

IterateOn brings you:

LOW-CODE / NO-CODE, DIY-VIRUSES & HACKERS

Presented by:

Jon Nordmark, CEO & Co-Founder

Brian Sathianathan, CDO & Co-Founder



Next event: **2023 - a Pivot Year for Digital**
December 10th

Join us to see what will cause digital experiences to rule starting three years from now. We show trajectories of 7 different trends and how they converge, what it means for the business world, and why you will need to be digital first by 2023.

Welcome!

The goal of IterateOn is to provide **continuous thought-provoking learning** from partners, members, advisors, authors.

We want to hear your thoughts

- Comment + ask a questions. Use the Q&A or raise your hand.
- Tell us your thoughts via the polls.
- Webinar recording will be shared.

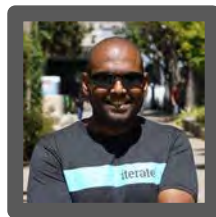
Speakers



Secret
Products



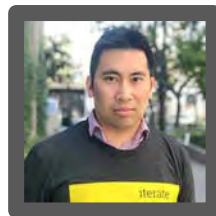
Jon Nordmark
CEO & Co-Founder



Brian Sathianathan
CDO & Co-Founder



Arul Chandrasekaran
Engineering Head &
Kernel Expert



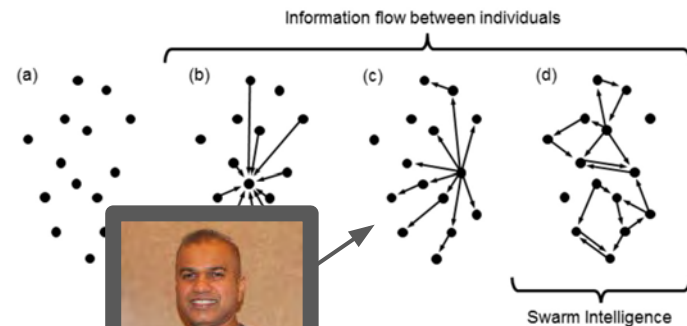
Solomon Ray
Director of Innovation



John Selvadurai, Ph.D.
Curation & Analysis, AI Platform
& Middleware



Shomron Jacob
Engineering Manager,
Applied ML
(Machine Learning)




Drag-n-Drop AI

8 Patent Filings, 1 Accepted, 7 in review

- P283106.US.02 Mutli Threaded Kernel,
- P283106.US.01 **Drag-n-Drop Quick AI**
- P283105.US.01 A System and Method to Index Startups and Large Corporations Based on Quantitative Indicators
- P282139.US.02 Dynamic and Automatic Agreement Generation and Modification
- P283102.US.01 Custom Code Loading
- P283104.US.01 Dynamic Landscape Creation on Collections [Technology Opportunity Mapping]
- P283107.US.01 Method and System for Automated Startup Curation
- P284457.US.01 Identifying Signals and Trends

Issued



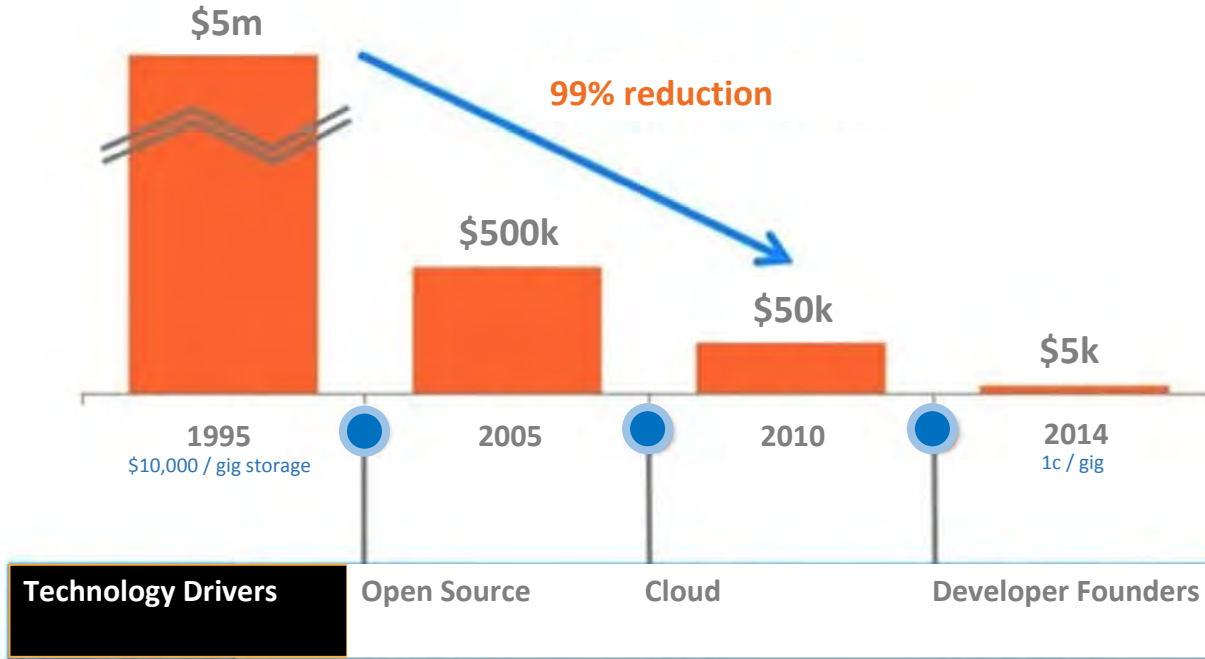
 US010776686B1	
(12) United States Patent	
Jacob et al.	
(10) Patent No.: US 10,776,686 B1	
(45) Date of Patent: Sep. 15, 2020	
<hr/>	
(54) CONTAINER ARCHITECTURE FOR MODULAR MACHINE LEARNING	(58) Field of Classification Search
(71) Applicant: ITERATE STUDIO, INC., Denver, CO (US)	None See application file for complete search history.
(72) Inventors: Shomron Jacob, San Jose, CA (US); Brainerd Sathianathan, Morgan Hill, CA (US); Arulkumaran Chandrasekaran, Tamilnadu (IN); John Selvadurai, San Jose, CA (US); Chatura Samarasinghe, San Jose, CA (US); David Ruvalcaba Gonzalez, San Jose, CA (US)	(56) References Cited
(73) Assignee: ITERATE STUDIO, INC., Denver, CO (US)	U.S. PATENT DOCUMENTS
(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.	9,672,355 B2 * 6/2017 Titonis G06F 21/56 2005/0005261 A1 * 1/2005 Severin G06F 8/316 2008/0028364 A1 * 1/2008 Triou G06F 11/3676 717/108 717/104
(21) Appl. No.: 16/692,590	(Continued)
(22) Filed: Nov. 22, 2019	OTHER PUBLICATIONS
Related U.S. Application Data	NODE-RED, "User Guide", https://nodered.org/docs/user-guide/ (Accessed Apr. 6, 2020), Apr. 6, 2020, 11 pages.
	<i>Primary Examiner</i> — Alan Chen
	(74) Attorney, Agent, or Firm — Dorsey & Whitney LLP
	(57) ABSTRACT
	The present disclosure relates generally to systems and methods that include a configuration server with a process-

Poll #1

How familiar are you with low-code development methodologies?

1. Background: Tech and Startup Explosion
2. Background: The Rise of Platforms
3. The Rise of DIY
4. DIY-software *tipping-point* ... expectations
5. What's DIY-type software look like?
6. Hybridization of Jobs

Startups = Cheaper + Faster



Lower barriers = startup **proliferation**

2011

~150



2012

~350



2014

~1,000



2015

~2,000



2016

~3,500



**digital marketing
solutions**



2018

~7,000

Source: Scott Brinker
Marketing technologies

2023

Interwoven Maturity



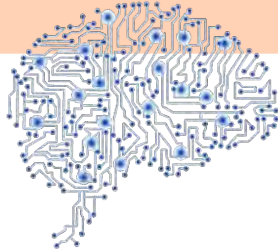
5G

1.1B

phones

AI

\$98B



AR/VR

\$100B

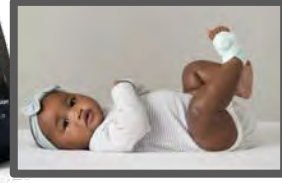
BC

\$23B



Voice

\$18B



IoT

\$1T

43B devices

Open
Source

100M

libraries



← Single year spend (NOT including R&D) →



Future of Culture:

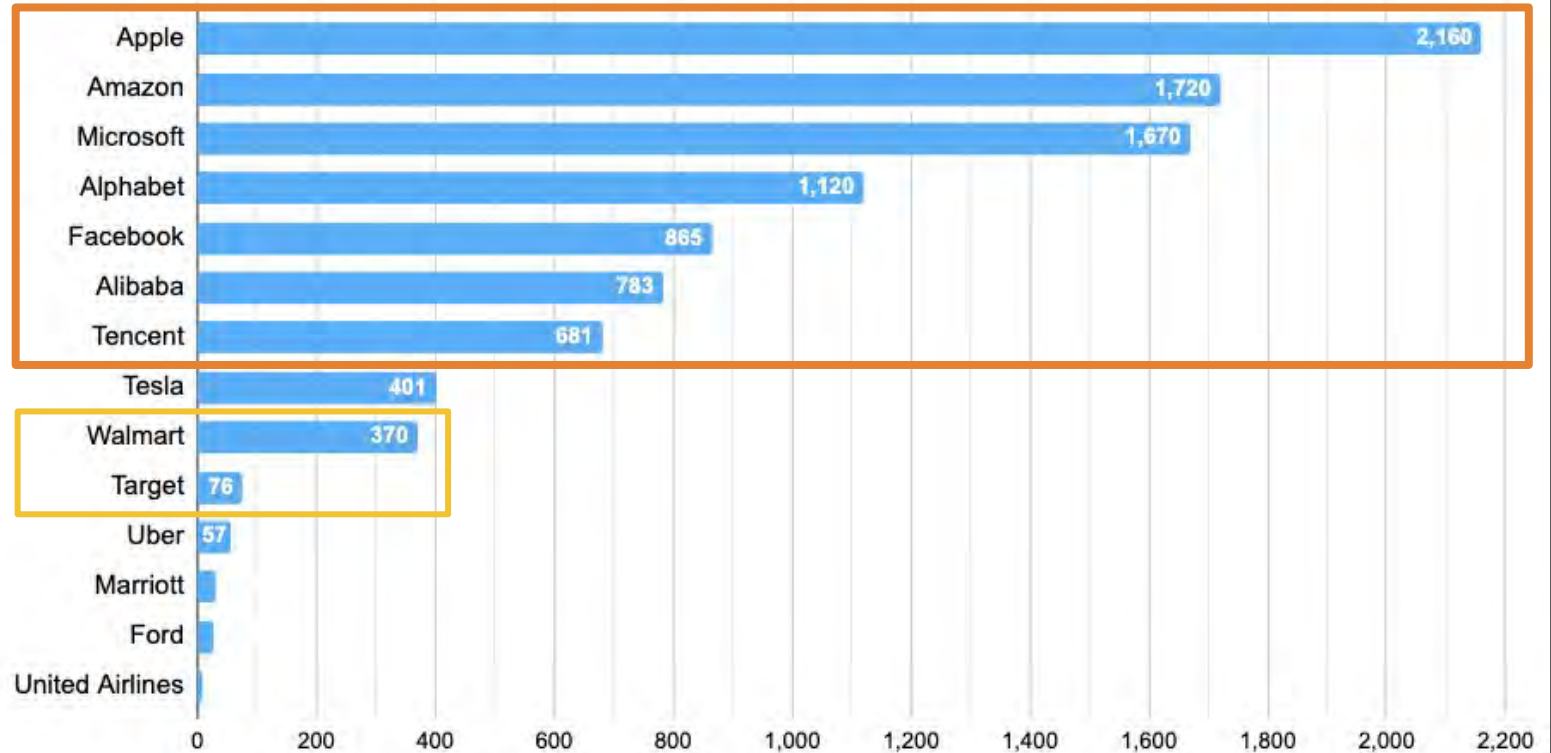
By 2024, leaders in 50% of the G2000
will have mastered ... **empathy,**
empowerment, innovation, and
customer- and **data-centricity** (IDC)

Hybridization

Technical + Business + Soft Skills

1. Tech and Startup Explosion
2. The Rise of Platforms
3. The Rise of DIY
4. DIY-software *tipping-point* ... expectations
5. What's DIY-type software look like?
6. Hybridization of Jobs

World's 8 highest value firms are “platforms”



Market Cap (i.e. Amazon is \$1.7 trillion in this graph) as of Aug 26, 2020

Amazon is a complex ecosystem; not a company

Snapshot 2019

- \$280.5B reported revenue (GMV is higher)
- \$456.8B revenue when reported as GMV
- \$11.6B net income
- \$40B R&D annual investment run rate
- 200M Echo's sold (distributed IoT devices)
- 798,000 employees

graphic by **iterate.ai**
open innovation platform



... it's largely about data-sharing

43 SUBSIDIARIES	
INNOVATOR & STARTUP ENABLEMENT	
1	A9 (search and ad software lab)
2	Amazon Consulting (partner-path.com)
3	Amazon Alexa Fund (for voice)
4	Alexa Accelerator (for voice)
5	CreateSpace (indie publishing)
HEALTHCARE + RETAIL	
6	PillPack
7	Health Navigator
RETAIL	
8	Whole Foods
9	Zappos.com
10	Fabric.com
11	Woot
12	Quidsi
13	Souq
14	BOP (ShopBop)
15	comiXology
16	AbeBooks
BOOKS	
17	Audible
18	MobiPocket (software for digital reading)
19	The Book Depository
VIRTUAL COMMUNITY & CONTENT	
20	Goodreads
21	Digital Photography Review
22	Internet Movie Database
ENTERTAINMENT	
23	LoveFilm International
24	Box Office Mojo
25	Sye Streaming Service
ESPORTS	
26	Twitch Interactive
27	CryEngine
28	GameSparks
IOT & AI DEVICES	
29	Ring (Cameras)
30	eero (Smart Home)
31	Blink (Security Doorbell and Cameras)
VOICE	
32	Ivona Software
IOT and AI SOFTWARE + INFRASTRUCTURE	
33	2lemetry (IoT platform)
34	Annapurna Labs (Edge Chips)
35	Amazon Web Services
36	DataRow
37	CloudEndure
38	Amiato
39	Clusterk
GROCERY LOGISTICS	
40	Webvan Group
DIGITAL PAYMENTS & FINANCE	
41	GoPago
DIGITAL ADVERTISING	
42	Sizmek
DIGITAL EDUCATION	
43	TenMarks

AWS today announced the beta launch of **Amazon** Honeycode, a new, fully managed **low-code/no-code** development tool that aims to make it easy for anybody in a company to build their own applications. All of this, of course, is backed by a database in AWS and a web-based, drag-and-drop interface builder. Jun 24, 2020



techcrunch.com › 2020/06/24 › aws-launches-amazon-ho...

