Taking the Mystery out of Your Technology

CapCONNECT™

A Capacity Building Program of the Wiregrass Foundation

Presented By Jason Robertson

For Wiregrass Foundation Executive Directors

March 6, 2024

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Goals for Our Time

- To give you practical steps for better understanding the technology in your organization.
- To equip you for the conversations you'll have with the technology staff and vendors you'll rely on.
- To encourage you to include a CTO mindset in your leadership.

Goals for Our Time

- To encourage you to include a CTO mindset in your leadership.

  The CTO needs to be **looking ahead** to anticipate technological trends and their potential impact on their organization and industry. They need to see the big picture and understand how technology can drive growth.

Topics We'll Cover

- Drivers for technology initiatives
- Creating a technology portfolio
- Setting expectations
- Selecting a vendor
- CRMs and data management
- Security and compliance
- AI

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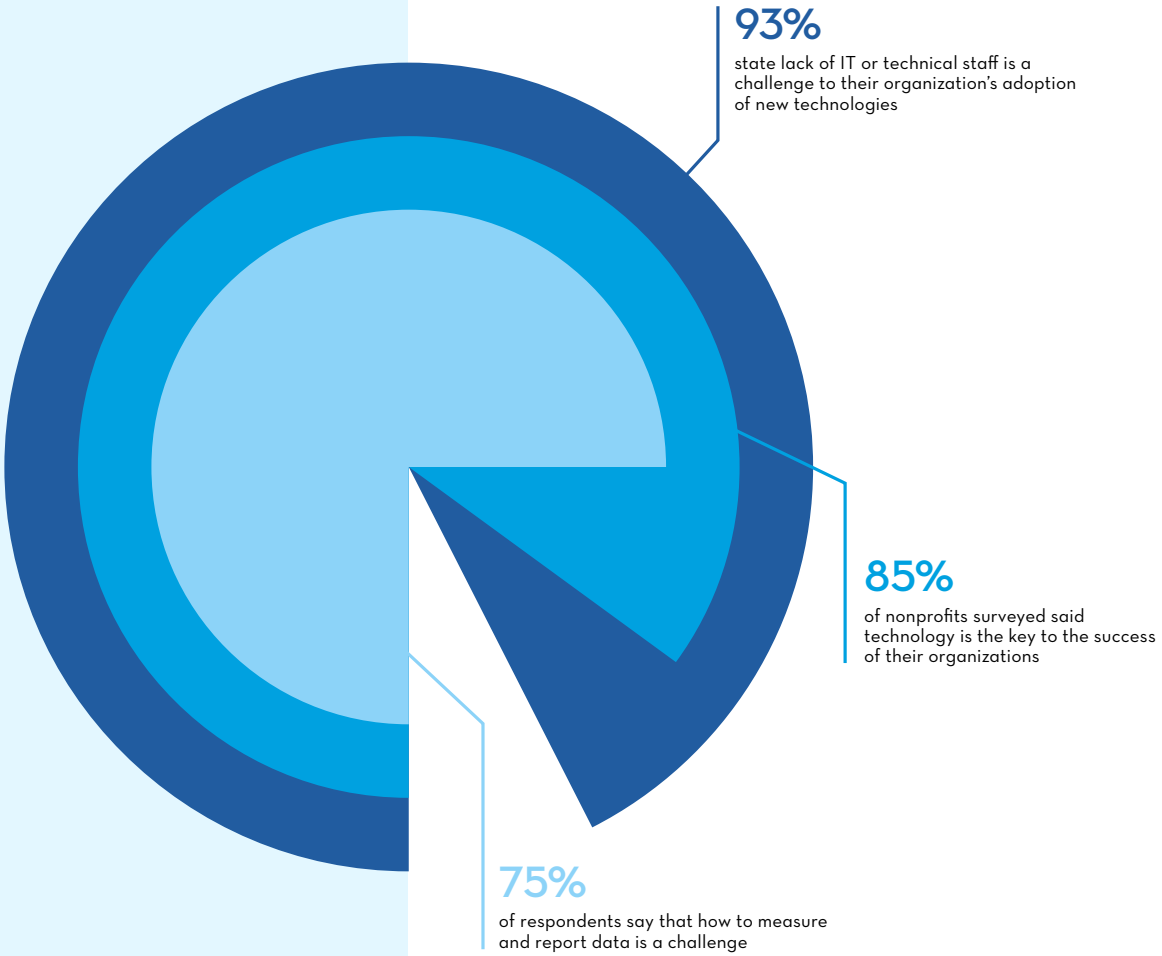
(You're Not Alone)

KEY FINDINGS

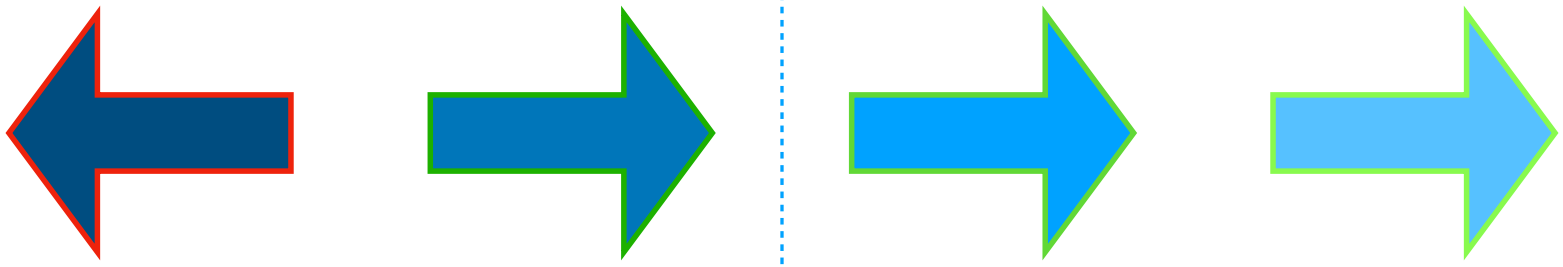
Technology is Key to Success, but Challenges Remain

- Technology helps connect nonprofits and their constituents
- Nonprofits lack IT talent, vision and budget
- Capturing and leveraging data are continuous challenges for nonprofits



