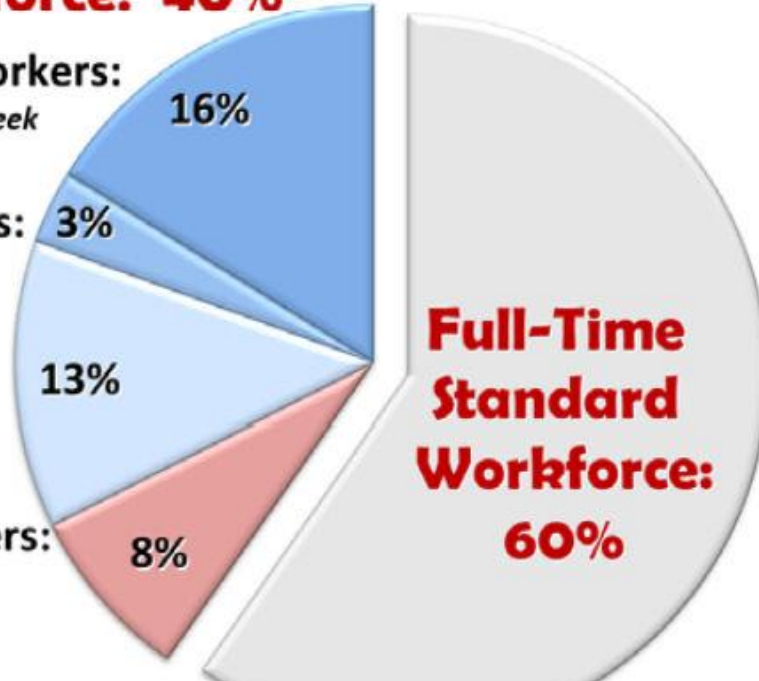
13%

Core Contingent Workers:

Agency & Direct Hire Temps,
On-Call and Day Laborers,
Contract Company Workers

8%

**Full-Time
Standard
Workforce:
60%**

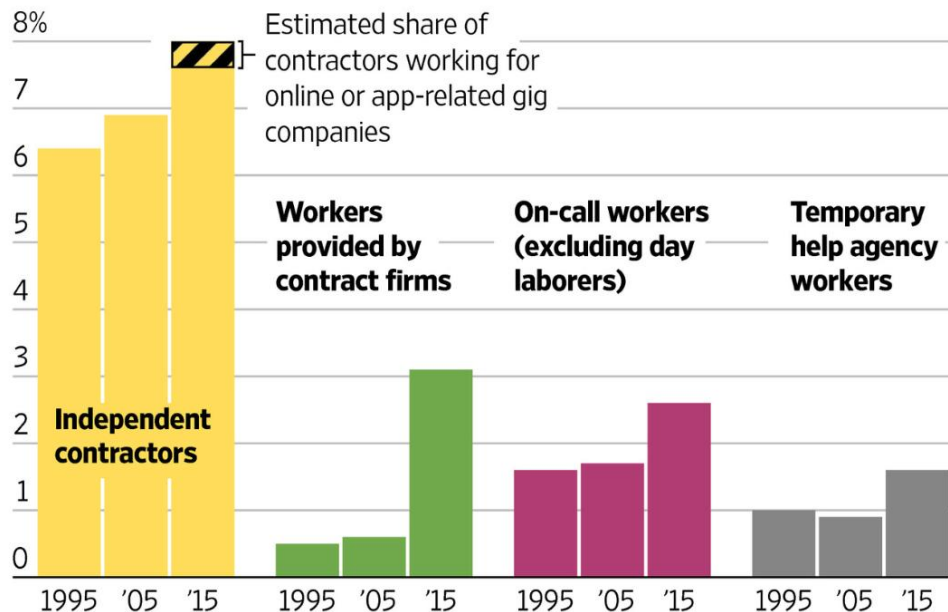


The Gig Economy

Taking It Offline

Alternative work arrangement jobs, often known as gigs, have climbed rapidly since 2005, but contrary to popular belief, most of that growth has happened offline, not through apps such as Taskrabbit and Lyft.

