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Technology Year in Review

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Reference Librarian

Trends of the Year

- Tech Has Gone Big… Very Big
- Fewer Dramatic Breakthroughs
- Enhancement of Previous Technologies
- Technology becoming ubiquitous, it's everywhere and hard to separate it out
- We're becoming more and more dependent on Technology

Digital Giants

Projection

By 2021, 20 percent of all activities an individual engages in will involve at least one of the top-seven digital giants.

The current top-seven digital giants by revenue and market capitalization are Google, Apple, Facebook, Amazon, Baidu, Alibaba and Tencent. As the physical, financial and health care worlds become more digital, many of the activities an individual engages in will be connected. This convergence means that any activity could include one of the digital giants.

Fake News Infects Facebook

The spread of fake news emerged as a serious problem during and after the election, as skilled trolls learned they could make gobs of cash by writing up whatever conspiracies would be shared by those parts of the American public that had lost faith in the mainstream media

Explosive Galaxy Note7

Shortly after launching to critical acclaim, Note7's started inexplicably exploding, and Samsung issued a global recall. Replacements with "safe" batteries were supposed to fix things, but they, too, started catching fire and eventually forced Samsung to discontinue the phone entirely.

Samsung was poised to race past the iPhone with the Galaxy Note7. The Note7 had everything going for it — a beautiful curved glass design, a high-res screen, long battery, life, etc. — until disaster struck.

Bad Year for Samsung

And Then This …

Apple versus the FBI

Arguably the most impactful thing Apple did this year wasn't a product launch — it was drawing a line in the sand when it comes to iPhone privacy.

Apple versus the FBI

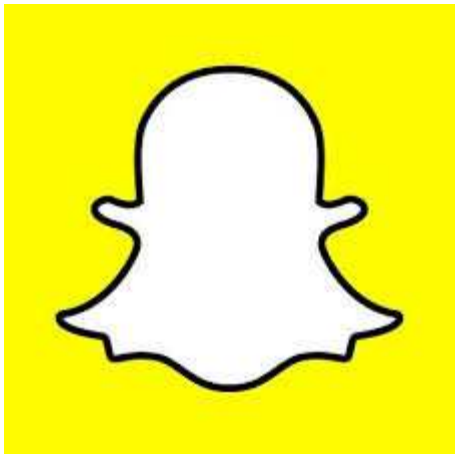
In the end, the FBI backed down — it apparently found another method for cracking the iPhone in question — but not before the debate had CEOs, law enforcement, privacy advocates and even presidential candidates taking sides.

While this specific case has faded away, the debate over digital privacy and "warrant-proof" data still rages today.

Apple Headphone Jack Disappears

Despite being a near-universal standard used in devices worldwide, the eminently functional 3.5mm jack couldn't survive Apple's determination to shape the future — one where audio is wireless. In the present, however, cords still rule, and Apple's big move has given us all dongles to lose, essentially mainstreaming inconvenience. (It's also forcing grown adults to say the word "dongle.")

Snapchat sets the bar for digital cool



As the company made some of its biggest advances — photo saving (!!!) in Memories, a rebrand (hello, Snap), hardware launch and IPO — Facebook, naturally, panicked and doubled down on its efforts to push Snapchat aside, cramming filters, animations and disappearing messages into all corners of its apps.

The fact that most of these efforts have been met with little more than a yawn and an eye roll says less about Facebook and more about the sheer dominance of Snapchat, which has cemented its place as the hippest social app around.

Self Driving Cars

This was the year development of driverless cars shifted into high gear. Tesla pledged to include an enhanced, completely self-driving Autopilot in all models, and Uber was the first ride-sharing company to put driverless cars on the road, starting in Pittsburgh.