From Salesforce.org's Second Edition Nonprofit Trends Report

Technology's Role in Organizations



Constrains Supports Amplifies Drives

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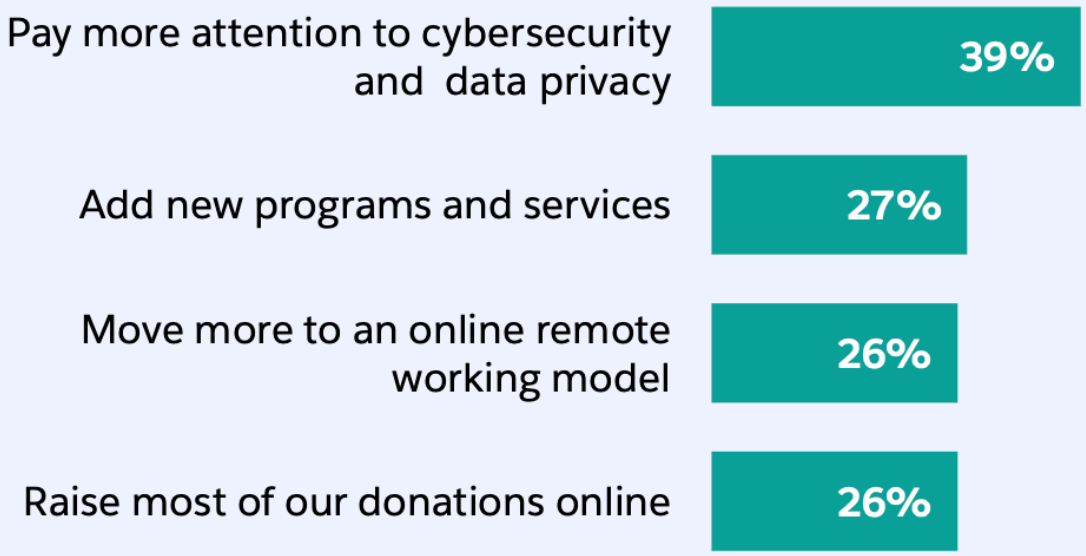
Drivers for Technology Initiatives in Nonprofits

- **Security and Compliance** - How can technology protect the information we collect?
- **Efficiency** - How can technology free up time and money?

Nonprofits are mostly likely to take action on cybersecurity, growth, and moving to online models.

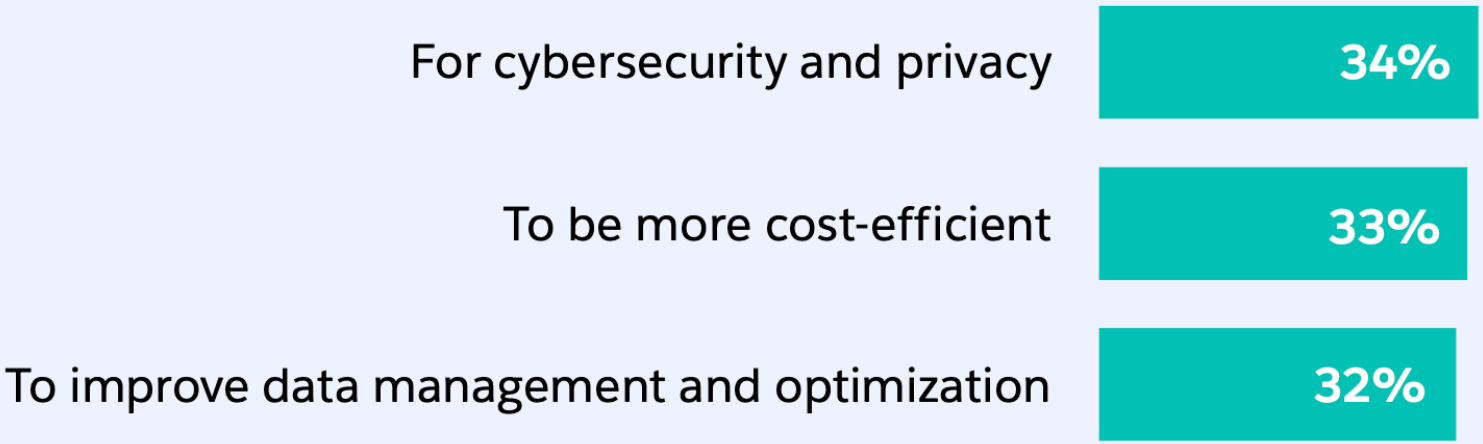
In the next 12 months, how likely is your organization to do the following? (Answers of "highly likely")



From Salesforce.org's Fifth Edition Nonprofit Trends Report

Technology is used to safeguard information and reduce costs.

Which of the following are reasons why digital transformation is important to your organization?



From Salesforce.org's Fifth Edition Nonprofit Trends Report

Drivers for Technology Initiatives in Nonprofits

- **Security and Compliance** - How can technology protect the information we collect?
- **Efficiency** - How can technology free up time and money?
- **Effectiveness** - How can technology help us better serve our clients and grow our impact?
- **Decision-making** - How can technology help us make better decisions?
- **Innovation** - How can technology help us meet our clients' needs in a new way?

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Technology Portfolio

Technology Portfolio - Your **starter kit** for engaging a technology vendor, onboarding a resource, and making the next best technology decision.

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Technology Portfolio

- **Budget** - What is your technology budget and spending trend?
- **Tools** - What applications, tools, and systems do you use?
- **Users** - How many technology users do you have?
- **Workflow** - How do you get work done?

Technology Portfolio

- **Budget** - What is your technology budget and spending trend?

  Categorize your spending for more clarity.

  - Mission-Critical Systems
  - Security and Compliance
  - Business Continuity
  - Innovation / Training

Technology Portfolio

- **Tools** - What applications, tools, and systems do you use to get work done. This is your "**tech stack**."
  - PC or Mac
  - Google Apps or Microsoft 365
  - Gmail or Exchange
  - Slack
  - Internet access
  - Cloud storage or local storage
  - CRM, spreadsheets, databases
  - Project Management: Monday, Basecamp, Trello
  - Website platform

Technology Portfolio

Technology Portfolio

- **Users** - How many technology users do you have - staff, client, volunteers?
  - Which tools do they Access? When, Where, How?
  - What roles are defined (administrator, manager, “user”)
  - Which tools have a growing/shrinking number of users? Why?

Technology Portfolio

- **Workflow** - How do you get work done?

Understanding your workflow allows you to **identify opportunities** for improved security, efficiency, effectiveness, and **accountability**.

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Technology Portfolio

- **Workflow** - How do you get work done? What technology is involved in:
  - Communications - internal and external - email, phone calls, social media
  - Meetings
  - Client Relationship Management
  - Project Management
  - Task Management
  - Business Operations (accounting, facility management)

Technology Initiatives - Some Best Practices and Setting Expectations

- Clearly define the problem you're trying to solve. "A problem well stated is half solved." - Charles Kettering
- Ensure you're maximizing the tools you already have.
- Define ROI expectations and timeframe. How will you measure?
- Get input and buy-in.
- Partner, don't pioneer. Customize as a last resort.
- Understand the Rule of "Pick Two."