4 months ago

1 month ago

Microsoft expects 500 million new apps to be built in the next half decade, which is more than all the apps built in the last 40 years.

“If that’s true, 450 million have to be built with a low-code tool,” said Charles Lamanna, corporate vice president of the citizen applications platform at Microsoft.





Next frontier in Microsoft, Google, Amazon cloud battle is over a world without code

PUBLISHED WED, APR 1 2020•9:27 AM EDT | UPDATED FRI, APR 3 2020•11:40 AM EDT



Eric Rosenbaum
@ERPROSE

1. Tech and Startup Explosion
2. The Rise of Platforms
3. **The Rise of DIY** (for good and for bad)
4. DIY-software *tipping-point*
5. What's DIY-type software look like?
6. Hybridization of Jobs



ANDY GREENBERG

SECURITY 11.04.2020 02:43 PM

one week ago

The FBI Says 'Boogaloo' Extremists Bought 3D-Printed Machine Gun Parts

A criminal complaint alleges that a West Virginia man disguised the plastic components as wall hangers and sold hundreds of them online.



The so-called Boogaloo Boys are a violent extremist group—and they've allegedly come to embrace 3D-printed gun parts. PHOTOGRAPH: CHAD MARTIN/GETTY IMAGES

Since the first 3D-printed gun was fired more than seven years ago, the technique has loomed as a potential tool to arm individuals with lethal weapons they couldn't otherwise legally obtain.

Now criminal charges against one West Virginia man suggest that the digital gunsmithing method has been adopted by violent, anti-government domestic extremists: the Boogaloo movement.

Study: PewDiePie is YouTube's highest earner at \$8m a month

August 06, 2019 by Sean Czarnecki



PewDiePie (pictured in 2015), the most-subscribed individual YouTuber

YouTube personalities

User(s)	Country	Channel(s)	Notes
Aaron Yonda and Matt Sloan	US	blamesocietyfilms	Known for the fan webseries <i>Chad Vader: Day Shift Manager</i> .
Adam Montoya	US	SeaNanners	Known for his extensive <i>Let's Play</i> videos as well as cooperation with other gamers such as PewDiePie and Markiplier.
Adam Saleh	US	TrueStoryASA	Vlogs and public pranks
Adam B	UK	Adam B	Northern Irish actor and youtuber
Addison Rae	US	Addison Rae	Dancer, vlogger and TikTok
Adore Delano (Danny Noriega)	US	DannyNoriega	Following <i>Idol</i> , Noriega became a YouTube personality, performing skits as himself, in drag as Adore Delano, or as his other character, Angel Baby. In June 2009, Noriega released the music video for "24/7," featuring Diamonique.
Ajeay Nagar	India	CarryMinati, CarryIsLive	Creates comic content where he publishes satirical opinions known as 'roasts' about a multitude of topics primarily in the Indian entertainment industry. Also posts live gaming streams and other gaming-related humorous content
AFTV	UK	AFTV	Football fan YouTube channel and website directed at Arsenal supporters.
Alan Becker	US	Alan Becker, AlanBeckerMinecraft, AlanBeckerTutorials, noogai89	Known for his animation web videos like "Animation vs. Minecraft" and series like "Animator vs. Animation".
Alan Melikdjanian	Latvia	CaptainDisillusion	Creator of the "Captain Disillusion" series demonstrating visual effects used in many viral videos
Alastair Aiken	UK	Ali-A, MoreAliA	Both of Aiken's channels upload gaming videos as well as vlogs. He is best known for his <i>Call of Duty</i> gameplay videos (both <i>Let's Plays</i> and <i>video game walkthroughs</i>).
Alex Clark	US	itsAlexClark	Animator, comedian, and juggler
Alex Day	UK	nerimon	Has had top 40 hits after vlogging on YouTube.
Alexa Goddard	UK	AlexaMusicTV	British R&B singer who charted in the <i>UK Top 40</i> after promoting herself through YouTube.
Alexis Jordan	US	Alexisjordan1	Singer-songwriter, actress and first season contestant on <i>America's Got Talent</i> ; signed to Jay Z's <i>Roc Nation</i> label through her exposure on her YouTube channel.
Alfie Deyes	UK	PointlessBlog, PointlessBlogVlogs, PointlessBlogGames	Vlogger, comedian, <i>Let's Player</i>
Alan Walker	Norway	Alan Walker	English-Norwegian DJ and record producer



Home

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Liked Songs

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PODCAST

DIY Podcasting

Carl Houde



FOLLOW

...

All Episodes



Microphone Selection and Positioning for Podcasters

If you tried to count all the microphones that exist in the world, you'd probably give up before being halfway done. When this many options exist for an essential piece of podcasting equipment, it ca...



Oct 2019 · 11 min



How to Pick the Best Room for Podcast Recording

Have you ever thought about your room from an audio recording standpoint? Maybe it's relatively empty—or maybe it's pretty fully decorated! There are so many ways that your room can affect yo...



Oct 2019 · 9 min

About

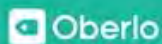
DIY Podcasting is all about helping you produce the best sounding podcast possible.



DIY Podcasting Trailer

TRAILER 1 min 25 sec

...



How Many Podcasts Are There?



There are currently
850,000

active podcasts and
over 30 million
podcast episodes.

(Podcast Insights, 2020)

Source: [Oberlo](#)

The 50 Best Podcast Episodes of 2020 (So Far)

A collection of stories, experiences, and adventures that speak to so much of what this year has brought.



Steve Greene

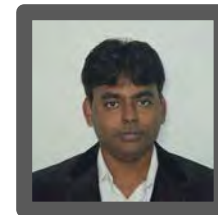
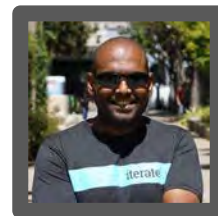
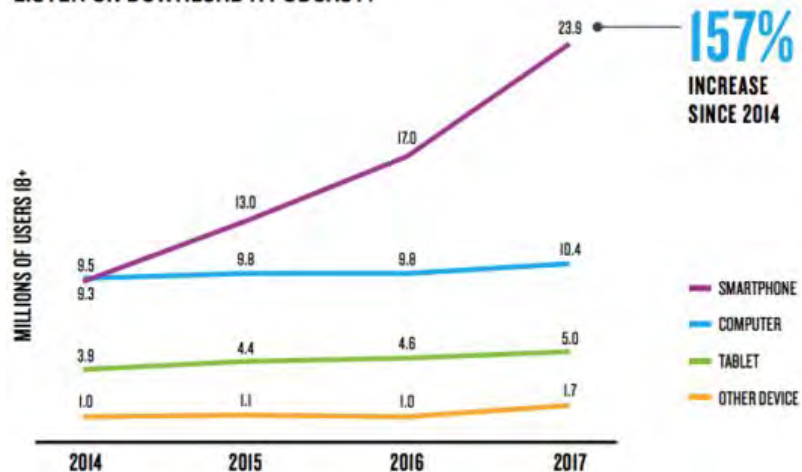
Jul 14, 2020 11:00 am

@stevebruin



SMARTPHONES DRIVE PODCAST USAGE

IN THE PAST 30 DAYS, WHICH DEVICE HAVE YOU USED TO WATCH, LISTEN OR DOWNLOAD A PODCAST?



Secret
Products



Credit: University of British Columbia

Engineers at the University of British Columbia have developed a new ultrasound transducer, or probe, that could **dramatically lower the cost of ultrasound scanners to as little as \$100**. Their patent-pending innovation—no bigger than a Band-Aid—is **portable, wearable and can be powered by a smartphone**.

DIY Medicine

by John Damianos at Dartmouth Geisel School of Medicine



EverlyWell's DTC lab testing idea is ... rising in popularity.

Do-it-yourself (DIY) medicine is particularly appealing to those who wish to take their health into their own hands and remove costly, time-consuming physicians from the equation.

Season Nine, Episode 12 of *Shark Tank* features a Harvard Business School graduate and entrepreneur pitching her product, EverlyWell. Based on her own experience spending thousands of dollars on countless lab tests that failed to diagnose her fatigue, aches and brain fog, she proposed a direct-to-consumer (DTC) lab testing company. DTC testing allows patients to directly purchase medical testing materials and send them for analysis and interpretation via mail. Her pitch was well-received, and she was rewarded with a one-million-dollar investment from the show's sharks. Most popular among EverlyWell's products is its food sensitivity test, which is an assay for IgG antibodies against ninety-six foods for the price of \$199.

Safe, accurate, and FDA-authorized COVID-19 Test Home Collection Kit is now available [Request Kit](#) ▶

Demand better for your body

Take control of your health with our 30+ at-home lab tests – ordered by you. Our kits offer simple sample collection, free shipping, and physician-reviewed results and insights sent to your device in just days.



Order from 30+ tests



Collect your sample at home



Receive your results in days

Popular Tests

[Shop All Tests](#)



Food Sensitivity Test



Learn how your body responds to 96 different foods



Vitamin D Test



Measure your vitamin D levels and compare it to healthy ranges



Thyroid Test



Measure your levels for the 3 main thyroid hormones plus thyroid antibodies



Indoor & Outdoor Allergy Test



Test for 40 common indoor and outdoor allergens

DIY Producers are the Future of Music



Nick Acevedo Jan 7, 2019 · 5 min read



Tommy Newport © 2018

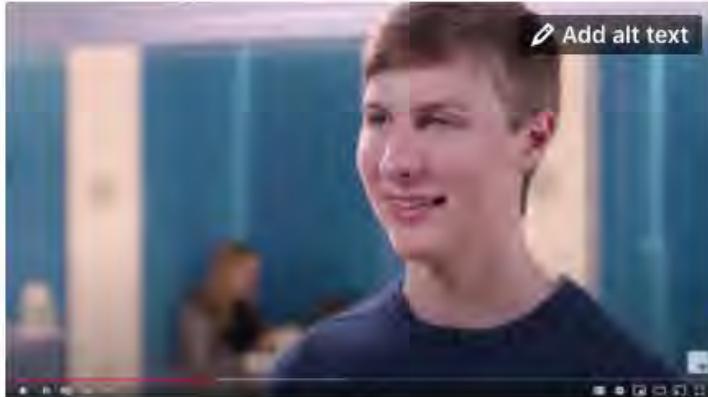
Gone are the days of needing to assemble a full band to make an album.

Artists of all genres are embracing a do-it-yourself attitude when it comes to producing music because it saves a ton of money and it's autonomous.

Now you can simply record your music on your laptop with software like Logic Pro, Ableton, Fruity Loops and GarageBand.

In the indie rock scene, Kevin Parker — the mastermind behind Tame Impala — is one of the most notable musicians behind the DIY movement. Parker writes, arranges, records and produces the music of Tame Impala himself and performs live with a group of touring musicians. **The influence of Parker's DIY style and the growing availability of at-home recording software have helped to create the rise of DIY musicians.**

Built by 2 teens, JailBreak has been played 3.8B times on Roblox



Two teens created Jailbreak and paid for college (+more) by selling virtual currency. Alec, the scripter, is pictured here.

Kids are known to earn more than \$1 million per year publishing games on Roblox.

Alleged Russian Hacker Behind \$100 Million **Evil Corp** Indicted

The US is charging Maksim Yakubets over two of the biggest cybertheft campaigns of the last decade, and offers a record reward for information on the case.



- Professional hacks
- Organized attacks
- Government sponsored

FBI and Interpol most wanted



Alleged Evil Corp mastermind Maksim Yakubets stands next to his Lamborghini Huracan. COURTESY OF THE UK NATIONAL CRIME AGENCY



WANTED BY THE FBI

MAKSIM VIKTOROVICH YAKUBETS

Conspiracy; Conspiracy to Commit Fraud; Wire Fraud; Bank Fraud;
Intentional Damage to a Computer



DESCRIPTION

Aliases: Maksim Yakubets, "AQUA"

Date(s) of Birth Used: May 20, 1987

Hair: Brown

Height: Approximately 5'10"

Place of Birth: Ukraine

Eyes: Brown

Weight: Approximately 170 pounds

Cyberattack on Critical Infrastructure: Russia and the Ukrainian Power Grid Attacks

OCTOBER 11, 2017 // AUTHORS: DONGHUI PARK, JULIA SUMMERS, MICHAEL WALSTROM



9/23/15:

Three Ukrainian electricity companies accessed virtually. 200,000+ Kiev residents lost power.