Share of workers in each type of alternate work arrangement



Sources: Labor Dept. (1995, 2005); Alan Krueger of

The Gig Economy



FREELANCING IN AMERICA

2017

"Freelancing in America" is the most comprehensive study of the independent workforce. Commissioned by Freelancers Union and Upwork, and conducted by independent research firm Edelman Intelligence, this study analyzes the size of the growing freelance economy and provides insights into the major role freelancers play in the future of work. In fact, based on this year's findings it is predicted that the majority of the U.S. workforce will be freelancers within a decade (by 2027).



upwork

57.3M people freelance



The majority of workers will freelance by 2027



Millennials are leading the way

47%

of Millennial workers freelance, more than any other generation



Freelancers contribute an estimated

\$1.4 Trillion

annually in freelance earnings to our economy



More income sources are better

Freelancers think having diversified income is more secure than one employer (63% agree)



Tech is enabling freelancing

71%

of freelancers say the amount of work they obtained online increased over the past year



Don't call this the gig economy

What freelancers prefer calling this economy



Top drivers and barriers to freelancing

DRIVERS

- ☒ Freedom
- ☒ Flexibility
- ☒ Earning extra

BARRIERS

- ☒ Income predictability
- ☒ Finding work

Freelancers are preparing for the future

55%

% who re-skilled within the last 6 months

30%



Compliance Society

#MeToo

ADAAA

Equal Pay Act

Fair Employment and Housing

OSHA

Paid Family Leave



SHRUTI S.

C# | AngularJS | MEA...

Hourly Rate **\$14/hr**

Location California, CA 

Job Success 95%

Node.js

AngularJS

MEAN Stack Administration

[View Profile](#)



BILL F.

Senior IT Project Mana...

Hourly Rate **\$50/hr**

Location Berthoud, CO 

Job Success 100%

Project Management

Microsoft Excel

Microsoft Word

[View Profile](#)



ISIAH W.

Certified (RedHat) Lin...

Hourly Rate **\$55/hr**

Location Monroe, MI 

Job Success 91%

Linux System Administration

CentOS

[View Profile](#)



ANNE B.

Consultant ~ Writer ~ ...

Hourly Rate **\$40/hr**

Location Nebo, NC 

Job Success 94%

Writing

Internet Research

Article Writing

Copywriting

[View Profile](#)

The Gig Economy

W-2

EMPLOYEE STATUS

Federal, state and local
tax plus FICA withholding
Minimum wage
OSHA, COBRA, Disability
Overtime pay
Unemployment benefits
Workers compensation
Medical coverage
Paid holidays and
vacations
Retirement benefits
Collective bargaining
Hazard and severance pay

1099

INDEPENDENT

CONTRACTOR STATUS

Minimum hourly wage.
OSHA

No medical coverage,
unemployment insurance,
workers' compensation,
anti-discrimination law,
fair chance hiring,
paid sick leave,
retirement benefits, or
collective bargaining

Precarious Work



The Sharing Universe
Companies that facilitate sharing have grown wildly across many industries—shown here by amount of money raised by investors

Twice
\$23 million
FOUNDED 2012
In 4 countries

Vinted
\$33 million
FOUNDED 2008
In 8 countries

Tradesty
\$14.5 million
FOUNDED 2012
U.S. only

Halo
\$101 million
FOUNDED 2010
In 5 countries

Sidecar
\$35 million
FOUNDED 2012
U.S. only

Lift
\$332 million
FOUNDED 2012
U.S. only

Lending Club
\$392 million
FOUNDED 2007
(Publicly traded)
U.S. only

Jimubox
\$47 million
FOUNDED 2013
China only

Prosper
\$190 million
FOUNDED 2006
U.S. only

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\$23 million
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CLOTHING
Websites like Vinted let people buy and sell secondhand clothes online

HOUSING
Vacationers can rent bedrooms, apartments or whole houses through these booking sites

FOOD
Share a home-cooked meal at the cook's home through these apps

ELECTRICITY
Excess electricity generated by a home's solar panels can be sold to a utility

TASKS
Apps let people pick up odd jobs and handwork from others

HOME GOODS
These apps make it easier to share a cup of sugar with your neighbor

PARKING
Apps let you rent your driveway or even a public parking spot to a stranger on the fly

Parking Panda
\$4.7 million
FOUNDED 2011
U.S. only

SpotHero
\$7.5 million
FOUNDED 2011
U.S. only

Pango
\$6.5 million

ParkWhiz

Peerby
\$2.5 million
FOUNDED 2011
In 5 countries

Verde

Zaarly
\$15 million
FOUNDED 2011
U.S. only

TaskRabbit

SolarCity

Gamification of Jobs

NYTimes: How Uber Uses Psychological Tricks to Push Its Drivers' Buttons

[nytimes.com/intera...](https://www.nytimes.com/interactive/2017/08/02/business/uber-psychology.html) 