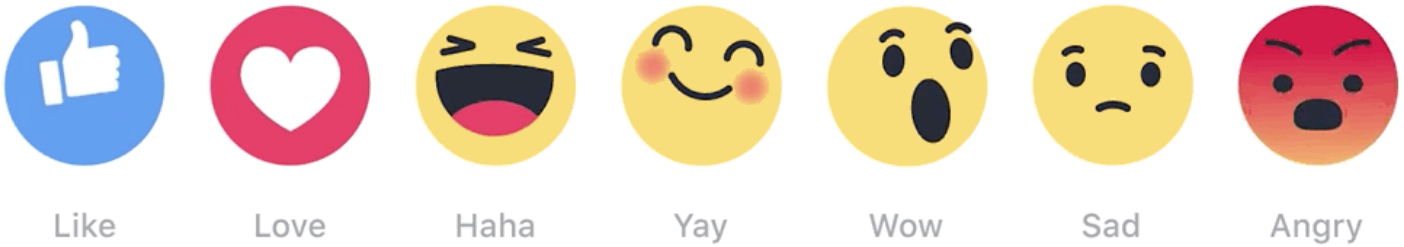
Traditional auto manufacturers got in on the action, too. Audi showed off its driverless tech, and GM partnered up with Lyft — moves that might put Detroit into pole position in the self-driving race.

But it wasn't all easy riding: Apple's "Project Titan," reportedly ran out of gas by the year's end, Google's self driving program had its first (extremely minor) accident, and a tragic crash killed the driver of a Tesla, reportedly in Autopilot mode.

Self Driving Cars

Facebook Emojis

Facebook released new emoji reactions to augment the "like" function. Instagram stories, too, offered users new, fun ways to alter their images, including the addition of text—previously unheard of in the Instagram world.



Live Video

Live video started to become popularized with the development of the streaming app Periscope back in 2015, but only this year did the medium truly start to take off. Live video is an easy and effective way to interact with people, especially if you use a question and answer style format or another medium that encourages participation. Since it's still relatively new, you can expect it to continue growing into 2017 and beyond.

The Rise of Facebook Live

Though a little late to the party, Facebook Live has quickly proven to be a hit, not just for serendipitous viral content (hi Chewbacca lady), but as a powerful tool for real-time reporting, capturing everything from sports to insurgencies as they unfold.

Compared to traditional live broadcasts, Facebook Live provides a look through a person's eyes, completely unfiltered and unedited, and allows viewers to tune in and engage with comments and reactions in a more direct way

The Rise of Facebook Live

Pokemon Go

Pokémon Go quickly became a global phenomenon and was one of the most used and profitable mobile apps in 2016, having been downloaded more than 500 million times worldwide. It was credited with popularizing location-based and augmented reality technology, promoting physical activity, and helping local businesses grow via foot traffic.

Pokemon Go

However, it also attracted controversy for contributing to various accidents, as well as becoming a public nuisance at some locations.
Players create and customizes their own avatar. As players move within their real world surroundings, their avatar moves within the game's map.

Augmented Reality

Projection

By 2020, 100 million consumers will shop in augmented reality.

The popularity of Augmented Reality applications, such as Pokémon GO, will help bring AR into the mainstream, prompting more retailers to incorporate it into the shopping experience. Using Augmented Realty applications to layer digital information — text, images, video and audio — on top of the physical world, represents one such route to deeper engagement. For example, a consumer pointing the IKEA catalog app at a room in his home can "place" furniture where he'd like it to go.

Apps - Spotify

Listen to the music

Even with Apple, Amazon and Google all taking aim, Spotify is still king of the music streaming apps. A big redesign this year brought a more modern interface that's still dead simple to use, and gorgeous to boot. A favorite feature is the mood-based playlists, great when you need something for a rainy day or a morning workout.

Apps: Uber's Quiet Domination

In 2016, Uber became more than a ride-sharing company.

The $60 billion company made its self-driving cars a reality in Pittsburgh and unveiled a plan to control on-demand air travel, too. The Silicon Valley giant raised an unprecedented $3.5 billion in one funding round on its continued quest for world domination.

But it also fought legal battles in London and France, not to mention its ongoing fight in the United States over whether its drivers deserve full worker protections as employees, not contractors. Not to mention, Uber gave up on China almost entirely.