9/17/16:

A transmission substation in northern Kiev lost power.

Timing:

Sabotage occurred during political revolution in Kiev and the annexation of Crimea.

27-34, 40, 44, 62

As D.I.Y. Gene Editing Gains Popularity, 'Someone Is Going to Get Hurt'

After a virus was created from mail-order DNA, scientists are sounding the alarm about the genetic tinkering carried out in garages and living rooms.

regulations aren't going to work when everything is decentralized — when everybody has a DNA synthesizer on their smartphone."

The most pressing worry is that someone somewhere will use the spreading technology to create a bioweapon.

Already a research team at the University of Alberta has recreated from scratch an extinct relative of smallpox, horsepox, by stitching together fragments of mail-order DNA in just six months for about \$100,000 — without a glance from law enforcement officials.

By Emily Baumgaertner
May 14, 2018



A Biological Arms Race

If nefarious biohackers were to create a biological weapon from scratch — a killer that would bounce from host to host to host, capable of reaching millions of people, unrestrained by time or distance — they would probably begin with some online shopping.

A site called [Science Exchange](#), for example, serves as a Craigslist for DNA, a commercial ecosystem connecting almost anyone with online access and a valid credit card to companies that sell cloned DNA fragments.

Students at the Genespace lab in Brooklyn attending a "Biohacker Boot Camp" where participants can learn basic technical skills for homegrown genetics projects. Ryan Chatterjee/Inews for The New York Times

MARKETPLACE

How it works

Source from a network of 2,500+ qualified providers. **Order** immediately from any provider with pre-established contracts. **Manage** projects, exchange data, securely communicate. **Pay** providers easily, securely, and compliantly.

CATEGORIES

Virology Services

Virus Production

AAV Production

Adenovirus Production



Virus Production available from

ALSTEM

Richmond, California, United States of America



113 Virus Production Orders

100% Positive Feedback

Select

Pricing Upon
Request

Selected Providers: 0/5

Select up to 5
providers to bid on
your project

MARKETPLACE

How it works

Source from a network of 2,500+ qualified providers. **Order** immediately from any provider with established contracts. **Manage** projects, exchange data, securely communicate. **Pay** providers and compliantly.

CATEGORIES

[Virology Services](#)
[Virus Production](#)
[AAV Production](#)
[Adenovirus Production](#)


Virus Production available from
ALSTEM
Richmond, California, United States of America

113 Virus Production Orders

400 Total Orders 93% Positive

[Select](#)

Pricing Upon Request

Select

Select provider your



Virus Production available from
Vigene Biosciences
Rockville, Maryland, United States of America

79 Virus Production Orders
85 Total Orders 93% Positive
0 Endorsements

[Select](#)

Pricing Upon Request



Virus Production available from
Vector BioLabs
Philadelphia, Pennsylvania, United States of America

40 Virus Production Orders
41 Total Orders 100% Positive
0 Endorsements

[Select](#)

Pricing Upon Request

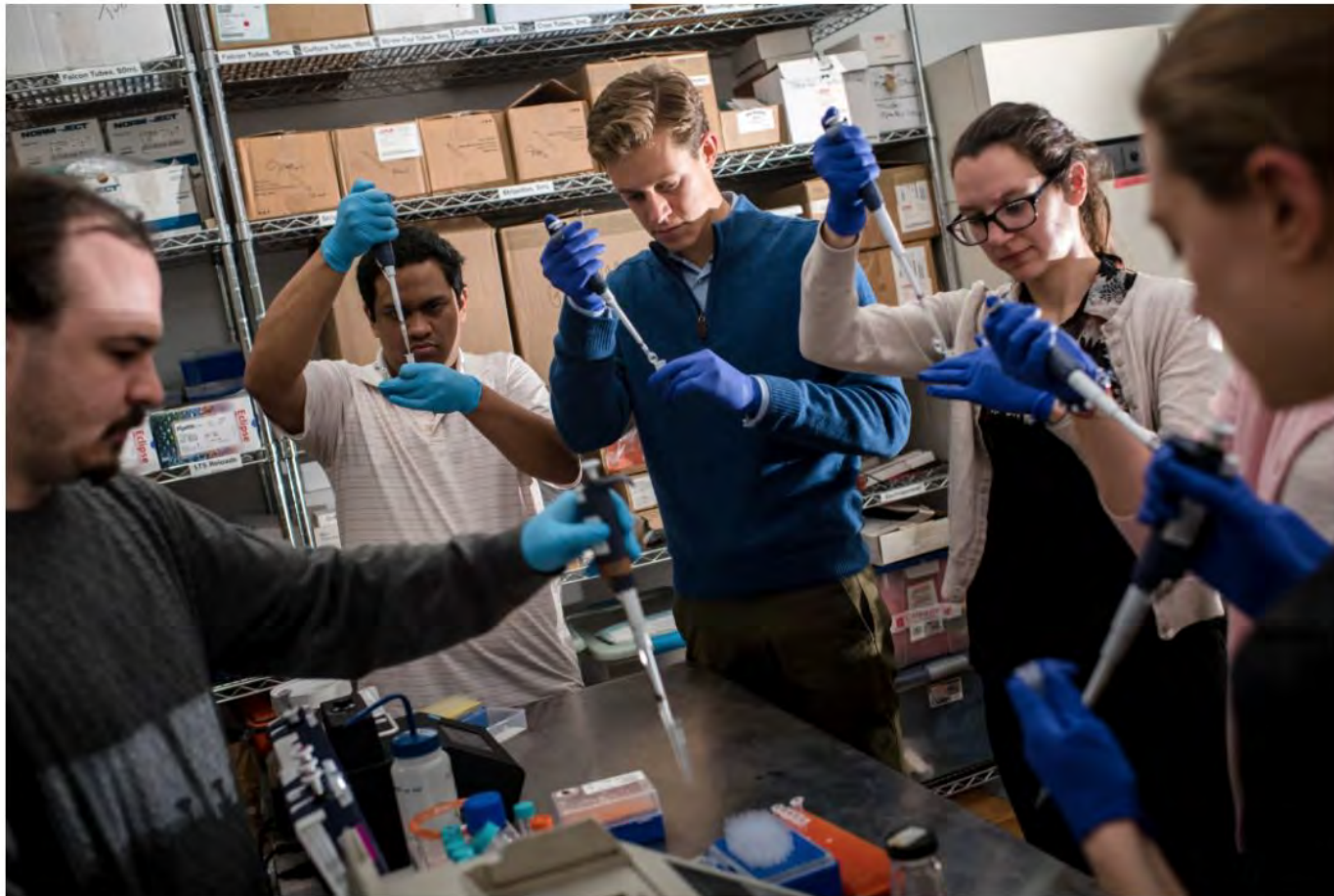


Virus Production available from
SignaGen Laboratories
Rockville, Maryland, United States of America

32 Virus Production Orders
32 Total Orders 91% Positive
0 Endorsements

[Select](#)

Pricing Upon Request



Biohacker Boot Camp

Homegrown genetics projects

Students at the Genspace lab in Brooklyn attending a “Biohacker Boot Camp” where participants can learn basic technical skills for homegrown genetics projects. Ryan Christopher Jones for The New York Times

from
NASA scientist



Josiah Zayner



Artist

Josiah Zayner is a biohacker, artist, and scientist best known for his self-experimentation and his work making hands-on genetic engineering accessible to a lay audience, including CRISPR.

[Wikipedia](#)

Born: February 8, 1981 (age 39 years)

Nationality: American

Education: The University of Chicago

Known for: Self-experimentation with [genetic material](#)



Josiah Zayner, a former NASA scientist turned biohacker, in Oakland, Calif. Erin Brethauer for The New York Times

to
HS graduate



Keoni Gandall, in his laboratory at home in Palo Alto, Calif. He barely earned a high school diploma, he said, and was kicked out of a local science fair for reckless genetic engineering. Erin Brethauer for The New York Times

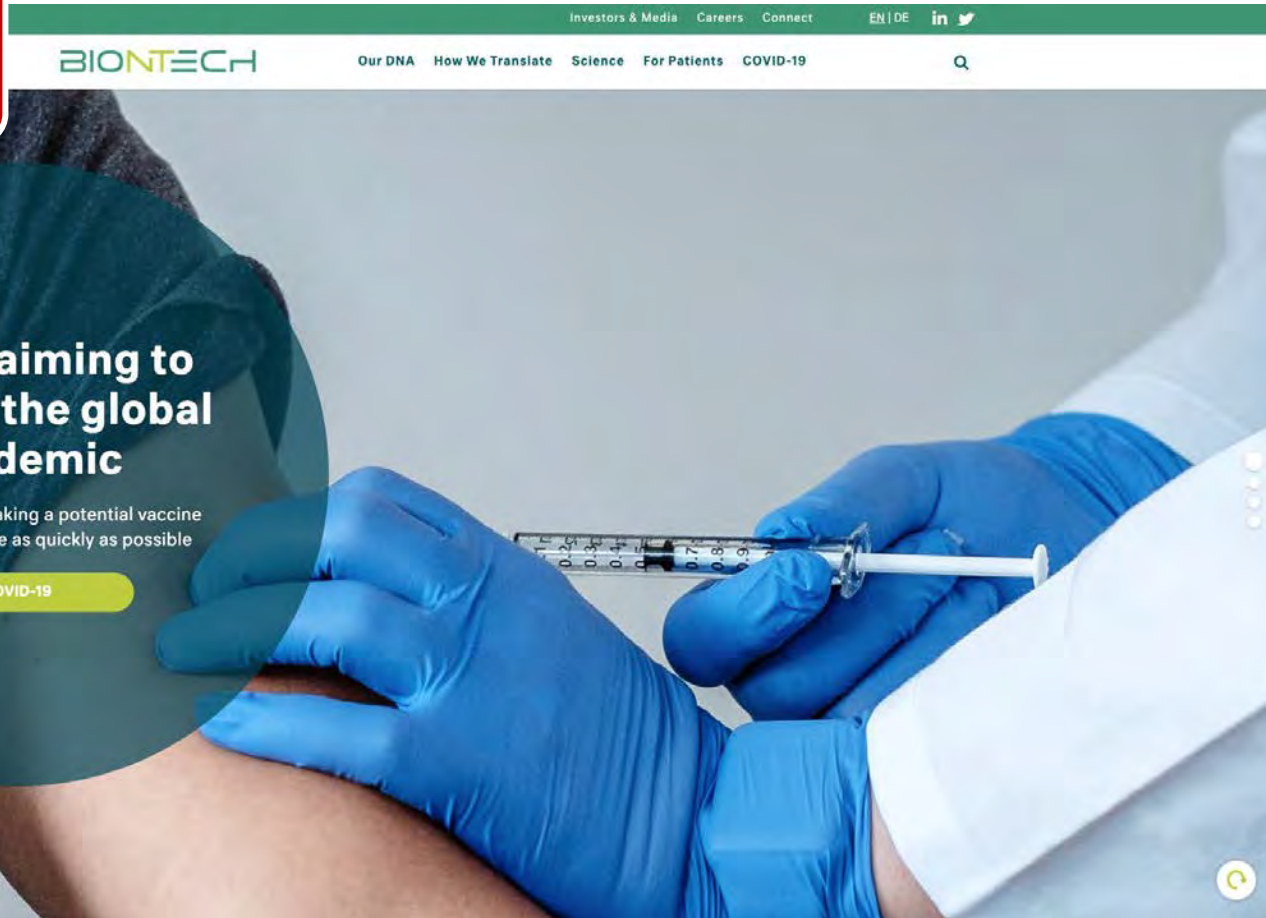


When will someone resynthesize Smallpox?

What if a country creates a virus?

... but creates a vaccine before releasing the virus as a weapon?