Rule of “Pick Two”

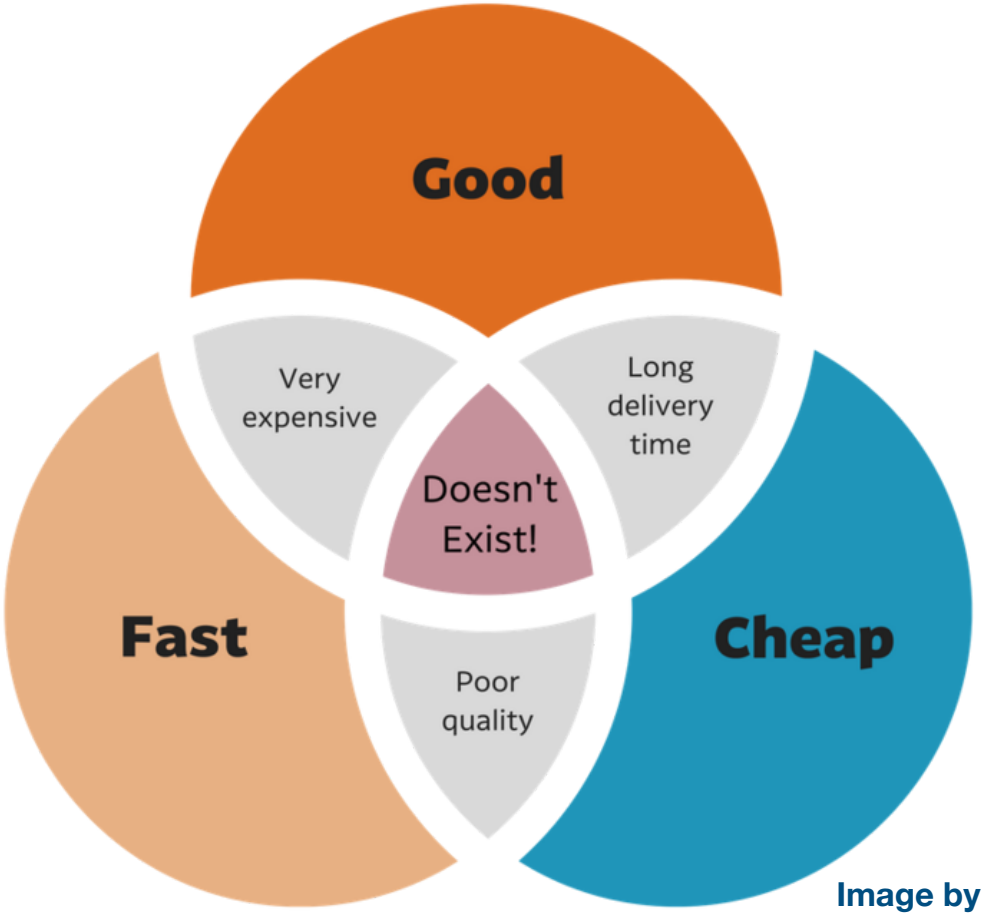

Image by Steve Zynga

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Technology Initiatives - Some Best Practices and Setting Expectations

- Clearly define the problem you're trying to solve, or opportunity you are pursuing. "A problem well stated is half solved." - Charles Kettering
- Ensure you're maximizing the tools you already have.
- Define ROI expectation and timeframe. How will you measure?
- Get input and buy-in.
- Partner, don't pioneer. Customize as a last resort.
- Understand the Rule of "Pick Two."
- Technology is like a pet. It can be easy to get, but hard to care for.

Choosing an Technology Vendor

- You've identified where you need a technology initiative…

- You've created a technology portfolio to inform your conversations and decisions…

- You've set your expectations…

Now what?

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Choosing an Technology Vendor

Most of us will have to partner with a technology vendor to accomplish and support our initiatives. Who you partner with **is as important as who you hire**. Prepare and **interview** accordingly.

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Choosing an Technology Vendor - The Answers You Need

- Do they have experience with a “tech stack” like yours? How much?
- Do they have experience with your compliance needs (HIPAA, PCI, etc.)? Have they assisted a client in an audit?
- How do they handle data and security in general?
- What’s their staff size? Junior or senior-level experience (and which will be supporting you)? Local? Tenure? Ongoing training and development? Account management?
- How will you communicate and how will they document your requests?

Choosing an Technology Vendor - The Answers You Need, Cont'd

- What is their response time, SLA, and your escalation path? "Uptime" guarantee? Emergency support? Dedicated account management?
- What is the fee structure (project, per request, hourly)?
- Does your budget work with their business model?
- Do they have an NDA? What is their technology use policy? How do they handle access and passwords? Security breaches?
- What's the handoff when you end the relationship? Who has the passwords?
- Discuss "what if" scenarios. (What if I need support on Sunday morning?)

People Information and CRMs

One of the **most valuable assets** you have is your "**people information**."

How you **think about** and **manage** this information is one of the most important decisions you'll make as a leader.

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People Information and CRMs

How you manage "**people information**" will determine:

- The systems you need
- The effectiveness of future communications
- How quickly and effectively future services can be delivered
- Your reporting options
- The level of compliance you are subject to
- How quickly and effectively you can leverage AI

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People Information and CRMs

Decision #1: What constitutes a client profile (record)?

Decision #2: Where will you store the information?

Decision #3: How will you protect the information?

Decision #4: How will you ensure compliance with decisions #1 - #3?

People Information and CRMs

Decision #1: What constitutes a client profile (record)?

- What info will the future you thank you for collecting?
- What info do you need to segment communications?
- Avoid storing social security, DL, and CC numbers.
- Garbage in, garbage out.

People Information and CRMs

Decision #2: Where will you store the information?

- The CRM (Customer Relationship Management): One tool to rule them all.

Drivers for Technology Initiatives in Nonprofits

- **Security and Compliance** - How can technology protect the information we collect?
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People Information and CRMs

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People Information and CRMs

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People Information and CRMs

Decision #2: Where will you store the information?

- The CRM (Customer Relationship Management): One tool to rule them all.
- Prioritize a single “source of truth.”
- Avoid storing data outside of your “source of truth” (spreadsheets, etc.).

People Information and CRMs

Decision #3: How will you protect the information?

- Backup the data and test your recovery process.
- Make it someone else's responsibility (cloud solutions / CRM).
- Know who has access (and how access monitored / tracked).
- Avoid sharing user accounts.
- Ensure computers are password protected at start up and after being idle for more than ten minutes.

People Information and CRMs

Decision #4: How will you ensure compliance with decisions #1 - #3?

- The leader is responsible for modeling behavior and ensuring compliance.
- Cast vision for the value of your people information.

Security and Compliance

Security and compliance **starts** with the **people information** you collect, store, and manage. If you have it, secure it.

Personally Identifiable Information (PII): Information that, when used alone or combined with other information, can be used to identify a specific individual. This information includes but is not limited to name, mailing address, email address, telephone number, date of birth, passport number, etc.

Security and Compliance

Security Considerations:

- **Cloud services** can significantly decrease your security burden.
- Your network **firewall** and computer **antivirus protection** are your primary lines of defense, and your first compliance priority.
- **Staff Education** is a key part of an effective security strategy.

Security and Compliance

Cloud Services (and Software as a Service - SaaS):

- Put it in the cloud. If it's local, it's your responsibility. If it's in the cloud, it's someone else's.
- If it's in the cloud, it's accessible when your office or your computer may not be.
- Don't let one person's computer cripple your operations.
- Have a strategy for document access and sharing. Who is the admin and how is the admin password communicated and protected?
- Cloud services don't guarantee 100% uptime. Have a backup plan.