Apps : Prisma

Bring Me Your Photos

Photo editing apps are generally a dime a dozen, all offering slight variations on the same basic features: Film-style filters, crop and resize tools, red eye reduction and so on. Prisma stands out from the pack by using complex algorithms to transform your images into vibrant and unique works of art. A recent update means it can now do the same for video, too. It takes some practice to know which filters will work the best with which photos, but once you nail it, the payoff is sweet

Apps: Google Translate

Give Me Your Words

One of the coolest pieces of fictional Star Trek tech is the Universal Translator, which lets the Enterprise's crew understand alien languages. The next best thing is Google Translate, which can take typed phrases, spoken words and even real-world text (like street signs) and transform them into other languages. This year's big update brought more useful features, like tap-to-translate on Android and offline language packs for the iPhone version.

Apps: Quik

Video Editing

Modern smartphones can record very high-quality video, but what to do with all that footage? Try Quik, an automatic video editing app that action camera maker GoPro acquired and rebranded this year. Quik takes a bunch of your video footage, identifies the best moments automatically, and sets the whole thing to mood-appropriate music. It's a great way to add a professional-looking touch to your recordings before putting them on Facebook, YouTube or Instagram

Apps: Mint

Show Me the Money

Mint's an older app, but it's still the king of budget management software. Mint connects with your various bank accounts, pulling in your spending and income and organizing it into categories that make it easy to track and stick to a budget. It's great in those situations when you're contemplating a big purchase and want to see if you can really afford it or not

Ultra HD or 4K TVs

Ultra HD or 4K refers to a set with four times as many pixels as Full HD and eight times as many as SD sets.

The advantage of such a high resolution is in the amount of detail you will be able to see. From the petals of a flower in a nature program to beads of sweat on an athlete's face, pictures will be incredibly realistic and close to real life.

More Ultra HD/4K content is becoming available to watch. Netflix subscribers can watch favorites like House of Cards and Better Call Saul in Ultra HD.

The price of Ultra HD/4K sets have dropped over the last few years and they are much more affordable and over 50% of TVs sold now support Ultra HD/4K.

Ultra HD or 4K TVs

Devices: Plug & Play Video

Roku Express

In case you haven't used one before, Roku turns your dumb TV into a smart TV. The family of five new products range from the Roku Express for $29.99 to the top-of-the-line Roku Ultra for $129.99. While the premise behind these media players is the same — plug it into your television's HDMI port, join your Wi-Fi and then access more than 3,500 on-demand channels (including streaming video services like Netflix, Hulu, and Amazon Video) — Roku Ultra supports 4K TVs.

Alternatives to Roku:

- Apple TV
- Chromecast

Devices: Anki Cozmo

Kids and kids at heart will no doubt fall for Anki's Cozmo ($179.99), a palm-sized robot that uses its cameras, sensors and smart artificial intelligence (A.I.) to interact with the family and pets. In fact, this curious little dude recognizes people, remembers your name, and scans and navigates its environment. As a reflection of your actions, the "self-aware" Cozmo can reveal his mood with facial expressions, body language, voice, and music. And of course there are many games he (and you) can play with his three glowing power cubes (included), plus there are many other interactive challenges via the iOS and Android app.

Virtual Assisants

Artificial Intelligence was in the spotlight this year when Google released “Home” a smart speaker

This was a response to Amazon’s Echo

Both rely on “virtual assistants” to play music, turn on lights, order food, buy products, etc.

Alexa Jokes

Devices: Echo Dot

One hundred dollars less than Amazon Echo, Echo Dot (on sale for $39.99) is also a personal digital assistant for your home. Simply plug this small disc into your home stereo speakers or connect wirelessly through Bluetooth, then say "Alexa" from across the room, followed by any number of questions or commands. Ask something like "What's going on in the news" or "Play some good music for studying" or ask to read recipes, pay your bills, give you sports scores, tune a guitar, remind you to do something, and much more. Alexa's voice is extremely clear, loud and lifelike. Its cloud-connected brain gets all updates on the backend, and works with many dozens of smart home accessories, so you can use your voice to control lights, thermostats, and much more.

