Question the Future Like a Futurist
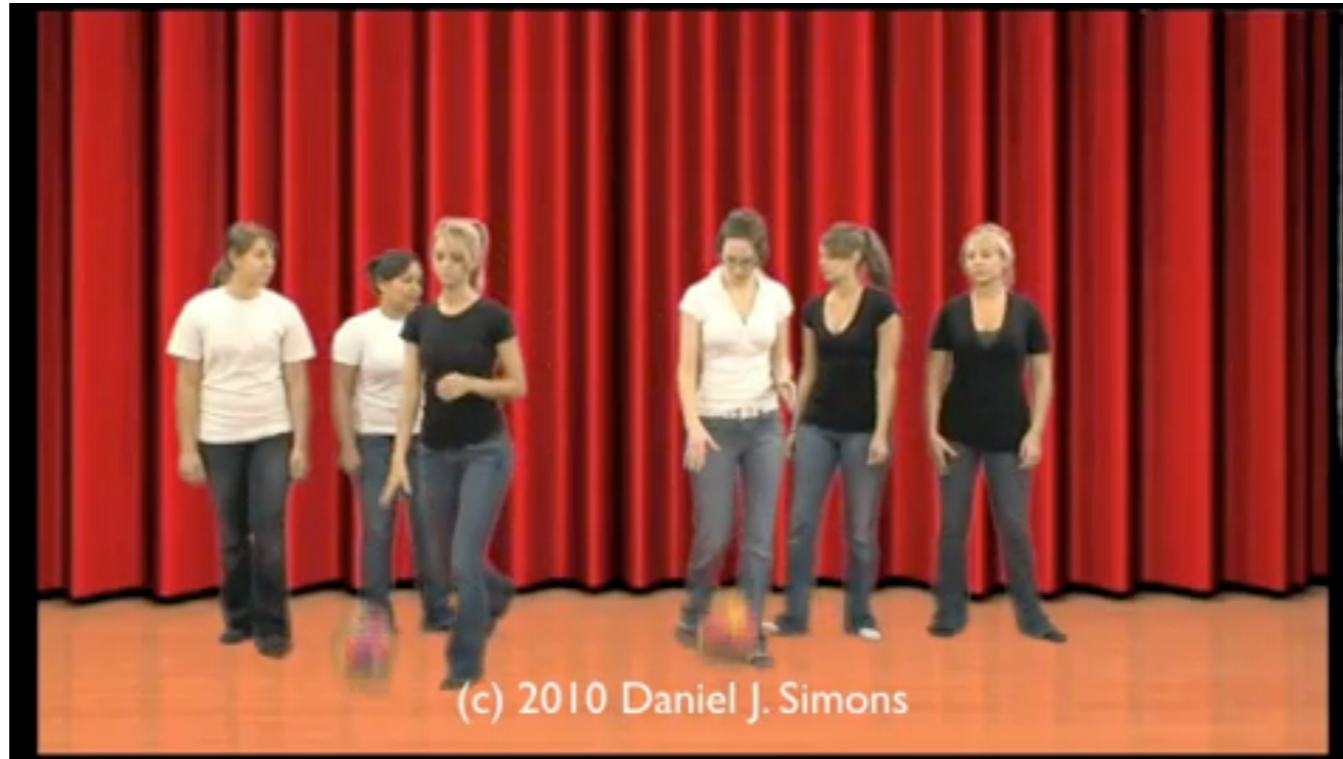
IIA Houston
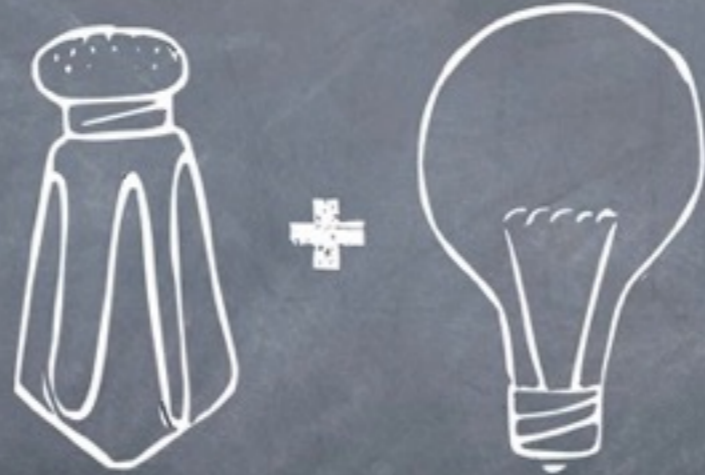Navigate the Future
April 9, 2018
NRG Center