Security and Compliance

Network Firewall and Computer Antivirus Protection:

- Most internet modems include a firewall. Ensure it's enabled.
- If you have computers onsite with critical systems (HR, Accounting, file storage, etc.), consider putting them on a VLAN with limited access.
- If you allow volunteers and clients to use your Wi-Fi, consider having an SSID separate from the one your staff uses.
- Don't share accounts, or name an account "admin."
- Ensure all computers have antivirus software that updates automatically.

Security and Compliance

Staff Education:

- Have an information security and technology use policy.
- Provide cybersecurity awareness training (phishing emails).
- Set expectations for securing computers, user accounts, and passwords.
- When do you use your local computer vs. the cloud?
- Avoid computer accounts with administrative privileges.
- Have a cloud-based backup solution that happens automatically.

Compliance Considerations

Compliance Considerations:

- Select an IT vendor who has worked with the compliance requirements you are subject to (and, ideally, one that has completed an audit).
- Avoid collecting and storing social security, driver's license, passport, and credit card numbers.
- Use cloud-based software and SaaS solutions to handle financial transactions and people information storage (CRM).

Compliance Considerations

Compliance Considerations, Continued:

- Have an information security and technology use policy.
- Have an incident response plan. Document the steps staff and volunteers must take when they become aware of a theft or security breach (and the steps leadership will take in response).
- Don’t share user accounts. Ideally, every action on your network would be traced back to a specific user.

Compliance Considerations

Security Audit Questions:

- Are all computers password protected at start up and after being idle for more than ten minutes?
- Are your company's computers protected by a firewall?
- Are remote users permitted access to your company's computers only by way of a virtual private network (VPN) or similar security protocol?

Compliance Considerations

Security Audit Questions, Continued:

- Does your company use automatically updated antivirus and anti-spyware software on its computers?
- Are all users personally identified when they log on to the network and financial reporting software applications (*this good*) or can log on occur through group or shared user IDs (*this is bad*)?
- Are there wireless access points to your network? How are they protected?

AI

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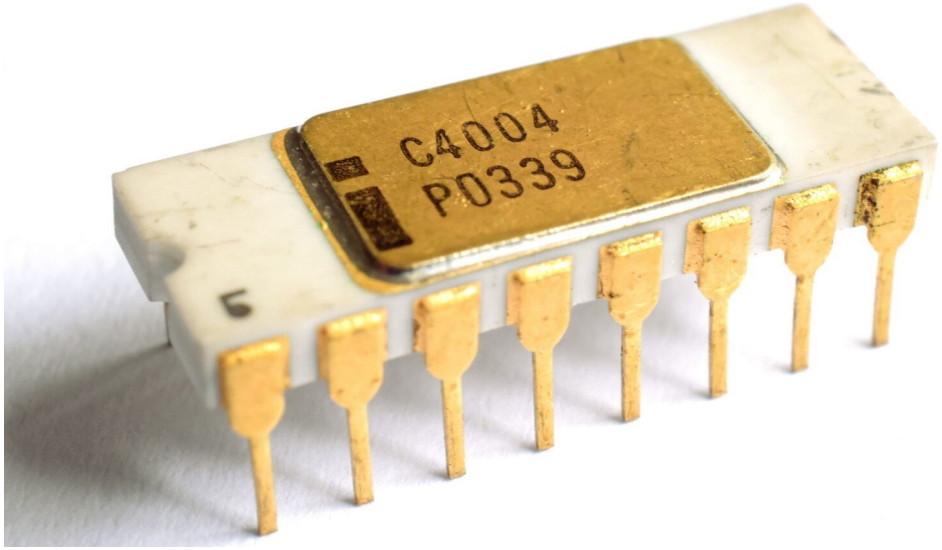
In 1971, Intel invented the microprocessor (microchip). Memory for computers with the chip cost about half a penny a bit. Eight kilobytes ran around $300.

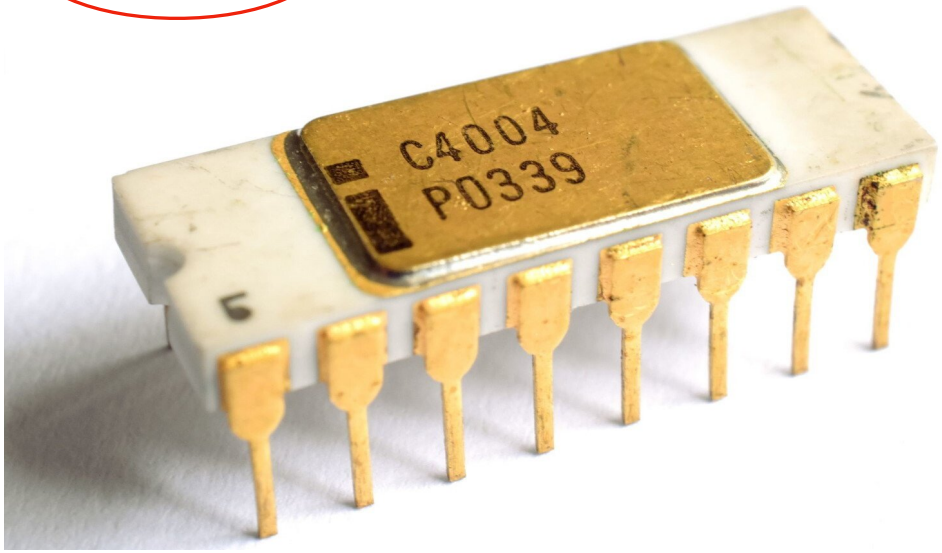
Your 256-gigabyte iPhone would have cost…



Ted Hoff, Federico Faggin, and Stan Mazor

In 1971, Intel invented the microprocessor (microchip). Memory for computers with the chip cost about half a penny a bit. Eight kilobytes ran around $300.

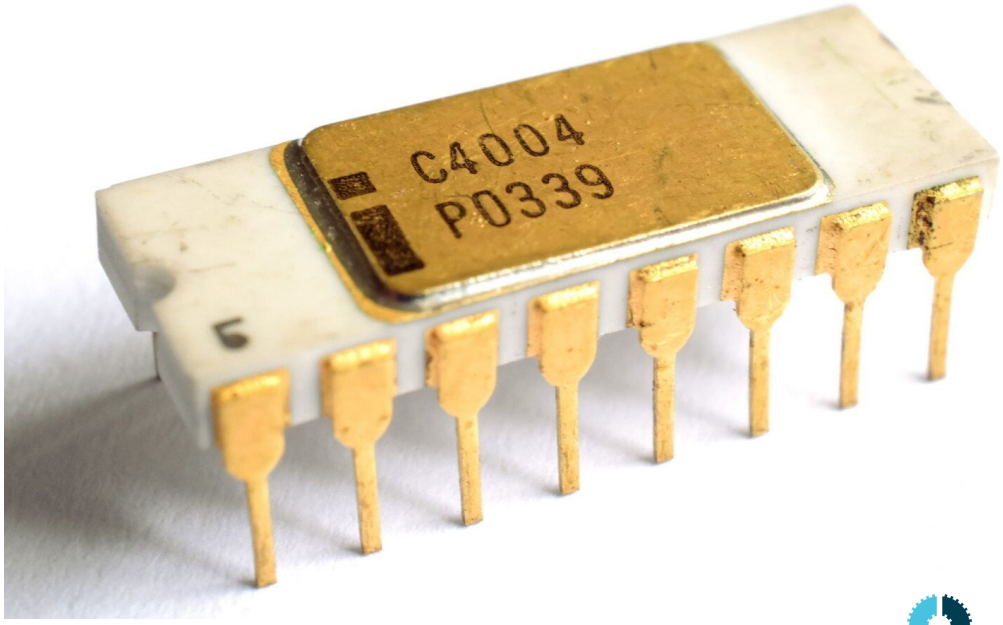
Your 256-gigabyte iPhone would have cost…
$10 Billion.