The Taking Economy: Uber, Information, and Power

Columbia Law Review, Vol. 117, 2017

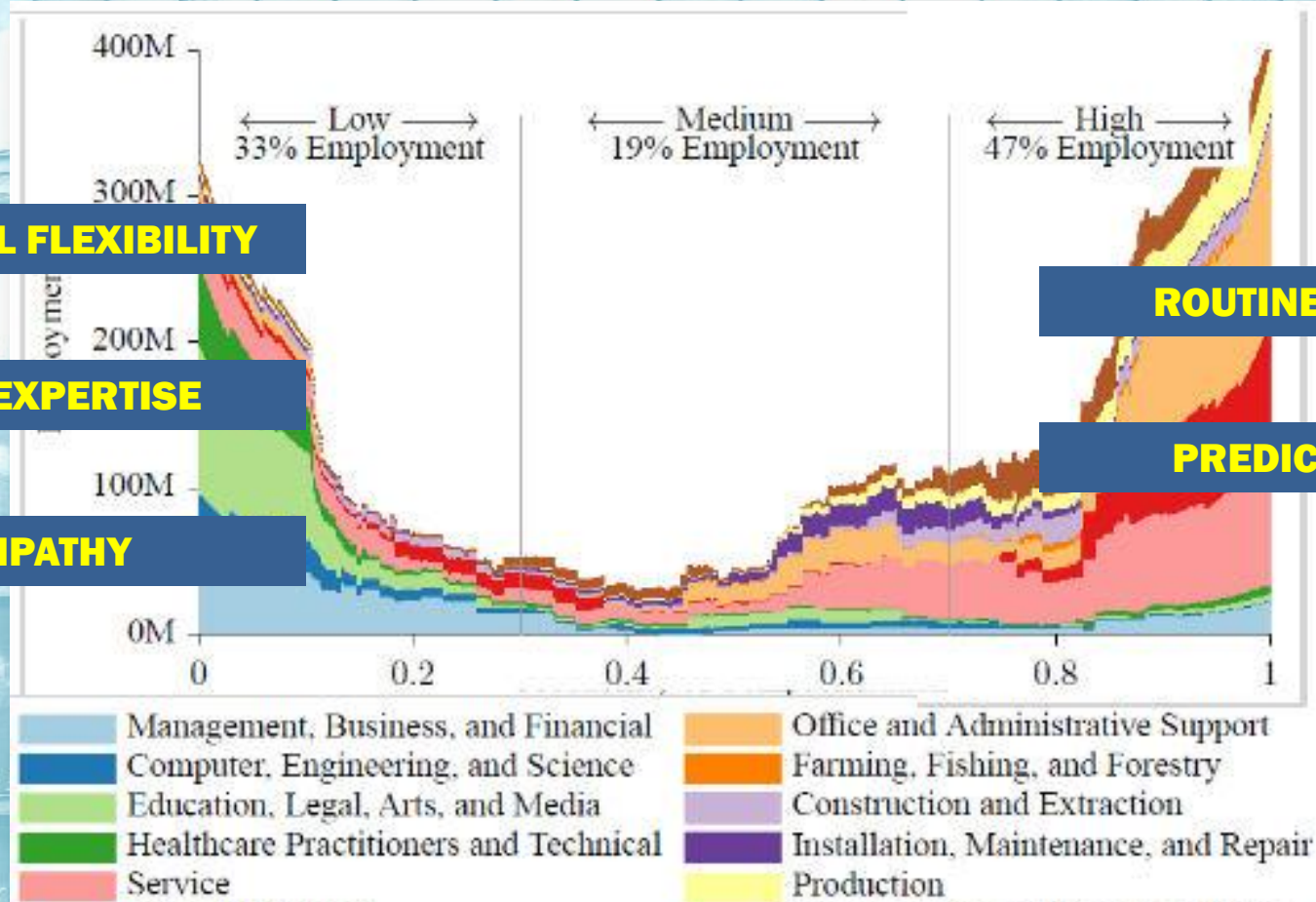
University of Washington School of Law Research Paper No. 2017-08