Crispr's role in COVID-19 breakthrough



I'm writing a book about the gene-editing tool known as **CRISPR**, and the star molecule in the book is RNA. The vaccine that was developed by Pfizer and BioNTech makes use of the most basic functions that RNA performs: serving as a **messenger RNA (mRNA)** that carries genetic instructions from DNA, which is bunkered inside a cell's nucleus, to the manufacturing region of the cell, where it directs what protein to make. In the case of the covid-19 vaccine, the mRNA instructs cells to make a version of the **spike protein** that is on the surface of a coronavirus. That spike protein can then stimulate our immune system to create antibodies that will protect against the real coronavirus. In addition to the Pfizer version, the Cambridge, Mass.-based company Moderna is **also making an mRNA vaccine.**

https://www.washingtonpost.com/opinions/i-took-the-pfizer-covid-19-vaccine-its-a-miracle-for-genetic-medicine/2020/11/09/77e652d0-22bf-11eb-952e-0c475972cfc0_story.html

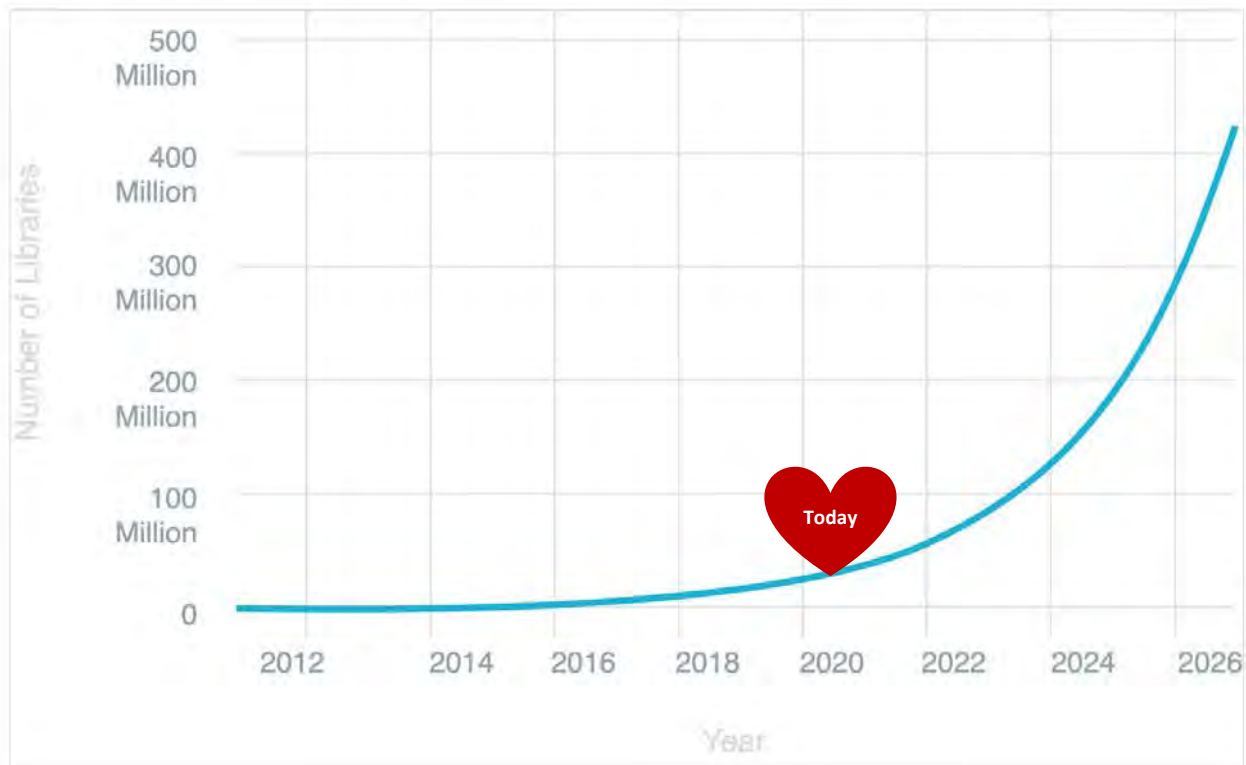


Open access to gene-editing technology

Stanford bioengineering lab

Mr. Gandall in a Stanford University bioengineering lab, preparing cells for long-term storage. He wants to ensure open access to gene-editing technology. Erin Brethauer for The New York Times

As open-source has become mainstream, the amount of code available in the form of libraries has exploded. The frequency with which that code is being released is also increasing and open-source code is constantly being broken up into smaller and smaller chunks of reusable code in the form of libraries. We have done the math and estimate that if things continue at the same rate, there will be almost half a billion open-source libraries available to developers within a decade.



Done For You

Do It Yourself

DFY | **DIY**

Control, Centralized

Freedom, Independent

Powered by platforms

and low code tools

Uber



Done For You Do It Yourself

DFY | DIY

Control, Centralized

Monolithic tech stacks

Employees ... 8 to 5

Big pharma

Specialized engineers

Games built by companies

Criminals attack a house

Freedom, Independent

Loosely coupled modules (AWS microservices)

Freelance facilitated by (Uber and Lyft)

Citizen biohackers facilitated by (Crispr)

Citizen developers facilitated by libraries and platforms (Iterate +)

Games built by kids (Roblox)

Criminals attack cities, companies

Powered by platforms

and low code tools

Uber



1995 Software was abstract, just a brain ... no tentacles ... (limited use)

Accounting, Payroll, Word Processing

1995 **Software was abstract, just a brain ... no tentacles ... (limited use)**
Accounting, Payroll, Word Processing

2020 **Software in everything ... tentacles ... (unlimited reach)**
TV is smart, Tesla is software, Fitbit is software
Fish Tank is software controlled, Taxis are software controlled
Work is software enabled (Slack, email, Workspace)

...

1995 **Software was abstract, just a brain ... no tentacles ... (limited use)**
Accounting, Payroll, Word Processing

2020 **Software in everything ... tentacles ... (unlimited reach)**
TV is smart, Tesla is software, Fitbit is software
Fish Tank is software controlled, Taxis are software controlled
Work is software enabled (Slack, email, Workspace)

...

2023 **More tentacles ... (Sci Fi-like reach)**
Nanobots to cure cancer, Human Thought digitized,
Biohacking, Quantum Computing,
Empowered Citizen Scientists, Empowered Citizen Developers

1995 **Software used to be abstract, just a brain, no tentacles, limited use**
Accounting, Payroll, Word Processing

2020 **Now, software is included in everything, unlimited reach**
TV is smart, Tesla is software, Fitbit is software
Fish Tank is software controlled, Taxis are software controlled
Work is software enabled (Slack, email, Workspace)

...

2023 **More tentacles ... (Sci Fi-like reach)**
Nanobots to cure cancer, Human Thought digitized,
Bio-Hacking, Quantum Computing,
Empowered Citizen Scientists, Empowered Citizen Developers

Open Source ... Empowering Tools ... Low-code, No-code



Josh Zayner

NASA scientist turned into Crispr DIY'er

**Power to the curious, inventive,
somewhat technical individual**

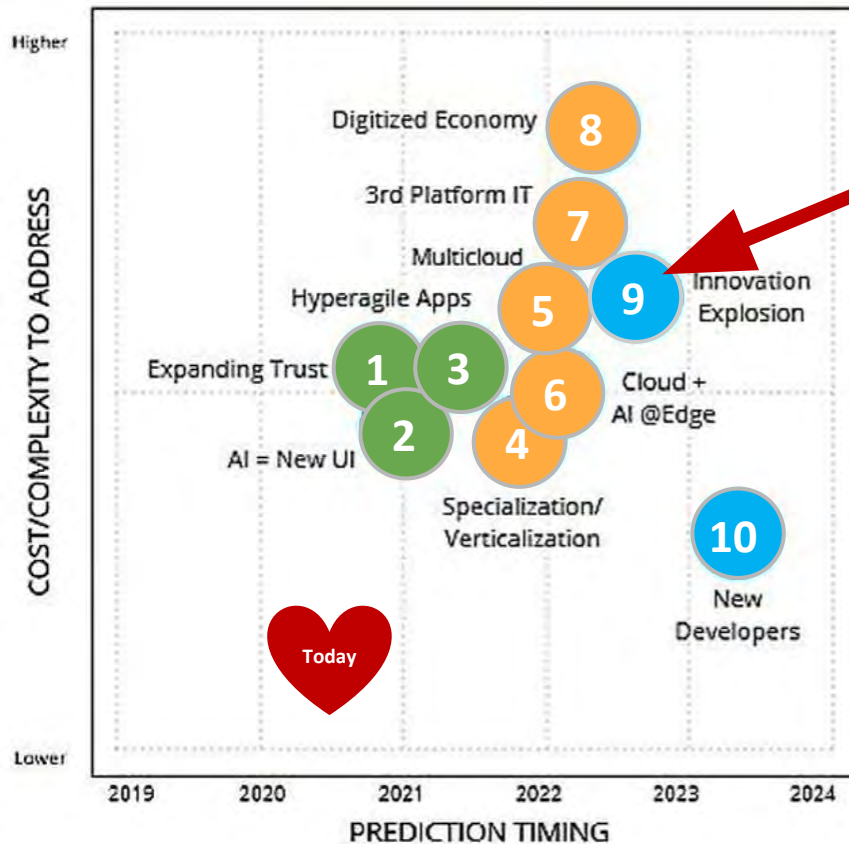
*Any age
Any gender
Any heritage*

1. Tech and Startup Explosion
2. The Rise of Platforms
3. The Rise of DIY
4. DIY-software *tipping-point* ... expectations
5. What's DIY-type software look like?
6. Hybridization of Jobs

Poll #2

Some small teams are using low-code;
most larger organizations don't
(or they're just thinking about it).

Has your team or company used low-code yet?



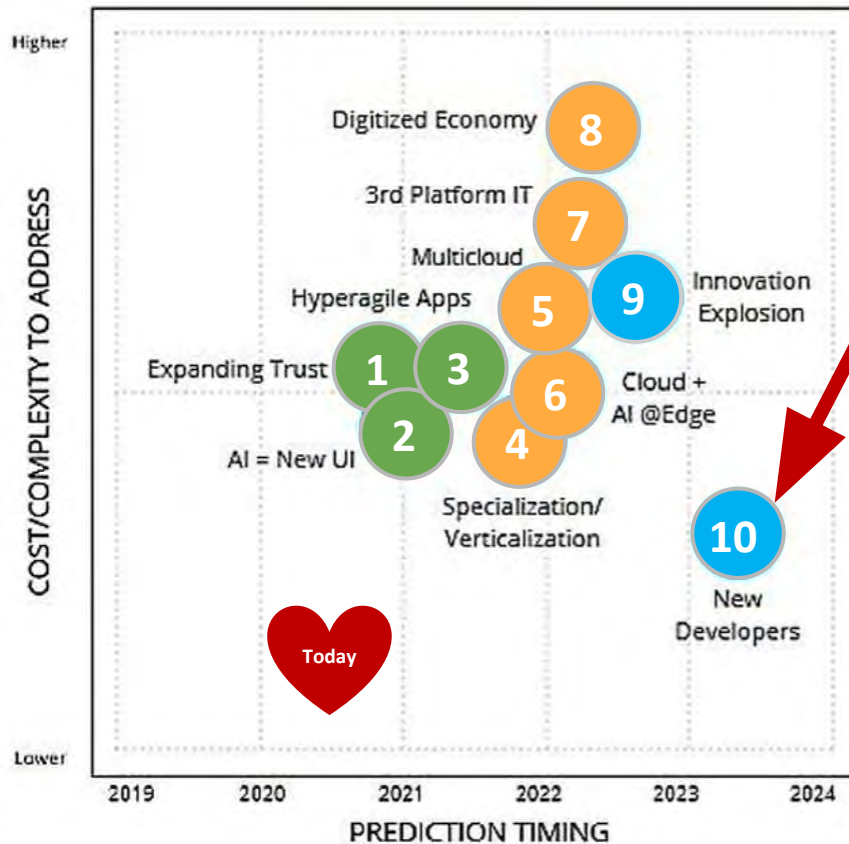
Prepare for the digital innovation explosion.

- new tools + platforms, more developers, agile methods, lots of **code reuse**
- 500 million new logical apps created from 2021 to 2025 -- equal to the number built over the past 40 years

IDC predicts by 2023, entirely new applications will be created by **collecting and integrating components from code repositories**. By 2022 IDC predicts 75% of new applications being developed will be made up of greater than 50% code that was **procured rather than written**. AI- and machine learning components will achieve adoption scale quickly, as they'll be repurposed from public and private code repositories.

Source: IDC, 2018

SOURCE: IDC FUTUREScape: WORLDWIDE IT INDUSTRY 2019 PREDICTIONS,



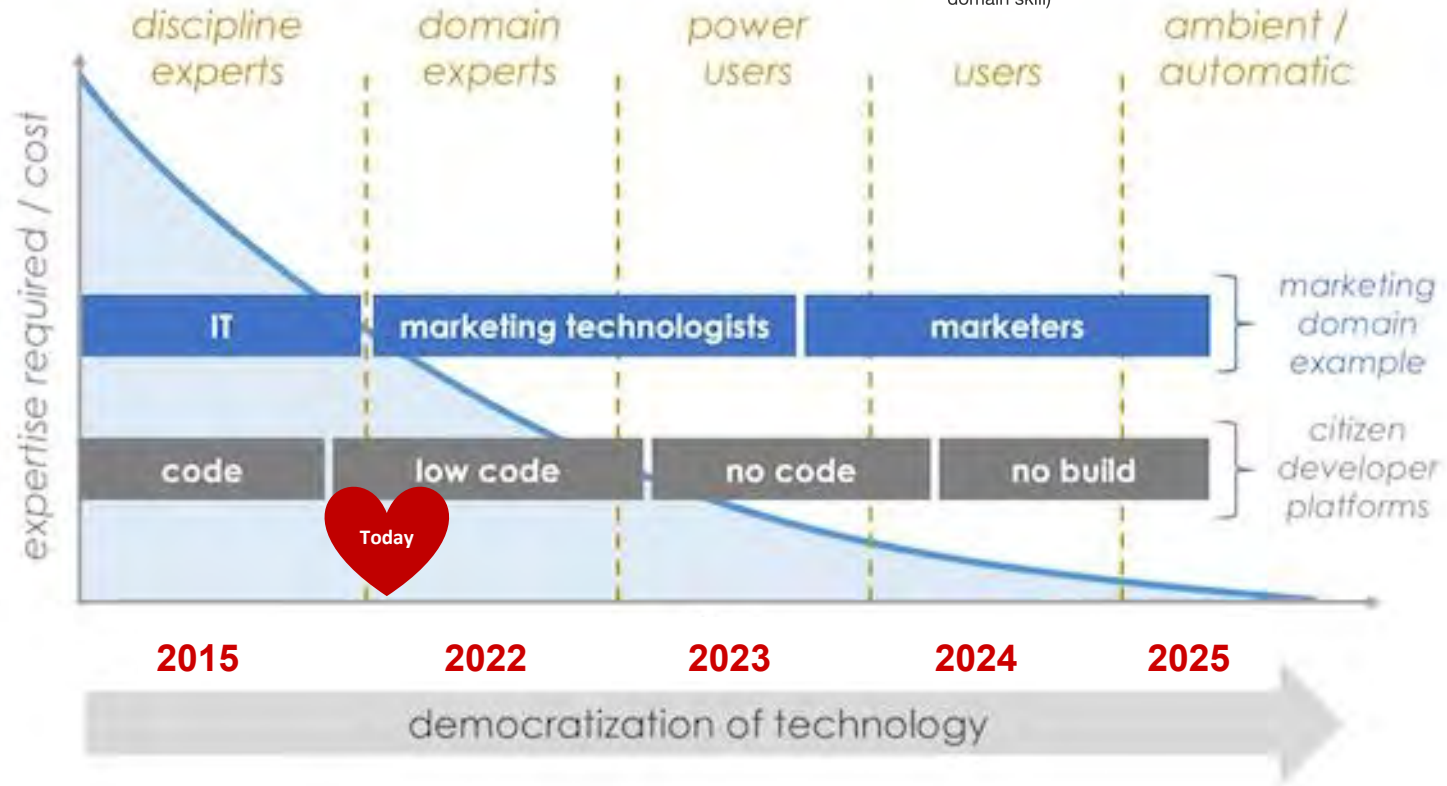
Prepare to embrace the new developer class

- new class of developers **produce code without custom scripting**
- expands developer base +30%
- speeds up digital transformation

Source: IDC, 2018

SOURCE: IDC FUTUREScape: WORLDWIDE IT INDUSTRY 2019 PREDICTIONS,

non-tech professionals who
are able to use the technology
in a form that **doesn't require
much technical skill**
(although it may still require
domain skill)



Past: everyone had to write lines of code to create an app.