Ted Hoff, Federico Faggin, and Stan Mazor

The chip held **2,300** transistors.

Today, Apple has a consumer grade chip with…



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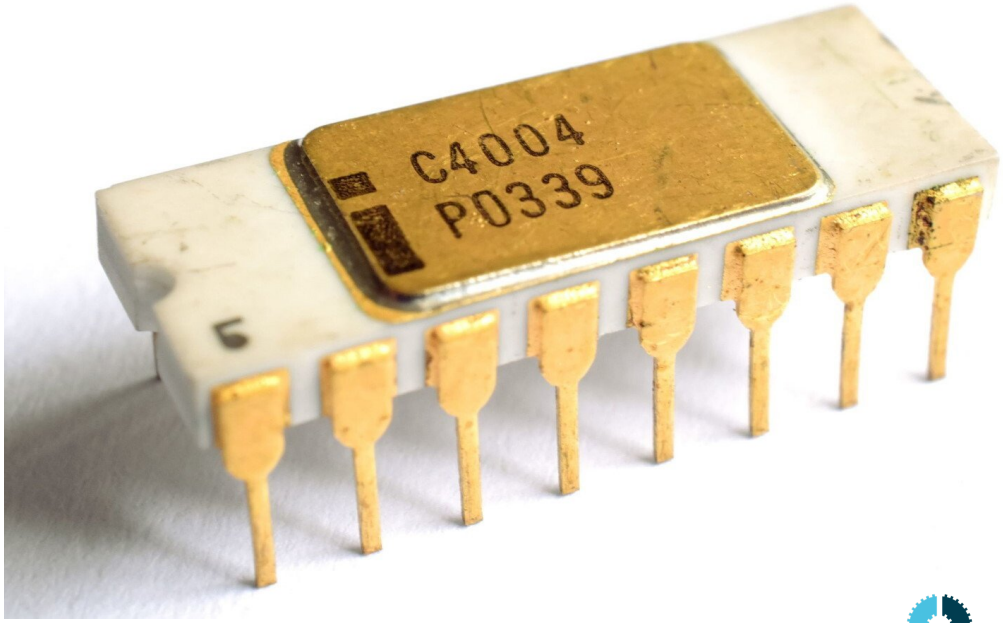
The chip held **2,300** transistors.

Today, Apple has a consumer grade chip with… **134 Billion**.