Unequal Time

Gender, Class, and Family in Employment Schedules

by David G. Collier, Naomi C. G. Collier

Probability of Computerisation



PHYSICAL FLEXIBILITY

HIGH EXPERTISE

EMPATHY

ROUTINE TASKS

PREDICTABLE

Medicine

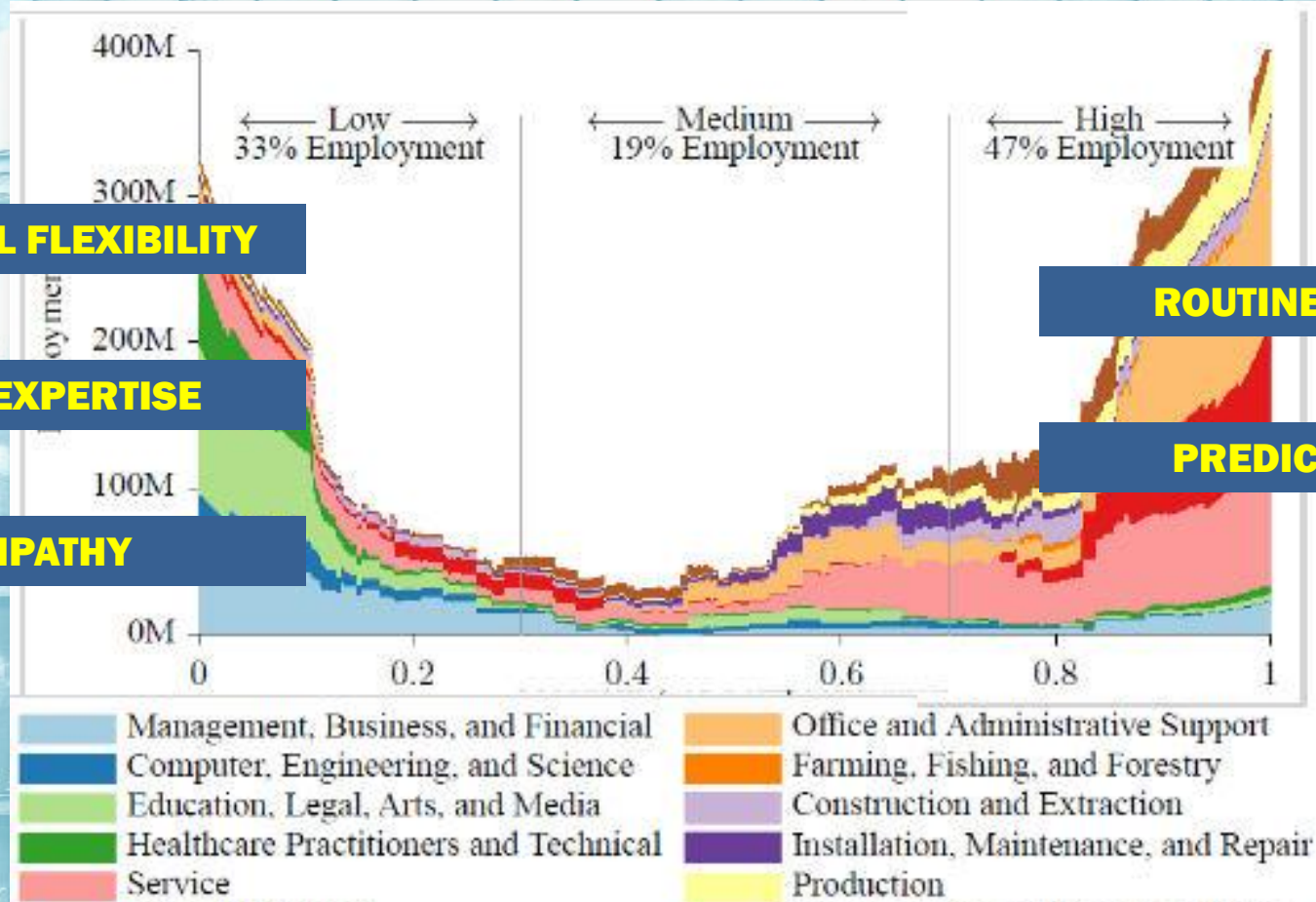


RADIOLOGIST



PEDIATRICIAN

Probability of Computerisation



PHYSICAL FLEXIBILITY

HIGH EXPERTISE

EMPATHY

ROUTINE TASKS

PREDICTABLE

The Future of Work ~~Jobs~~

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