Smart Home Devices

Nest Learning Thermostat

Smart Home Devices

Schlage Smart Sense Deadbolt

Smart Home Devices

SimpliSafe Home Security System

Smart Home Devices

Anova Culinary Precision Cooker Wi-Fi

Smart Home Devices

Neato XV Signature Pro

Smart Home Devices

iRobot Braava Jet 240

Smart Home Devices

Rachio Smart Sprinkler Controller

Smart Home Devices

Robomow RS622

Smart Home Devices

Logitech Harmony Elite

Devices: Family Hub Fridge

Say hello to Samsung's new Family Hub Fridge, a smart refrigerator with an interactive screen that lets you directly order groceries.
The fridge features a LCD screen that comes with a built-in app called Groceries. In the app, you can pick and choose what groceries you need and order right then. To begin, it will only work with FreshDirect, a grocery delivery company, and ShopRite, a grocery chain. And if you're doing food shopping the traditional way, you can use the Samsung Smart Home App to see images of what's in your fridge. How? Using the three cameras inside the fridge that take photos each time the door closes.
The same LCD screen also works as a notification center for your home and family. Store recipes, display photos, or play music also. Essentially, this fridge wants to become a central point in your home.

Devices: Smart Suitcase

Bluesmart Black Edition

Bluesmart's second "smart" carry-on rollaboard is expensive at $600. If that price doesn't scare you off, it's worth a look for its handsome black and gray fabric, capability to easily store laptops and gadgets, and its "smarts." The smart features include tracking via GPS, Bluetooth, a built-in battery that can recharge USB-connected devices; a built-in luggage scale that displays the bag's current weight in the Bluesmart app when you pick it up by its top handle; and a built-in TSA lock, which can be used to automatically lock or unlock your bag based on your proximity to the suitcase. The bag fits well in the overhead bin and glides nicely down a cramped airplane aisle.

Devices: Smart Suitcase

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Virtual Reality

Virtual reality still has a long way to go before it becomes mainstream. The devices released this year by HTC, Facebook's Oculus, Sony PlayStation and Google largely revolve around gaming, limiting their audience. In addition, most of the devices are expensive.
But the technology has made significant strides. It works smoothly, and the experiences are immersive and stunning. Apps released this year — like Tilt Brush, a 3-D painting tool for HTC's Vive, or SuperHyberCube.

Warning: Vomiting may occur

Devices: Blue Tooth Trackers

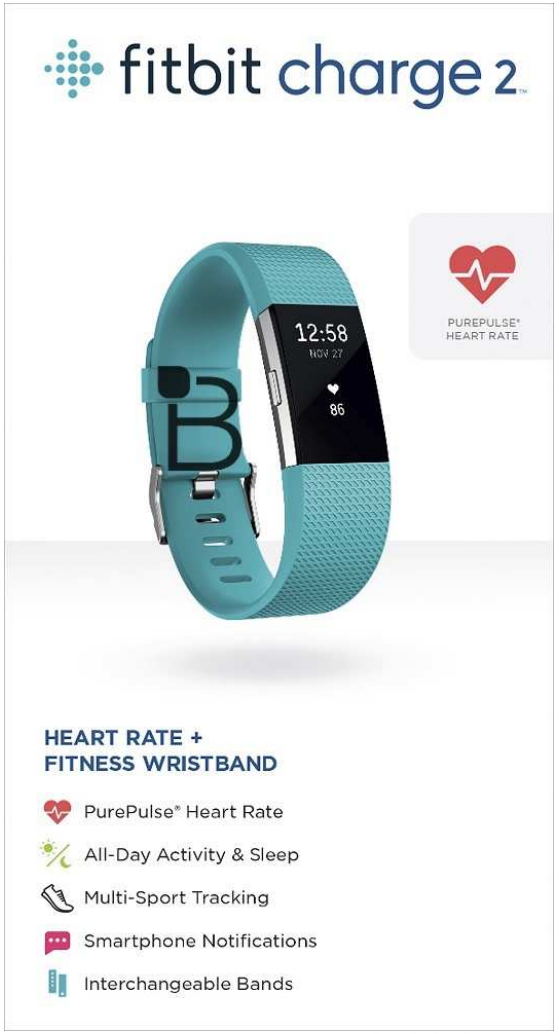
Tile Mate and Tile Slim

The Tile Mate and Tile Slim Bluetooth trackers make great stocking stuffers. Both devices help you find and track missing items to which you attach them, using Bluetooth and the Tile app. If a Tile is nearby, you can prompt it to play a song, to locate it by sound. Tile Mate attaches to key rings and currently costs $25 each. Tile Slim is thinner and lacks a keychain hole, so it's better suited for use in a wallet. Tile Slim's volume is slightly lower, as well, a potential disadvantage when trying to locate a missing item with sound.