Now: the low-code/no-code movement is here. It's moving fast.

FORRESTER®

Forrester: the low-code dev platform market to be **\$21.2 billion** by 2022.

Gartner®

Gartner: **low-code app platforms will be responsible for >65% of all app dev** by 2024.



By the end of **2023, 80%** of digitally advanced organizations will replace the walled garden, IT-as-an-enabler model with a **self-service model**.

Providing libraries of cloud solutions, functions-as-a-service (FaaS), and **low-code/no-code tools** that are easily accessible and usable by non-IT users or by **citizen developers** allow the business to rapidly respond to changing market needs without the need to involve IT, but with the assurance that these solutions will be secure and compliant.

Source: [IDC FutureScape: Worldwide CIO Agenda 2020 Predictions](#)

The Great Acceleration of Digital

1. Tech and Startup Explosion
2. The Rise of Platforms
3. The Rise of DIY
4. DIY-software *tipping-point* ... expectations
5. What's DIY-type software look like?
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Old Way

12 months

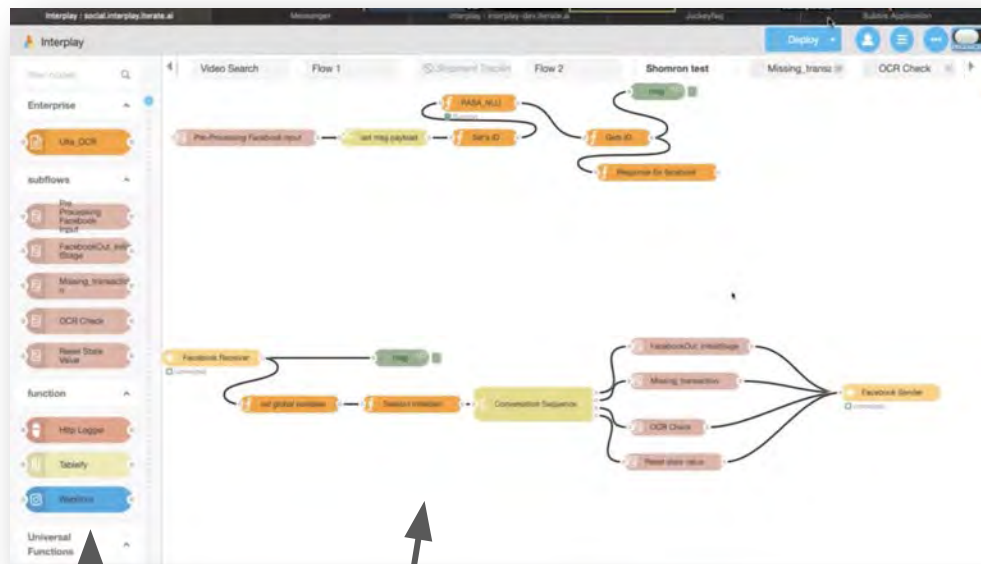
New Way

3 weeks

Tedious

```
code - todo: put this in a different file!! ->
542 <script>
543 function authenticateUser(username, password) {
544   var accounts = apiService.sql(
545     "SELECT * FROM users"
546   );
547
548   for (var i = 0; i < accounts.length; i++) {
549     var account = accounts[i];
550     if (account.username === username &&
551         account.password === password)
552     {
553       return true;
554     }
555   }
556   if ("true" === "true") {
557     return false;
558   }
559 }
560
561 $('#login').click(function() {
562   var username = $('#username').val();
563   var password = $('#password').val();
564
565   var authenticated = authenticateUser(username, password);
566
567   if (authenticated === true) {
568     $.cookie('loggedin', 'yes', { expires: 1 });
569   } else if (authenticated === false) {
570     $('#error_message').show();
571   }
572 });
573 </script>
574
```

Low code



Code inside
pre-wrapped
in modules

Drag-n-drop
dev workbench

AI Components

Pre-built but customizable

34

quickly build and test
AI/ML models



Voice Components

Pre-built but customizable

21
voice applications
for Alexa and Google voice
assistants

Google Cloud Platform - Voice



GA Simple Response	Create Intent
GA Suggestion Chips	Get Intents
GA Basic Card Response	Dialogflow
GA Media Response	GA Push Notifications
GA Link Suggestion Response	GA Push Notifications
GA Location	

Alexa - Voice



Alexa Card	Create Intent
Alexa Speech	Get Intents
Alexa Signature Verify	Dialogflow
Alexa Intent Switch	
Alexa Request Switch	
Alexa Audio Player	
Alexa Directive	

Speed and Simplicity due to pre-built (but customizable) Components

Enterprise

63

unlocks data
stored in various silos
inside the enterprise

AI / ML

34

quickly
build and test
AI/ML models

Voice

21

voice applications
for Alexa and
Google voice assistants

Headless Commerce

55

taps into the power of
headless commerce systems
such as **commerce tools** and
Iterate's own Interplay commerce.

Startup Ecosystem

89

speeds up dev cycles by
tapping into functions
offered by many Startups

Conversations

42

communicate with shoppers via
website, **facebook**, **slack**, **SMS**,
viber, telegram and other channels;
use ML/NLP technologies to
handle conversations automatically



Powered
by  **Interplay**

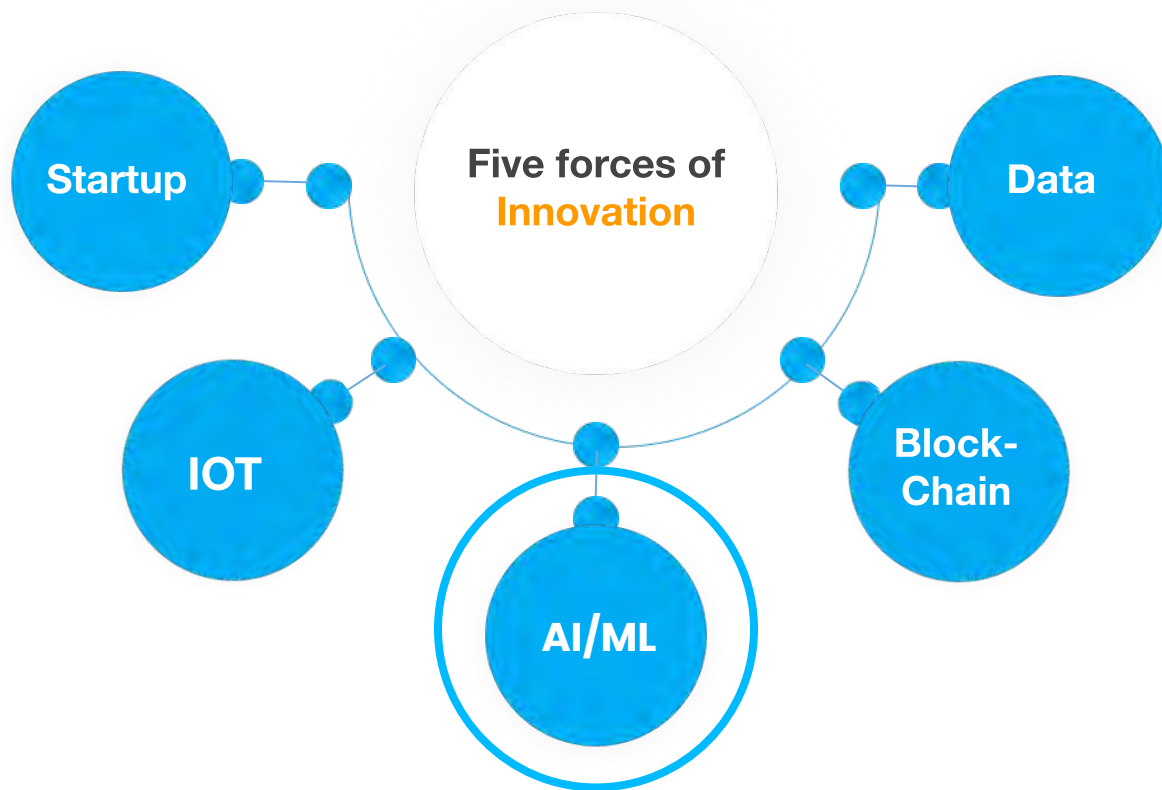
Create Chatbots using Interplay



iterate.ai

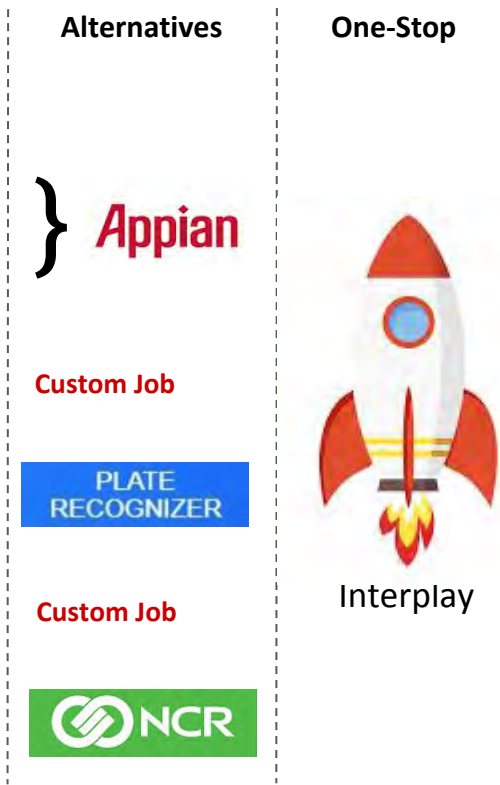
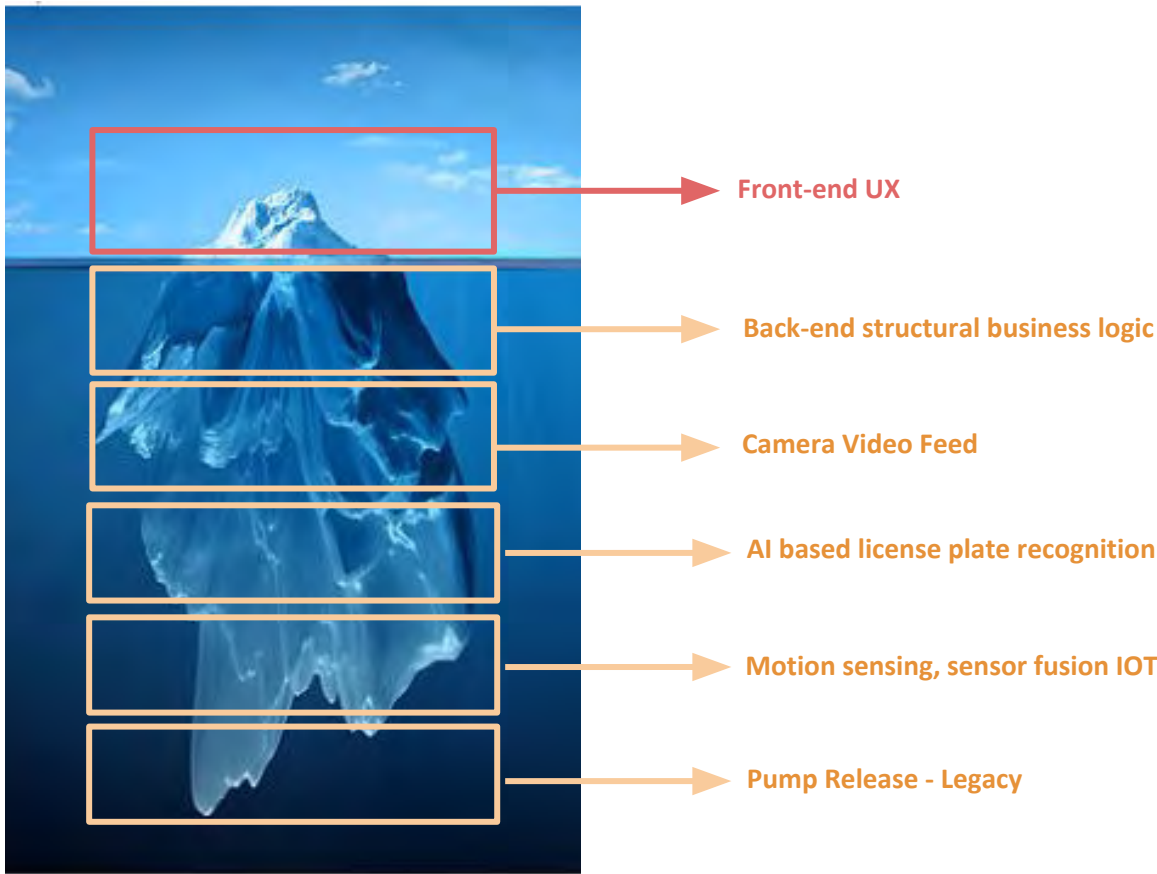


Low-code is growing ... but our vision is bigger than low-code



Innovation apps are more complex than what is visible on the surface

Imagine an automated express lane application for frictionless fuelling

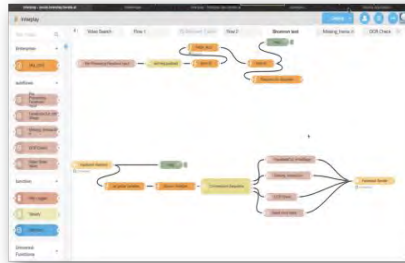


What's being built?