Jack Uldrich
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The key to asking better questions?

The Big AHA =
Awareness
Humility
Action

a better question

How Many Other
Changes Did You See
in the Video?

1. None
2. One
3. Two
4. Three

How many saw the gorilla?

What the curtain changing colors?

Or the person in the black t-shirt walking away?

Let's rewind and
watch it again

Question 1

What Aren't We Seeing?

@jackuldrich

SpaceX launched its Falcon Heavy rocket from Kennedy Space Center 🚀

Why is this important?

It will radically lower the cost of putting satellites into space.

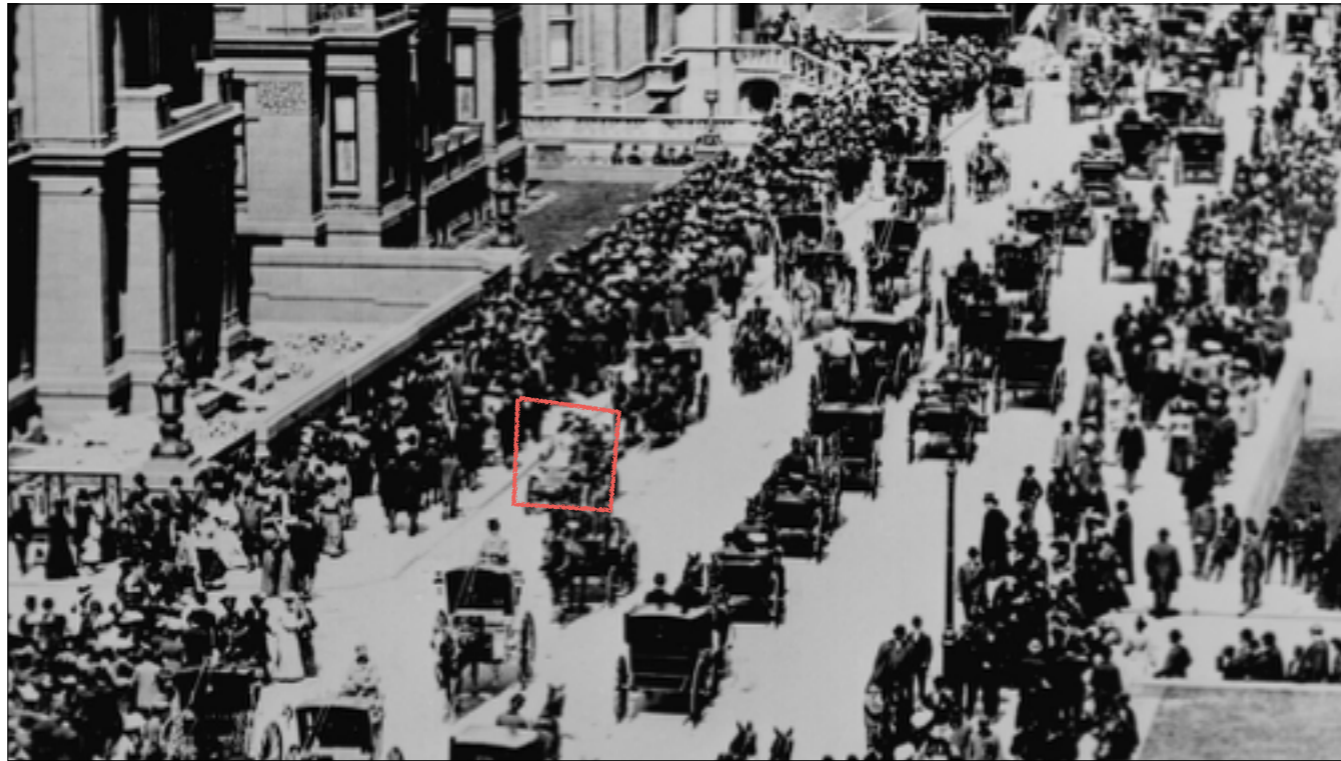Which, in turn, will facilitate a future for autonomous vehicles