Devices: Fitness Trackers

Fitbit Charge 2

Fitbit released four new wearables in 2016, the best of which is Charge 2. With the exceptions of marathoners and swimmers, Charge 2 is the best overall activity tracker for the average person. It's the first Fitbit device to offer an interval workout mode, cardio fitness level and scores, and "relax mode," with guided breathing sessions of two or five minutes. Charge 2 also has lots of other features, including heart-rate tracking, automatic sleep tracking, reminders to move. You can switch the bands, too.



Fitness Trackers

A Projection

By 2020, 40 percent of employees can cut their health care costs by wearing a fitness tracker.

Companies will increasingly appoint fitness program managers to work closely with human resource leaders to include fitness trackers in wellness programs. Health care providers can save lives and downstream costs by acting on the data from fitness trackers that show health risks to the user. Wearables provide a wealth of data to be analyzed either in real time or in retrospect with the potential for doctors and other health care professionals to have access to both contextual and historical information, if the patient agrees to share it.

Hacking Gets Even Worse

Large-scale hacks have unfortunately become relatively common in recent years, but 2016 managed to make them even more worrisome.

Various organizations (including WikiLeaks) were able to "weaponize" email breaches of political candidates with deliberate, precise leaks timed to maximize media coverage. The beleaguered Yahoo squandered whatever trust its users still had when it was revealed the company didn't publicly disclose a large-scale hack from 2014 until months after it found out.

Yahoo Hack

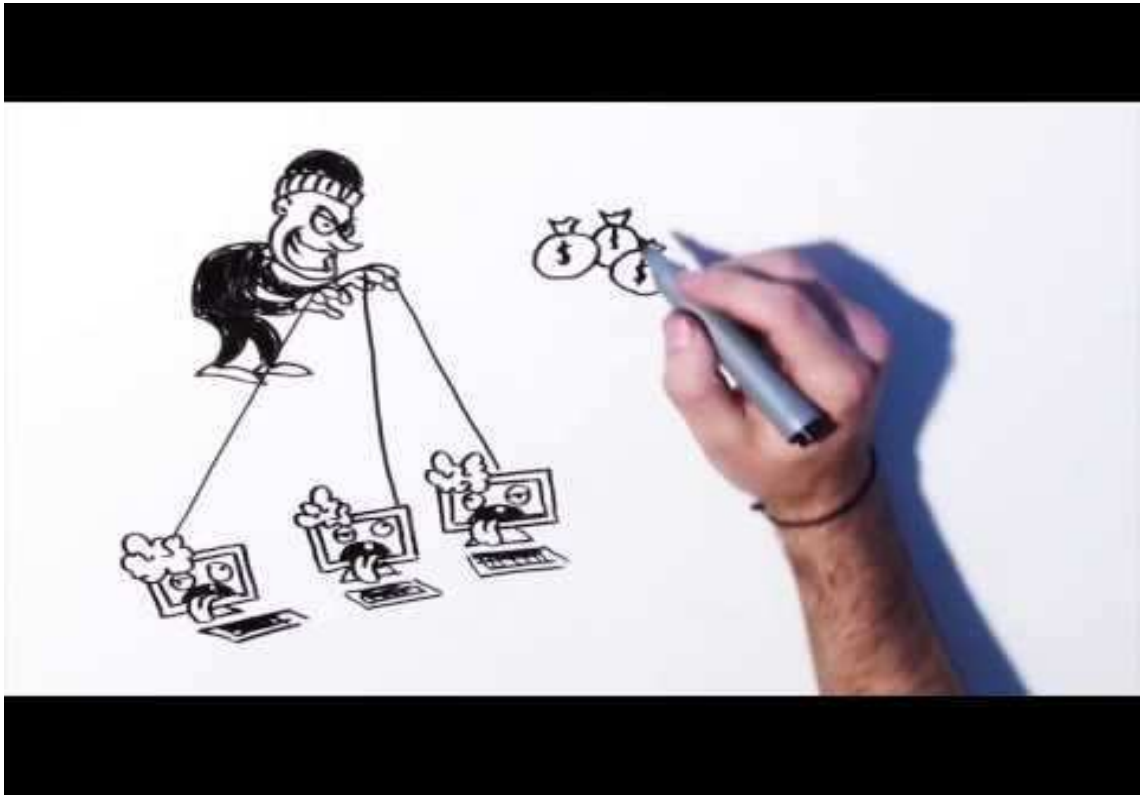
Yahoo, already reeling from its September disclosure that 500 million user accounts had been hacked in 2014, disclosed in early December that a different attack in 2013 compromised more than 1 billion accounts.