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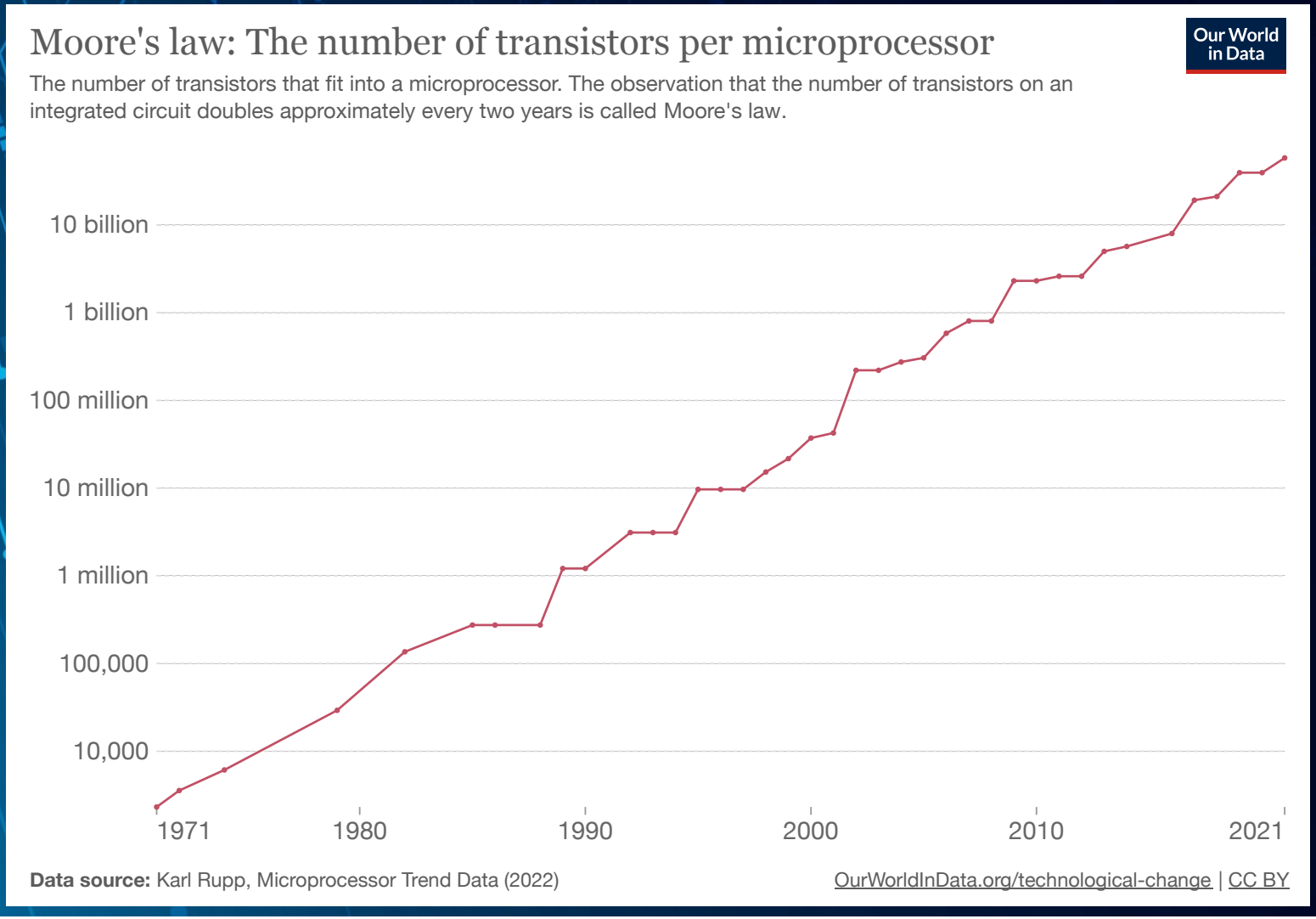
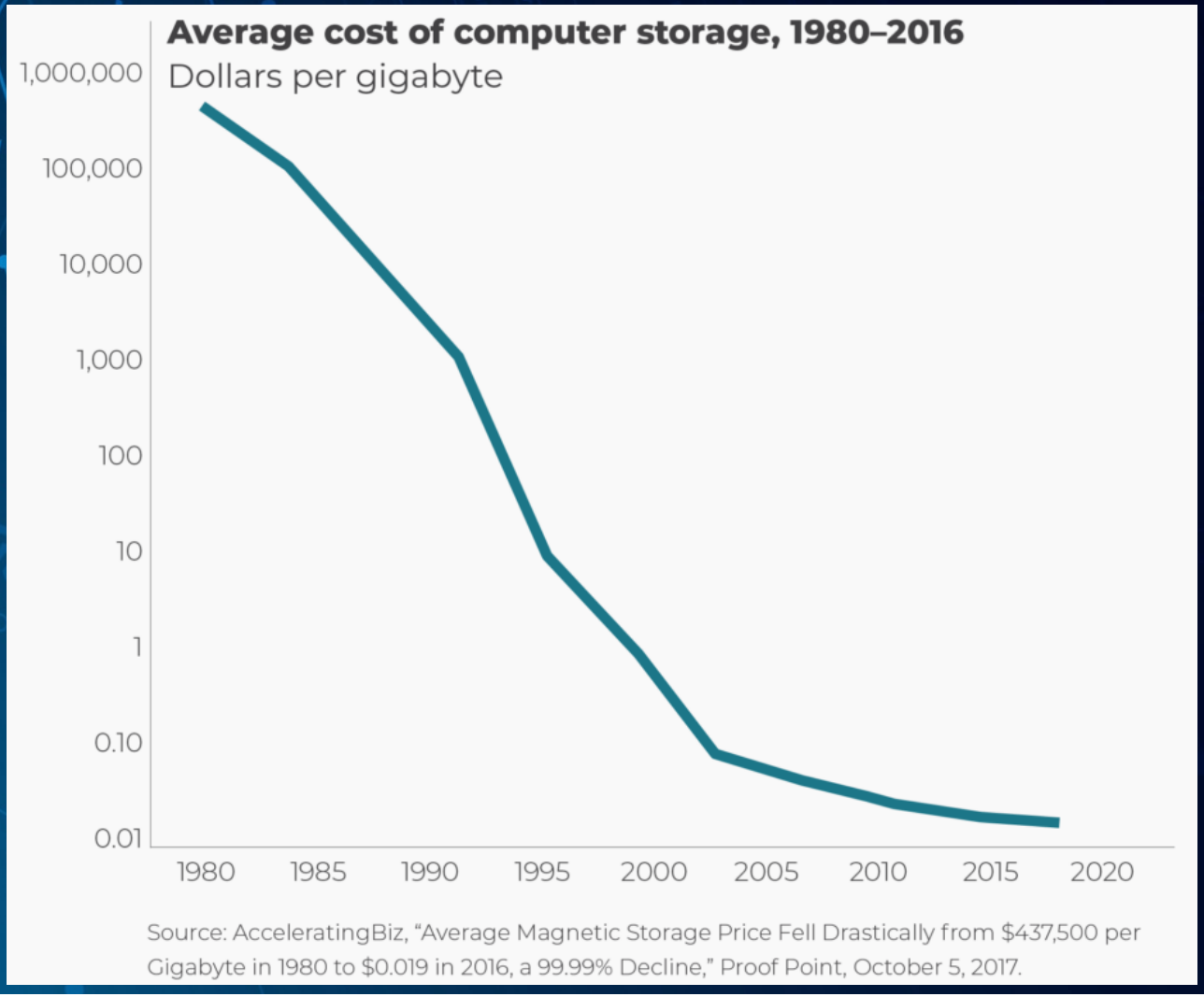
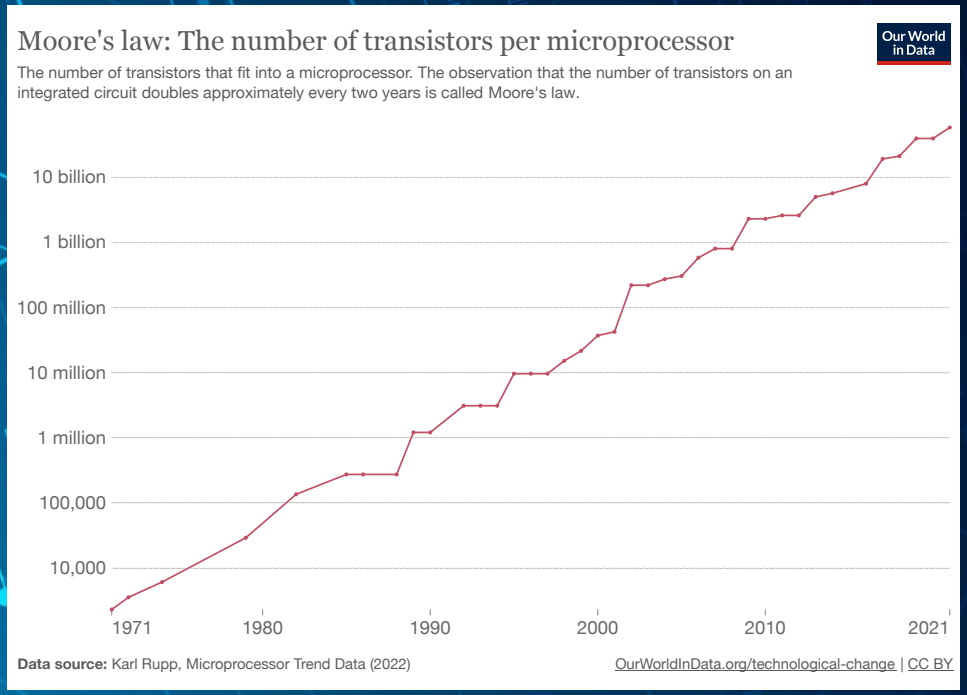
Moore’s Law