October 5, 2017

Translate 40 languages!

Do business in more than 60 countries?

Question 2

1900 … 1 automobile in NYC

13 years later … the move to automation was nearly complete.

We poised to live thru a similar transition … if you don't want to be in the horse trade, you will need to unlearn many things about your business.

Most standard processes and tasks will executive by systems that are data driven, cognitive and automated

"In the next five or six years I think that the accounting and auditing profession will change more than it has in the last 30 years."
—Cathy Engelbert, CEO Deloitte

"In the next five or six years I think that the accounting and auditing profession will change more than it has in the last 30 since I have been here," said Engelbert. "When I started, I had no computer. We had telex, no fax. There was no voice mail, no text, no email. Sometimes I would be happy to go back to that day. We used pencils and 12-column paper. Obviously we have evolved a lot since then."

March 17, 2018

Price Waterhouse Cooper LLP, a Big Four accounting firm that has supported various blockchain projects, has announced a blockchain audit service that it claims will encourage people to use the still new technology, according to The Wall Street Journal.

PwC was expected to present the new service Friday. The service will allow companies to offer an outside review of their use of blockchain technology, thereby ensuring they are using it properly and enabling employees to monitor the company's blockchain transactions.

PwC believes the service will make people more comfortable with blockchain technology.

A. Michael Smith, a partner at PwC who oversees internal audit solutions, told The Wall Street Journal the service provides the need for an independent validation that the technology is operating as intended.

Blockchain technology delivers an immutable record of transactions using decentralized digital ledgers. While the technology has to date been associated with cryptocurrencies, it can also be used for online identity verification, supply chain management and auditing financial transactions. In auditing financial transactions, it can assume part of an auditor's role.

PwC recognizes the obstacles to the technology's adoption. These include concerns about compliance within companies and organizations, as well as concerns about risk management and corporate controls. While blockchain is often considered tamper-proof, its adoption presents issues similar to that of deploying any information technology.

Vicki Huff, PwC's global innovation leader, said many compliance teams do not know what to do with blockchain technology.

Today, Feb. 26, 2018:

The nation's top lawyers recently battled artificial intelligence in a competition to interpret contracts — and they lost.

A new study, conducted by legal AI platform LawGeex in consultation with law professors from Stanford University, Duke University School of Law, and University of Southern California, pitted twenty experienced lawyers against an AI trained to evaluate legal contracts.

Competitors were given four hours to review five non-disclosure agreements (NDAs) and identify 30 legal issues, including arbitration, confidentiality of relationship, and indemnification. They were scored by how accurately they identified each issue.

Unfortunately for humanity, we lost the competition — badly.