The two attacks are the largest known security breaches of one company's computer network.

Mirai Botnet

And perhaps worst of all, the emergence of the Mirai botnet exposed the security nightmare that is the Internet of Things, After flooding a prominent security journalist's website with traffic from zombie Internet of Things devices, it managed to make much of the internet unavailable. Since then, the number attacks have only increased. What's increasingly clear is that Mirai is a powerfully disruptive force. What's increasingly not? How to stop it.

Botnets



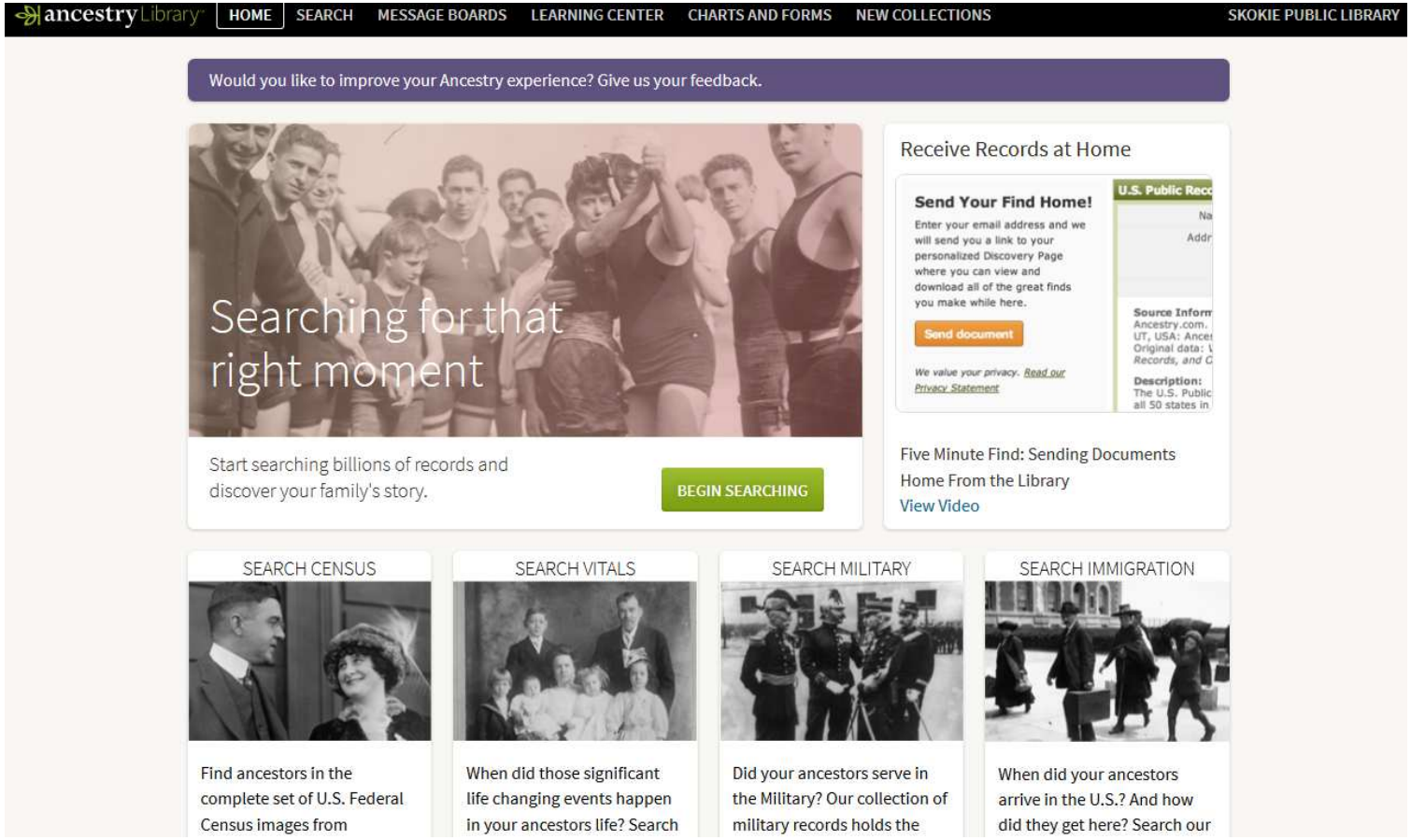
No Worries: It's All a Simulation

Elon Musk Says There's a "One in Billions" Chance Reality is *NOT* a Simulation

CEO & genius behind SpaceX and Tesla autos says reality is unlikely

Databases: Ancestry.com

Database offered by Skokie Public Library
Get detailed information on ancestors,
Birth & death records, yearbook pictures,
military records, census data



Learning New Skills

Online Learning Websites

KhanAcademy.org

Free site to learn math, science, computer programming & more. Keeps track of progress and offers badges for encouragement

MOOCs (Massive Online Open Courses)

Online courses aimed at unlimited participation and open access via the web. In addition to traditional course materials such as filmed lectures, readings, and problem sets, many MOOCs provide interactive user forums to support community interactions between students and professors. Many are free and can be offered by major universities
See **edx.org** for a list

Learning New Skills

Subjects

KHANACADEMY

Mike 9+

Math by subject
- Early math 100%
- Arithmetic 100%
- Pre-algebra 100%
- Algebra 100%
- Geometry 100%
- Trigonometry 100%
- Precalculus 99%
- Statistics & probability 100%
- Calculus
- Differential equations
- Linear algebra
- Math for fun and glory

Math by grade
- Kindergarten
- 1st
- 2nd
- 3rd 100%
- 4th 100%
- 5th 100%
- 6th 100%
- 7th 100%
- 8th 100%
- High school

Science & engineering
- Physics
- Chemistry