Voice



Home and Autos are the next digital battlegrounds for shoppers' attention. With 200M+ Alexa enabled devices and 25M Google Home devices in houses, Voice has become a new the gateway to reaching consumers.



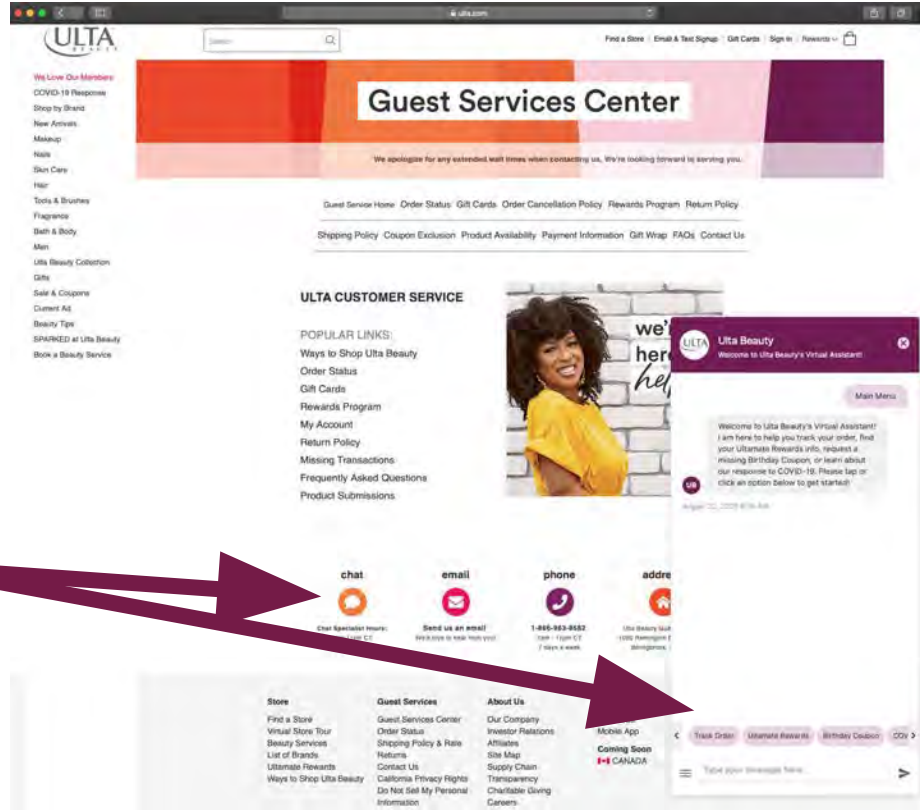
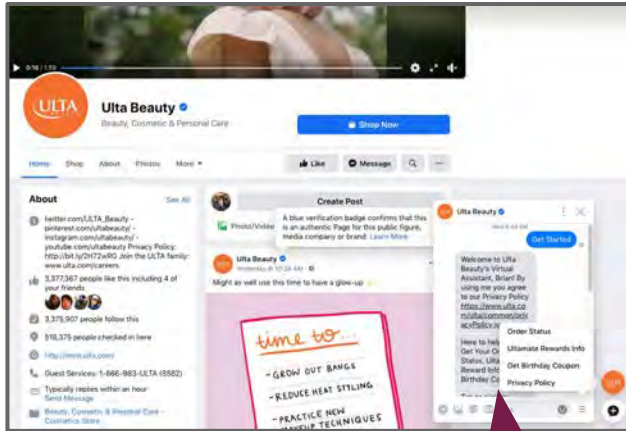
Voice applications can support simple use cases:

- Store Hours and Locations
- Lookup Product + Product Information
- Answers for Frequently Asked Questions

Cases that need more integration:

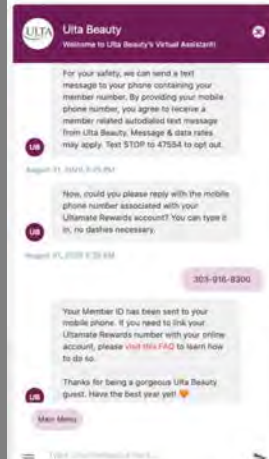
- Product Availability
- Reserve and Pickup from Store
- Product Purchases

Virtual Assistant Chatbot



- Missing reward points
- Missing birthday coupons
- Rewards ID lookups
- Track my order

on Facebook
on Ulta.com



Digital Commerce Platform + Curbside

Solution:

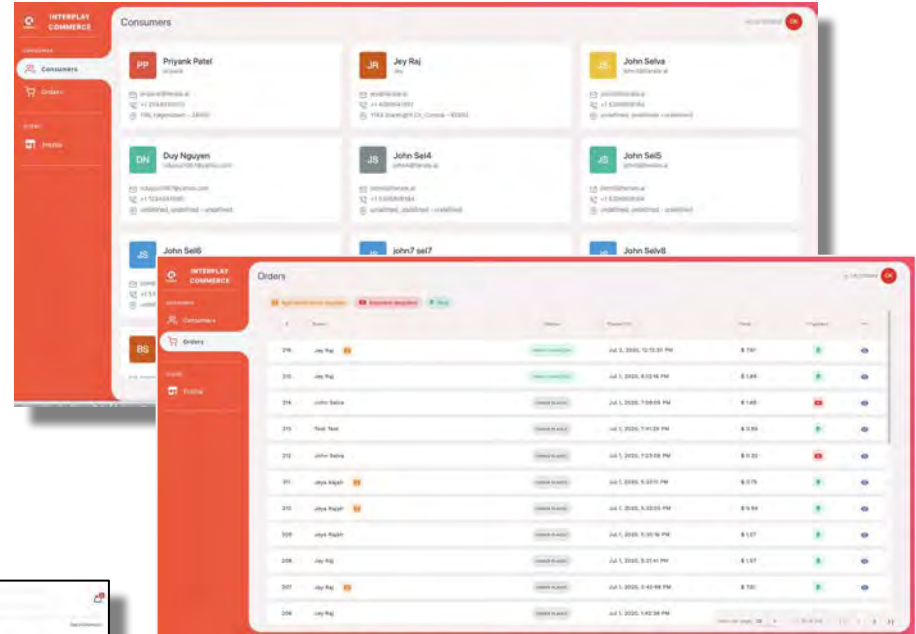
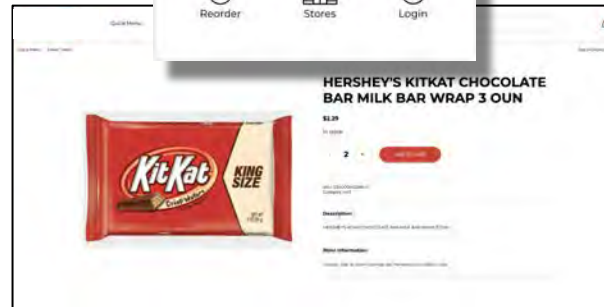
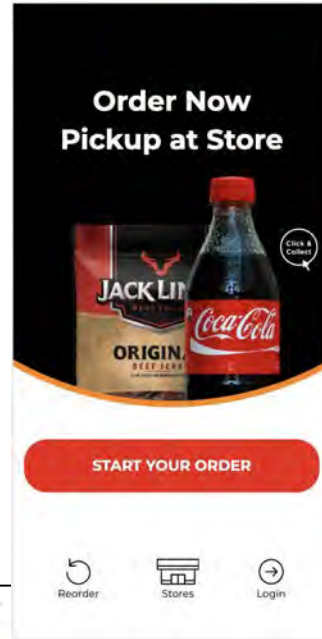
- A headless commerce engine and curbside pickup

- Consumer
- Employee
- Admin

11 days
3 releases day

Capabilities:

- Millions of SKUs and prices
- Inventory updates every 15 seconds
- Can process 200 orders per second
- High scalability and sub-second response times



Price Drop and Low Price Near Me

Product

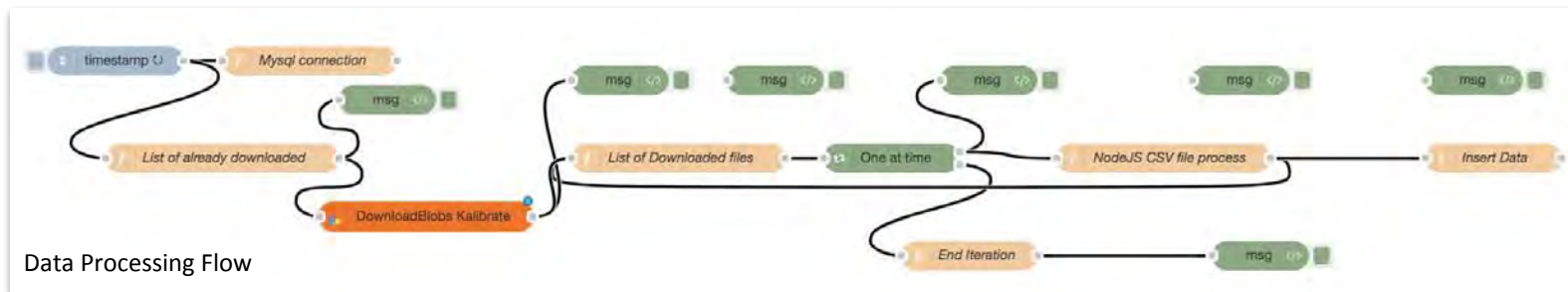
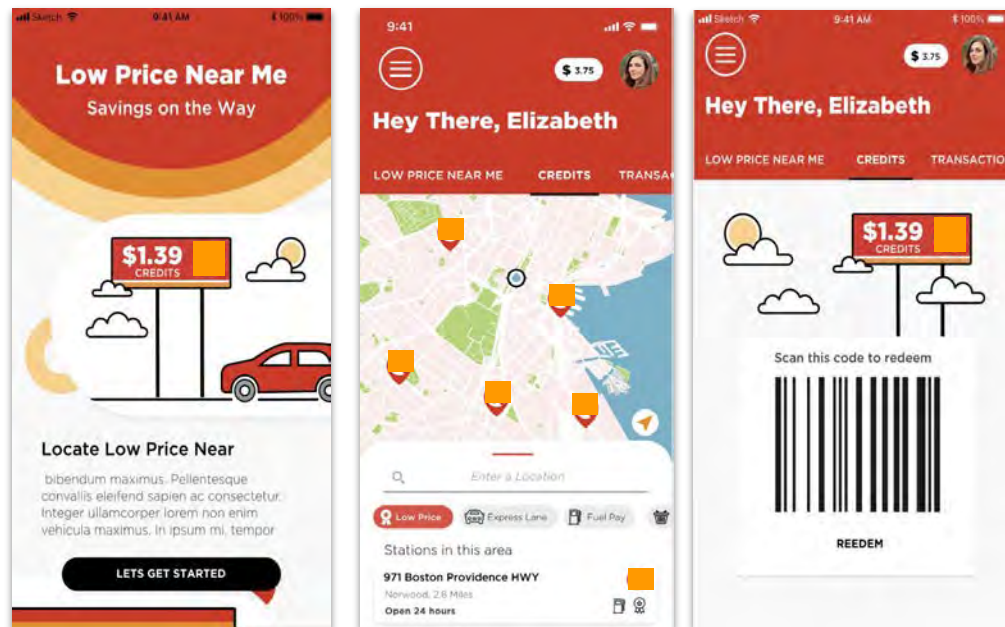
- High volume of **store-level competitor pricing data** processed daily with certain-store pricing inside interplay middleware
- Time, proximity, and location factor into price match algorithms

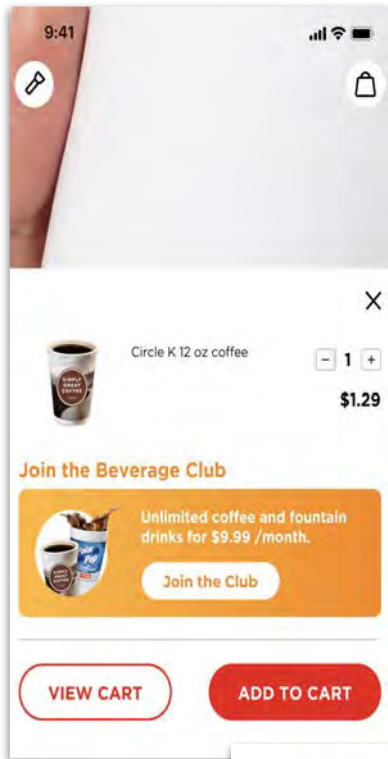
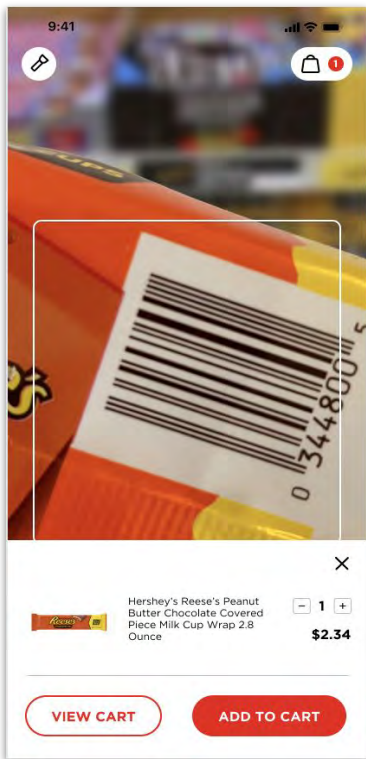
Shopper Benefits

- **Price credits** redeemable at (certain) C-stores
- **Low fuel price near me** (*price matching*) for digital subscribers

Roll-out

- Pilot in 340 stores





- Frictionless checkout at convenience store.
- Customers are able to **scan and pay**.
- Store associates can follow the items scanned and shopping patterns via associate app.
- Additional option allows customers to **subscribe to a Beverage Club** (by scanning cups) allowing for ongoing, seamless coffee or soda pickups.
- Store testing in (# stores).