The human lawyers achieved, on average, an 85 percent accuracy rate, while the AI achieved 95 percent accuracy. The AI also completed the task in 26 seconds, while the human lawyers took 92 minutes on average. The AI also achieved 100 percent accuracy in one contract, on which the highest-scoring human lawyer scored only 97 percent. In short, the human lawyers were trounced.
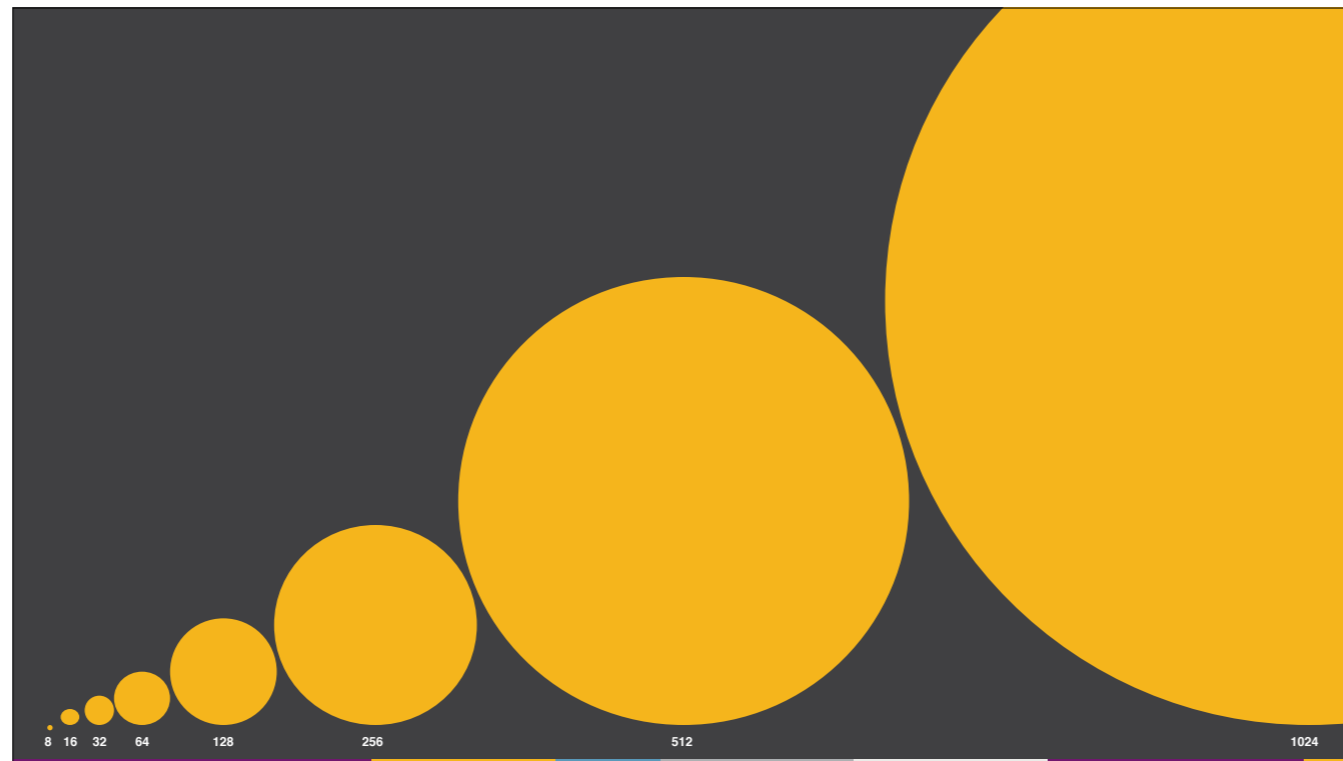
Question 3

To What Trends Might Auditors Want to Pay Closer Attention?

@jackuldrich

1 Thousand
1 Million
1 Billion
1 Trillion
1 Quadrillion

What is the mathematical relationship between these numbers?

What's next? Eighteen zeroes … 1,000,000,000,000,000,000

1998

Here is an example of 1000-fold growth that you have lived through.

Here are seven additional trends that are about to experience 1000-fold growth …

Trend #1: Wireless/Bandwidth/Mobility

5G will allow society to operate in different ways. Are you prepared?

Trend #1: Bandwidth

4G … 1400–fold faster

5G … 100X faster than 4G (Download movies in second vs minutes)

What will be possible with 5G?