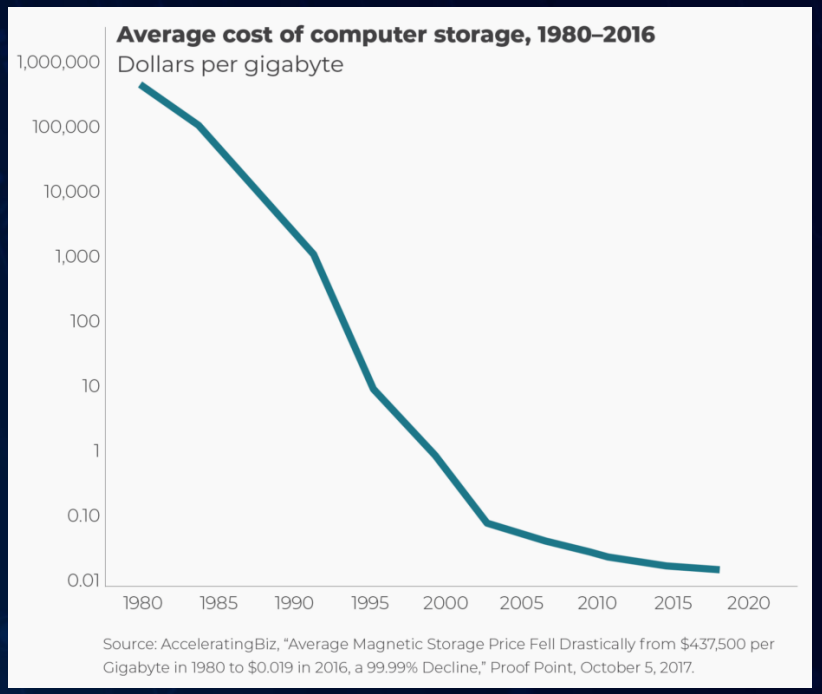

Moore's law: The number of transistors per microprocessor
The number of transistors that fit into a microprocessor. The observation that the number of transistors on an integrated circuit doubles approximately every two years is called Moore's law.
Our World in Data
10 billion
1 billion
100 million
10 million
1 million
100,000
10,000
1971
1980
1990
2000
2010
2021
Data source: Karl Rupp, Microprocessor Trend Data (2022)
OurWorldInData.org/technological-change | CC BY

Wright's Law


Average cost of computer storage, 1980–2016
Dollars per gigabyte
1,000,000
100,000
10,000
1,000
100
10
1
0.10
0.01
1980
1985
1990
1995
2000
2005
2010
2015
2020
Source: AcceleratingBiz, "Average Magnetic Storage Price Fell Drastically from $437,500 per Gigabyte in 1980 to $0.019 in 2016, a 99.99% Decline," Proof Point, October 5, 2017.

Moore’s Law and Wright’s Law





AI

A *really* brief history of AI - Artificial Intelligence:

- 1950: Alan Turing published “Computer Machinery and Intelligence,” which proposed a test of machine intelligence called The Imitation Game.
- 1997: Deep Blue (developed by IBM) beat the world chess champion, Gary Kasparov, in a highly-publicized match, becoming the first program to beat a human chess champion.
- 2006: Companies started utilizing AI as a part of their advertising and user experience algorithms (Google, Twitter, Facebook, and Netflix).
- 2011: Apple released Siri, the first popular virtual assistant.
- 2022: Open AI released ChatGPT, introducing consumers to Large Language Models.

AI

Artificial Intelligence: Computers that simulate human problem-solving.

AI is blend of computer science, computing power, and large datasets.

AI capabilities have surpassed human capabilities in some areas, but we're not at Skynet.

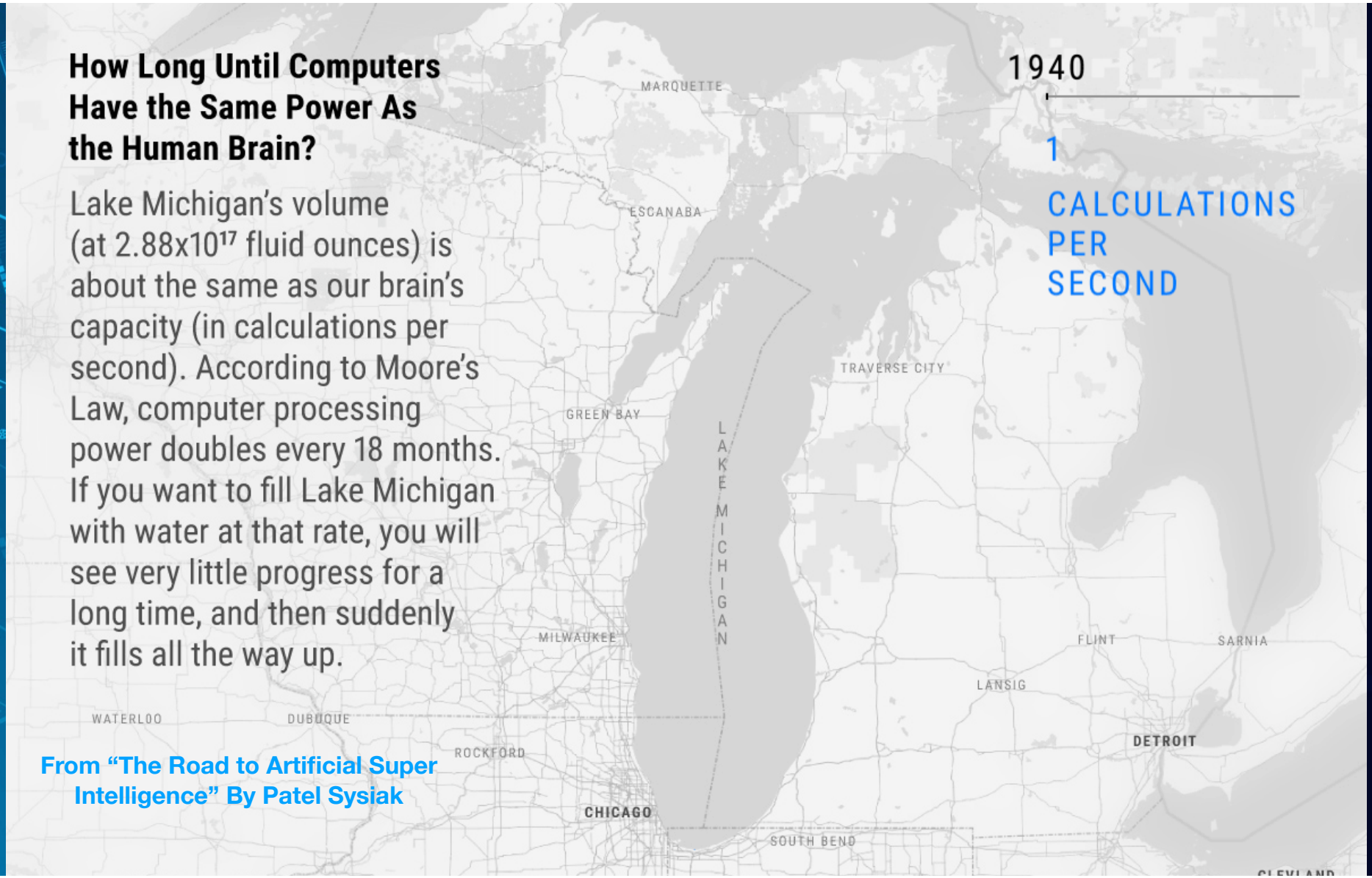
AI Definitions

Supercomputers: Computers with huge (staggering) computing power. The term AI may be overused and overhyped. The ability of supercomputers is not.

How Long Until Computers Have the Same Power As the Human Brain?

Lake Michigan's volume (at 2.88×10^{17} fluid ounces) is about the same as our brain's capacity (in calculations per second). According to Moore's Law, computer processing power doubles every 18 months. If you want to fill Lake Michigan with water at that rate, you will see very little progress for a long time, and then suddenly it fills all the way up.