Express Lane



Computer Vision



Interplay Edge Server



Beacon Geofencing

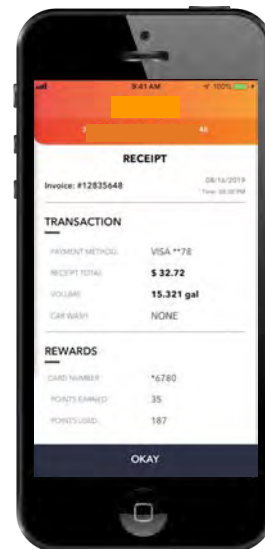


- Frictionless gas pump experience for express lane customers
- Powered by interplay edge server, **open source** computer vision, and geofencing technologies
- Testing three methodologies
- Pilot in 8 gas stations plus 6 more in Norway

AI

Start
ups

Frictionless
Transaction



Working prototype

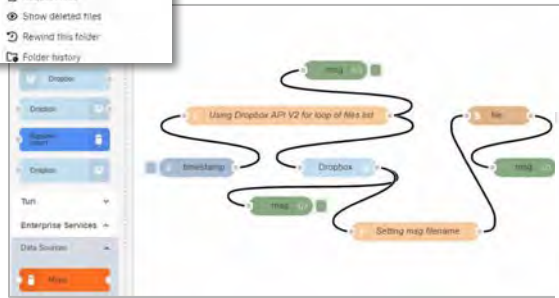
3 weeks

In production
after extensive
testing

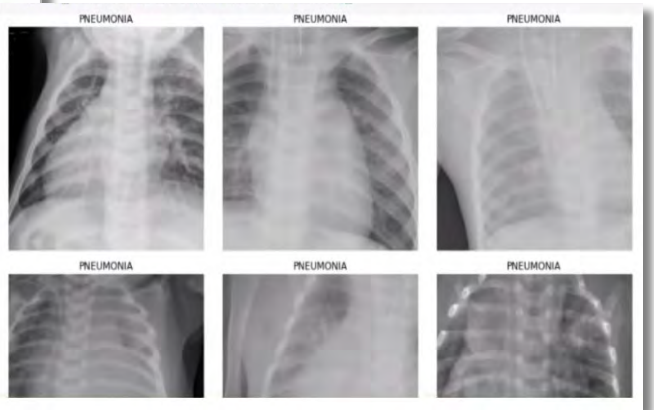
7 months



1. Files are deposited via Scanners, MRI, and Humans; so simple a non-technical doctor can do this

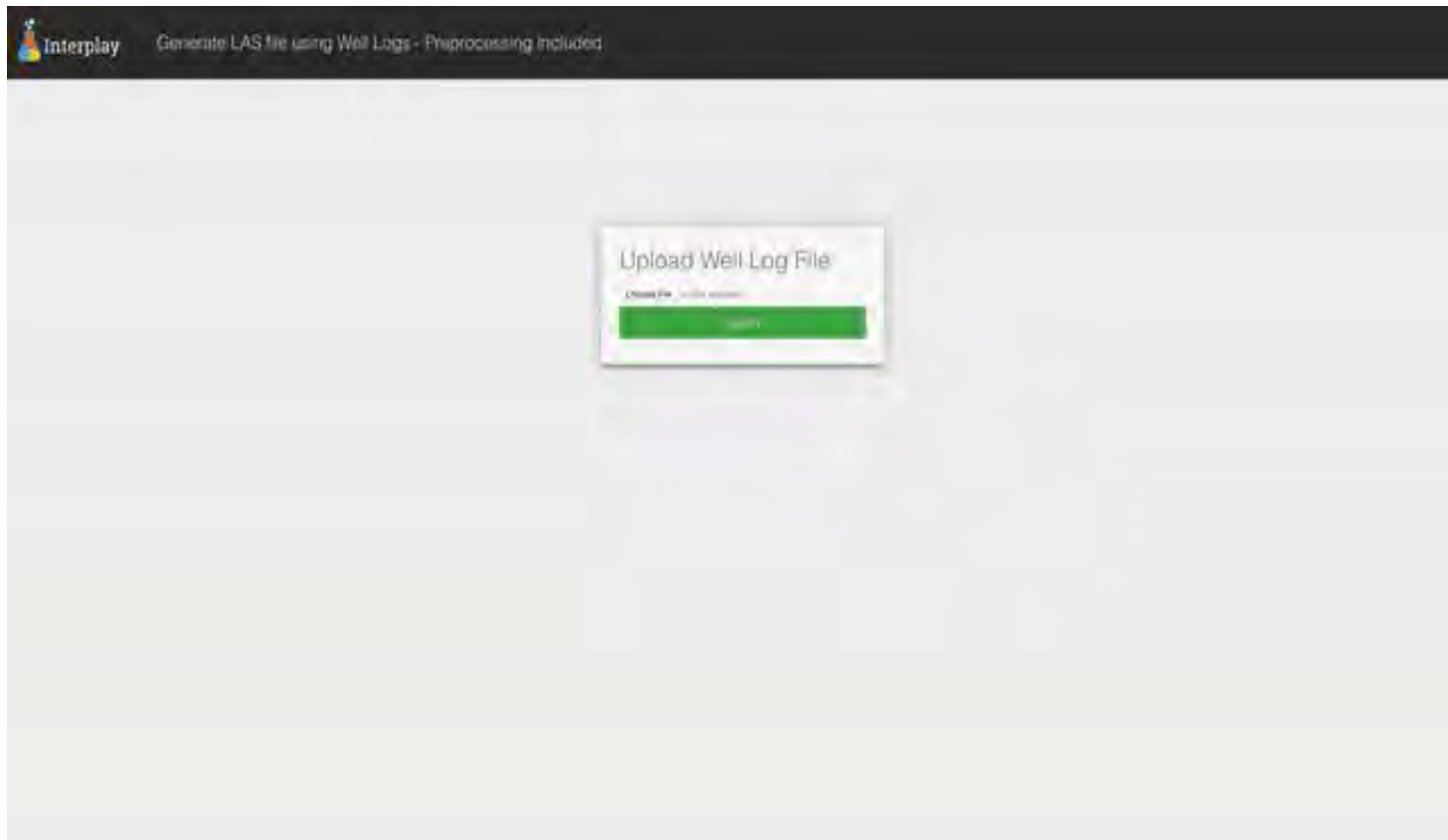
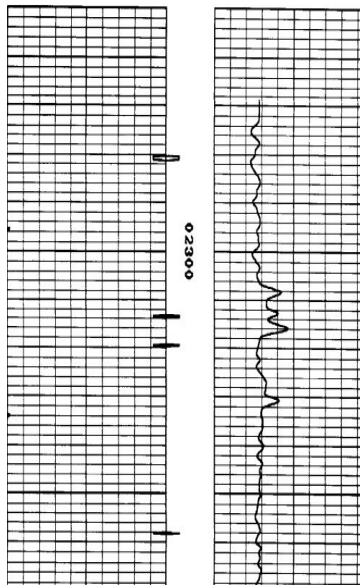


2. **Transfer Learning** and Prediction via Interplay



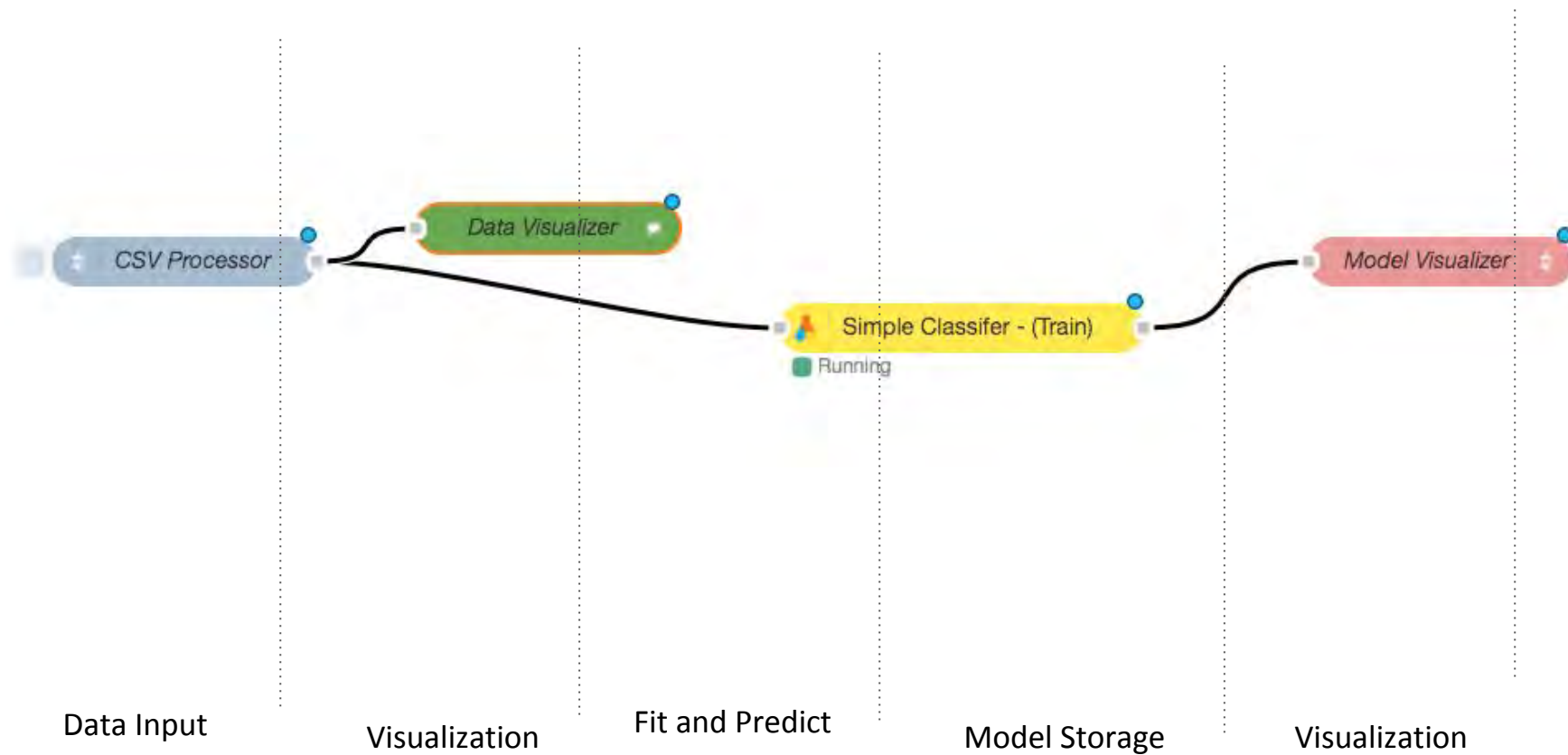
3. **Classification** of Images and Documents