KPMG's vision of auditing in 2023.
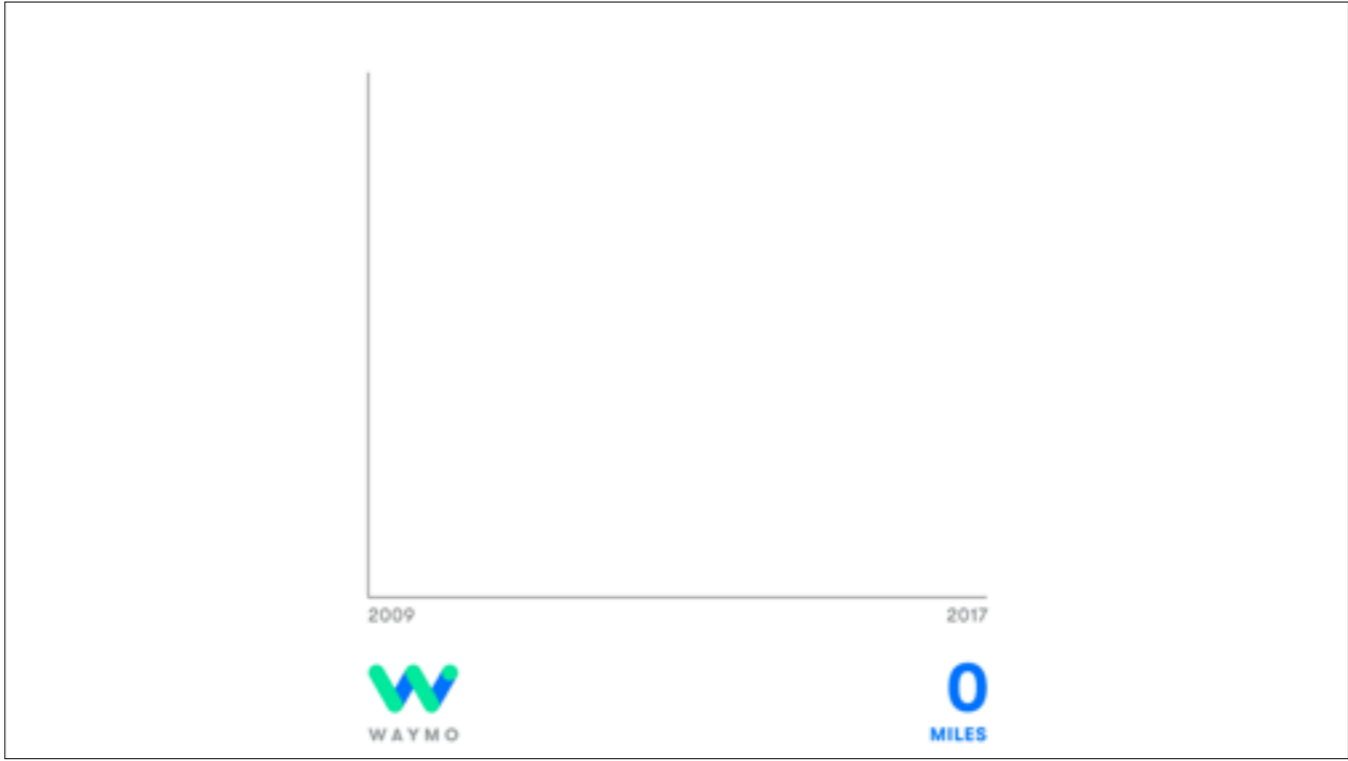
Trend #4: Robotics