From "The Road to Artificial Super Intelligence" By Patel Sysiak



Frontier Supercomputer

Frontier Supercomputer

- 7,300 square feet
- $600 million cost
- 1 quintillion calculations per second (a billion billion) - the equivalent to each person on earth doing one calculation per second for four years
- 700 Petabytes of storage (or 2,867,200 laptops)
- 6,000 gallons of water move through it's cooling system per minute
- 40 Megawatts of power used - the equivalent power demand of over 30,000 US homes

Frontier Supercomputer

Types of AI

Traditional or Narrow AI: Focuses on performing preset tasks using predetermined algorithms and rules. Identifies patterns.

Generative AI: Learns underlying patterns in data sets and then generates something new or personalized based on the patterns and data.

General AI: Human-like intelligence (still a *long* way away).

AI

Machine Learning (Narrow/Traditional AI) - Computer programs and algorithms that allow computers to analyze data to identify patterns and predict outcomes.

"If this, then that." (X-ray comparison, Google search, Netflix)

Deep Learning (Generative AI) - Multi-layered (artificial neural networks). Learns underlying patterns in data sets and then generates something new or personalized based on the patterns and data.

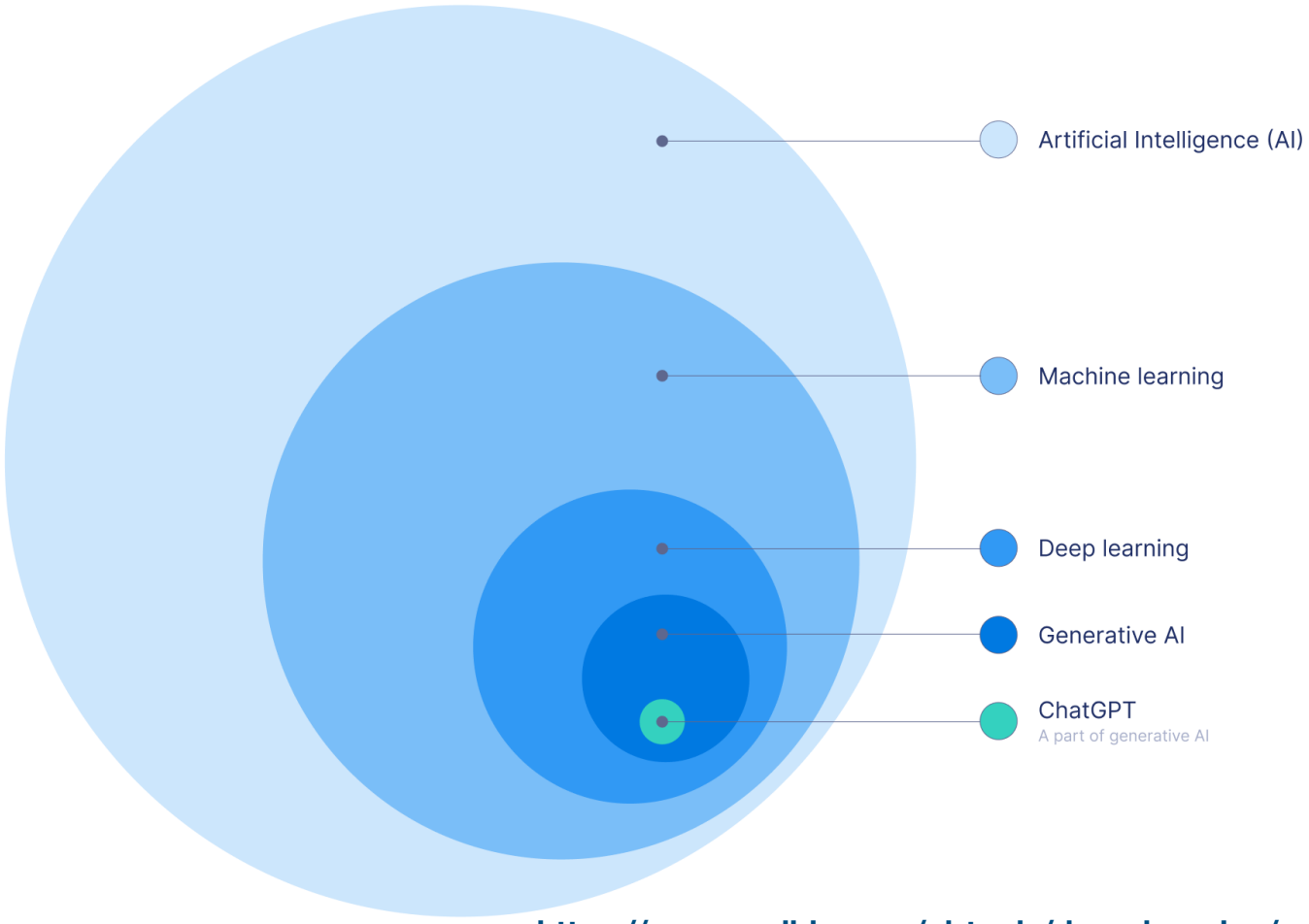
"If this, then that, then what about (x)?" (ChatGPT)

AI

Large Language Models - Deep learning using massive datasets (all of the content on the internet).

ChatGPT (Chat Generative Pre-trained Transformer) - Launched in 2022, ChatGPT made Large Language Models easily accessible to the world. It allow users to “converse” with computers using natural language.

The AI Spectrum: Unveiling Layers of Intelligent Systems



Scribbr

https://www.scribbr.com/ai-tools/deep-learning/

AI for the Nonprofit

- **Process Automation** - Routine tasks
  - Accounting, project management, data Entry
- **Customer Engagement** - Content creation and distribution
  - Marketing, chatbots, email and social media postings
- **Customer Insights** - Trend analysis
  - Pattern recognition and predictions

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Before ChatGPT

```
3           $result = mysqli_query($dbconn, "SELECT * FROM TechTerms WHERE Date='$date'");
4           if($result !== false) {
5               $distArray = array();
6               $row = mysqli_fetch_assoc($result);
7               $correctAnswer = $row['Correct'];
8               $distArray['A'] = $row['Anum'];
9               $distArray['B'] = $row['Bnum'];
10              $distArray['C'] = $row['Cnum'];
11              $distArray['D'] = $row['Dnum'];
12              $distArray['Correct'] = $correctAnswer;
13              $distArray['Answer'] = rtrim($row[$correctAnswer], ".");
14              $distArray['Query'] = "SELECT * FROM TechTerms WHERE Date='$date'";
15              return $distArray;
16          } else {
17              $distArray['Error'] = 'Quiz load query failed';
18              return $distArray;
19          }
```

After ChatGPT

You

Can you identify the trend in this set of data?

ChatGPT

Of course! Please provide the set of data you'd like me to analyze, and I'll do my best to ide

trend for you.

Develop Your CTO Mindset

- You may *feel* like you're behind (we all feel that way). Be encouraged. We are at a unique time in history.
- Moore's and Wright's Laws have positioned AI to be a game changer. Those who learn to leverage it will be able to make huge advances with technology.
- Develop your CTO mindset. Be curious. Grow your awareness of technology developments and look for opportunities to experiment.