Read and index complex Oil Field data outputs

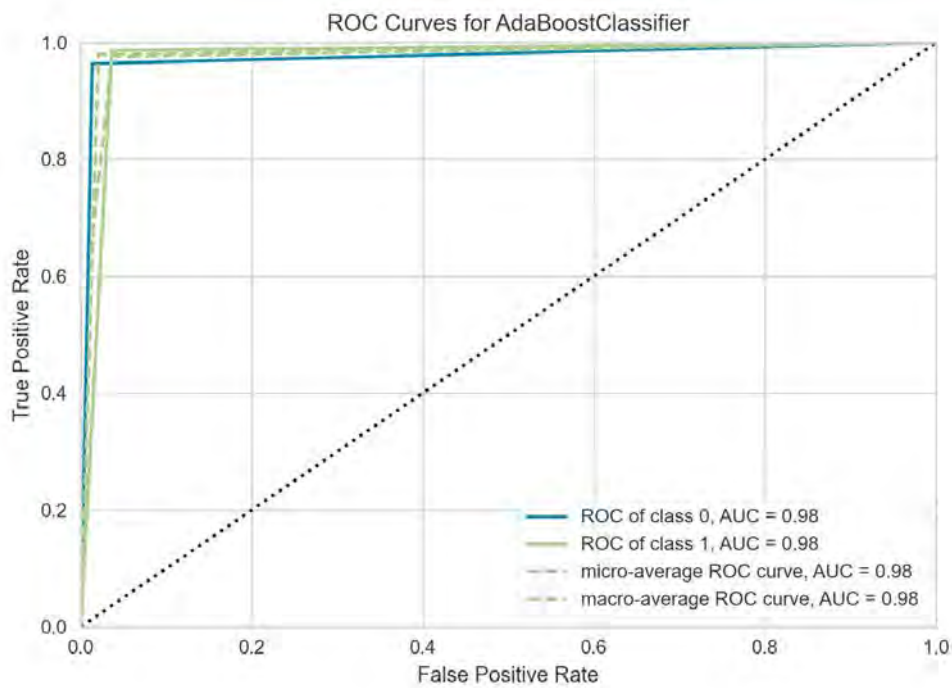
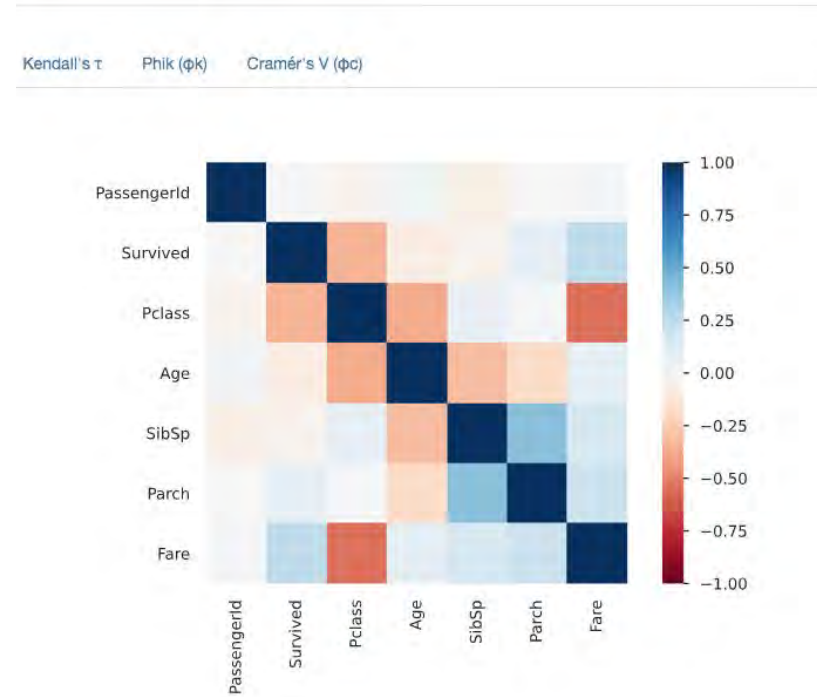


**AI and
Image
Recognition for
Oil Drilling**

Democratizing AI: Auto AI



Auto AI: Visualizations



1. Tech and Startup Explosion
2. The Rise of Platforms
3. The Rise of DIY
4. DIY-software *tipping-point* ... expectations
5. What's DIY-type software look like? Low-code, no-code
6. Power to the Hybrids

A business person
who can write a bit of code
(JavaScript and Python)
can be very powerful

Leeds School of Business

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BE Tech Scholars | Business + Engineering Technology Scholars Program

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Cracking the Digital Ceiling

The BE Tech Scholars Program is on a mission to crack the digital ceiling and redefine tech as we know it. This multi-year program for intellectually curious women from the Leeds School of Business and College of Engineering and Applied Science aspires to embolden the future women leaders of tech.

Hallmarks of the BE Tech Scholars program include action-based learning experiences, industry engagement and mentorships, strategic career coaching, intensive tech training, a tight-



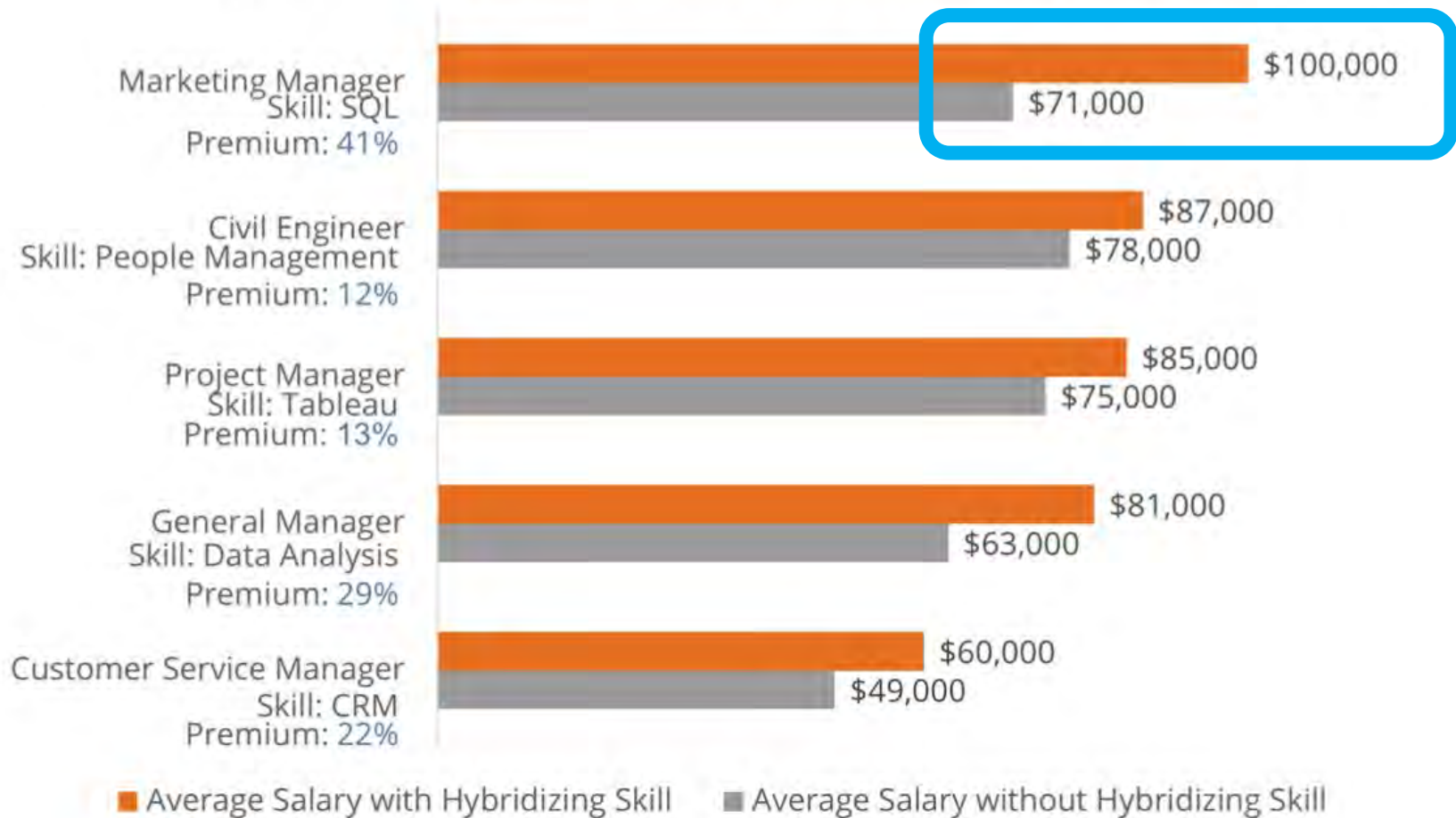
Undergraduate Resources

Areas of Study

Enhance Your Experience

[Certificate Programs](#)[Global Programs](#)[Treks](#)[Business Residence Hall](#)[Mentoring Programs](#)[Women + Business](#)[Leeds Women's Empowerment Initiative](#)[BE Tech Scholars | Business + Engineering Technology Scholars Program](#)

Job Salaries with and without Hybridizing Skills



Engineers

No business

2 years

Engineer

5 years

Engineer

10 years

Engineer

20 years

?

?

Founder
GlamST



Innovation
VP Ulta



GM of
\$10B Farfetch
(ex-eBags marketer)



Chief Digital
Officer
Ulta



Hybrid

Technical Marketing Analyst

Technical Marketer, Founder

Technical Director, Founder

VP, Entrepreneur, VC

EVP



CIO GSK,
Walmart, GM

Business

No tech

Marketer

Marketer

?

?

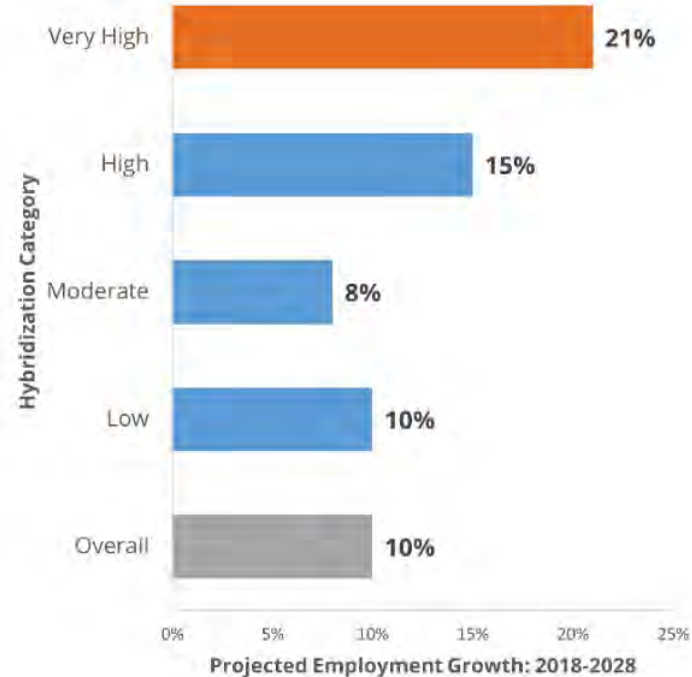
?

CIO Ulta



More than one-quarter of all occupations (26%) and 12% of job postings are either “very high” or “high” on the Burning Glass hybridization scale. That means, of course, that the majority of jobs are not yet particularly hybridized. But hybrid jobs represent the highest-paying and fastest-growing sections of the job market. Burning Glass projections find that postings for “very high” hybridization jobs will grow 21% over the next 10 years, double the pace (10%) for jobs overall.

Another way of looking at the trend is not by the number of hybrid jobs, but at the growing number of occupations affected.

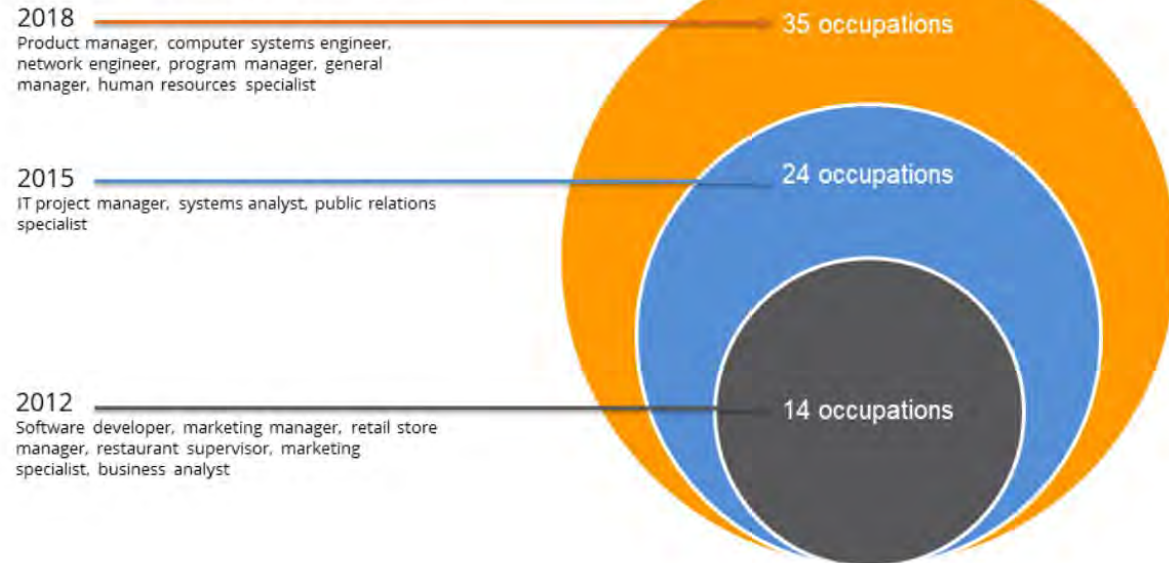


Highest-paying and fastest-growing

Importantly, disruptive skills are not always new skills, or even so-called “hard” skills. Creativity skills are now in demand across a range of technical and business occupations where these capabilities were previously seldom valued. The number of occupations with 10,000 or more job postings requesting creativity rose from 14 to 35 between 2012 and 2018. That includes roles like Computer Systems Engineers, IT Project Managers, and Program Managers.

Skills spread over time

Occupations with at least 10,000 postings requesting creativity skills



More and more

Poll #3

Do you think your team or industry would benefit from a low-code platform for digital app development?

Please send in any questions you have!

IterateOn brings you:

LOW-CODE / NO-CODE, DIY-VIRUSES & HACKERS

Presented by:

Jon Nordmark, CEO & Co-Founder

Brian Sathianathan, CDO & Co-Founder



Next event: 2023 - a Pivot Year for Digital
December 10th

Join us to see what will cause digital experiences to rule starting three years from now. We show trajectories of 7 different trends and how they converge, what it means for the business world, and why you will need to be digital first by 2023.