Drones: Feb 8, 2018

August 25, 2017

This self-driving truck just drove from California to Florida

Embark: LA to Jacksonville —2,400 miles on Feb 6, 2018

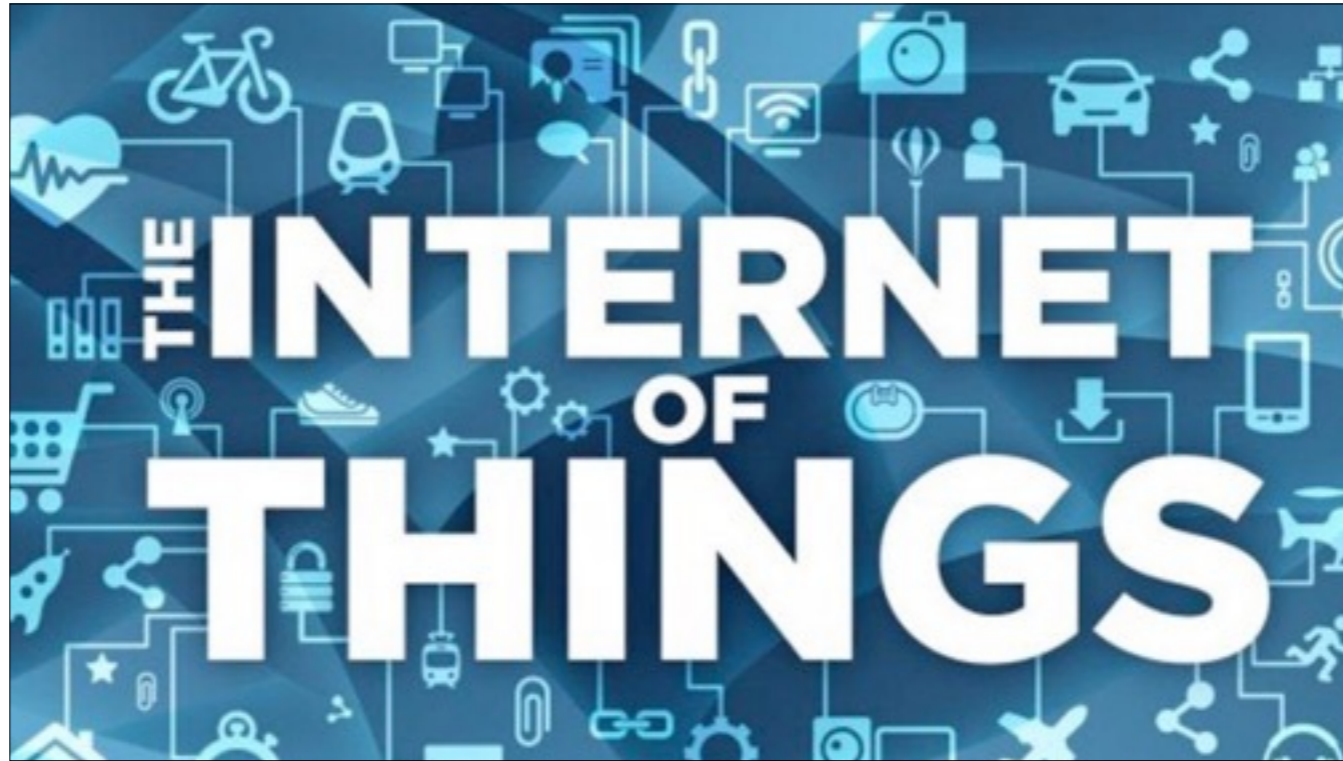A self driving truck transporting self driving cars!

March 19, 2018: Elaine Herzberg

Question 4

Bridgit Driscoll — the first pedestrian fatality.

Trend #5: M2M, Industrial Internet, Internet of Everything,

The extension of the Internet to the physical world.

Savings:

Deloitte's HQ in Amsterdam. World's smartest building—houses 2,500 people but only 1,000 offices.

The greenest building in the world

All told, the Edge is packed with some 28,000 sensors.

App knows individuals preference for lighting and heating

Makes best of humans!