- Organic chemistry
- Biology
- Health & medicine
- Electrical engineering
- Cosmology & astronomy

Computing
- Computer programming
- Computer science
- Hour of Code
- Computer animation

Arts & humanities
- Art history
- Grammar
- Music
- US history
- World history

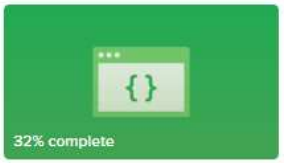
Economics & finance
- Microeconomics
- Macroeconomics
- Finance & capital markets
- Entrepreneurship

Test prep
- SAT
- MCAT
- GMAT
- IIT JEE
- NCLEX-RN

College Admissions

Resume learning

One-dimensional motion
Physics



Intro to JS: Drawing & Animation
Computer programming

Imaginary and complex numbers
Precalculus

Life on earth and in the universe
Cosmology and astronomy

Music basics
All-Star Orchestra

Learning New Skills

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Project Risk Assessment

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About this course

0 Reviews 0/5

This finance course will begin by exposing learners to the critical role risk plays in evaluating projects.

This course will involve detailed exposure to statistical modeling and data analytics to measure the different drivers of value creation and appreciate how companies should make decisions in the real world. While no theory is perfect, this course will provide time-tested foundational aspects of risk

See more

What you'll learn

- To think clearly about risk in a world populated by uncertainty and risk-averse individuals
- To use statistics to both understand and measure different components of the risks of projects/companies
- To analyze the value of different projects after adjusting for differences in their risks

Meet the instructor

Length:	self-paced; we expect you to complete the course in 30-40 hours
Price:	FREE Add a Verified Certificate for $99
Institution:	MichiganX
Subject:	Economics & Finance
Level:	Intermediate
Languages:	English
Video Transcripts:	English

Associated Programs:

XSeries:
Corporate Financial Analysis

Technology Year in Review

Thank You

Best Wishes for the Coming Year