"Hot design" … 2500 workers but only 1000 desks

"We think we can be the Uber of buildings," says Coen van Oostrom, chief executive officer of OVG Real Estate, the building's developer. "We connect them, we make them more efficient, and in the end we will actually need fewer buildings in the world."

November 2017: FDA approves first digestible pill

The Food and Drug Administration has approved the first digital pill for the US which tracks if patients have taken their medication. The pill called Abilify MyCite, is fitted with **a tiny ingestible sensor (the size of a grain of sand) that communicates with a patch worn by the patient** — the patch then transmits medication data to a smartphone app which the patient can voluntarily upload to a database for their doctor and other authorized persons to see. Abilify is a drug that treats schizophrenia, bipolar disorder, and is an add-on treatment for depression.

The Abilify MyCite features a sensor the size of a grain of sand made of silicon, copper, and magnesium. An electrical signal is activated when the sensor comes into contact with stomach acid — the sensor then passes through the body naturally. A patch the patient wears on their left rib cage receives the signal several minutes after the pill is ingested. The patch then sends data like the time the pill was taken and the dosage to a smartphone app over Bluetooth. The patch also records activity levels, sleeping patterns, steps taken, activity, and heart rate, and must be replaced every seven days. The patient's doctor and up to four other people chosen by the patient, including family members, can access the information. The patient can revoke access at any time.

Trend #8: Artificial Intelligence/computer processing power

January 2017

Artificial intelligence … "the most disruptive technology since the industrial revolution."

"The new electricity"!

Merrill report … add between $14–$33 trillion

Accenture says AI has the potential to grow global economy by 4.6% annually by 2035!

IBM Watson … 80 trillion calculations per second

October 21, 2017

Running millions of game simulations against itself, it took 40 days for it to learn--from scratch--how to beat the World champion version of itself. That is truly game-changing, not only for Go, but also for how new knowledge is discovered. How accurate or complete is your domain expertise? There's a lot more to discover, is what this fascinating experiment in learning with Alpha Go Zero is telling us.
"The idea of Alpha Go is not to go out and defeat humans, but actually to discover what it means to do science--for a program to be able to learn from itself what knowledge is," according to Silver in a YouTube post about the achievement.

Example: Class 3, KPMG teaching IBM Watson to support audits
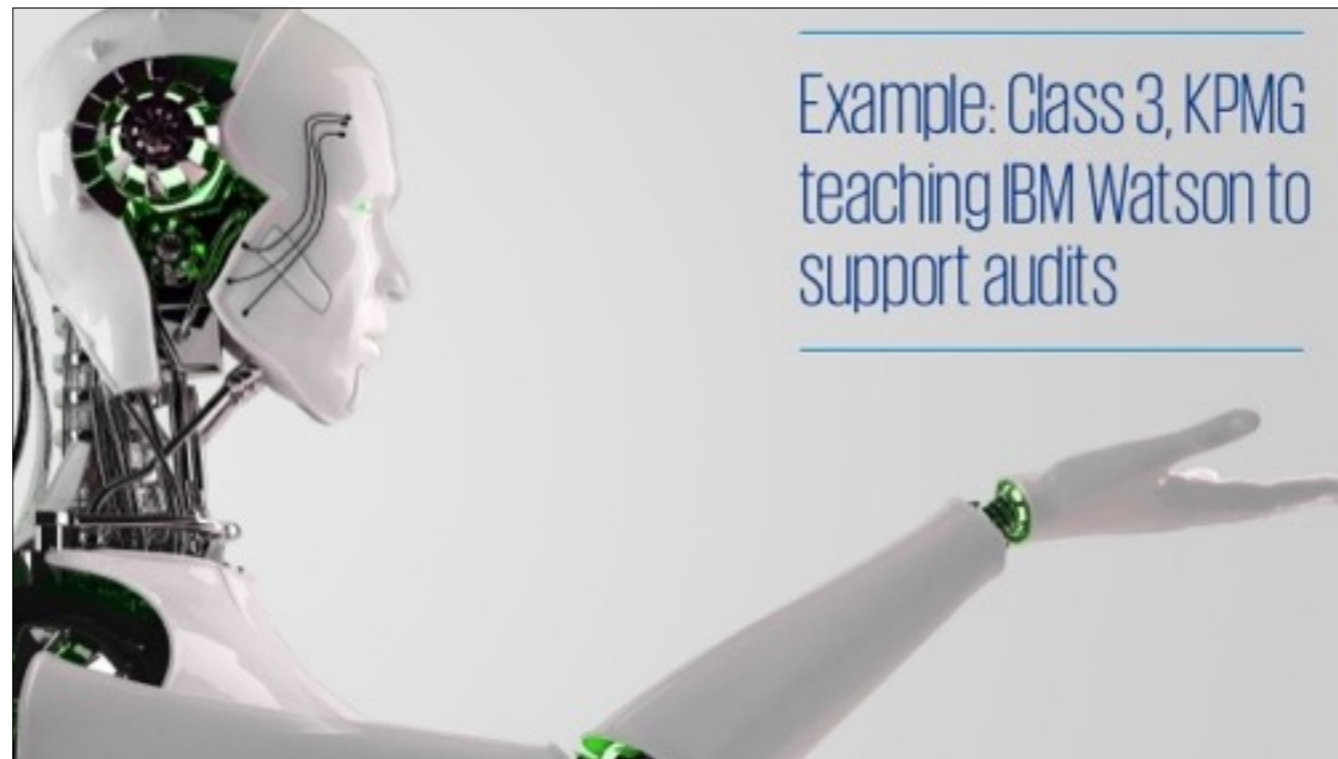
KPMG and IBM announced plans to apply IBM's Watson cognitive computing technology to KPMG's professional service offerings, with a focus on auditing services.

The agreement comes after several recent KPMG initiatives using cognitive technologies to enhance and deliver innovative business services.

Providing greater collaboration between human and systems, cognitive technology enables communication in natural language, analyzing massive amounts of data to quickly deliver insights. Watson, accessible through a variety of applications, integrates machine learning and other artificial intelligence technologies in a scalable system.

"The cognitive era has arrived," stated KPMG chairman and CEO Lynne Doughtie. "KPMG's use of IBM Watson technology will help advance our team's ability to analyze and act on the core financial and operational data so central to the health of organizations and the capital markets. In addition to the unprecedented possibilities for enhancing quality, the potential for cognitive and related technologies to help us pursue new business offerings is extraordinary."

As many of KPMG's audit, tax, advisory and other professional services rely on judgment-driven processes, the data analysis and innovative learning capabilities of cognitive technology can transform how the firm deploys talent, time, capital and other resources.

"Auditing and similar knowledge services are increasingly challenged with **tackling immense volumes of unstructured data**," stated John Kelly, senior vice president of cognitive solutions and IBM Research. "Cognitive technologies such as Watson can transform how this data is understood and how critical decisions are made. By applying Watson, KPMG is taking a forward-looking approach to extending its expertise, helping professionals and clients gain new insights from critical enterprise information."

KPMG will be working with Watson to develop select cognitive services to **meet extensive audit-specific security, confidentiality and compliance**

Trend #10: Big Data

Partner with Emerson for heating control

Everything

March 5, 2018: Amazon to explore banking … help the unbanked!

January 29, 2018: Amazon, JP Morgan, Berkshire Hathaway … new healthcare partnership.

Bezos … "**We will bring a 'beginner's mind'** to the healthcare arena."

Jan 22, 2018. Customers expectations are about to change.

Convenience, ease, etc.

What will your customers expect from Pfizer Canada. Their definition of "essential" is about to change.

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In the beginner's mind there are many possibilities, but in the expert's there are few

- Shunryu Suzuki

What two colors are the yield sign?

Just as yield signs are yellow and black anymore … either are taxis

Trend #8: Collaborative Consumption/Sharing Economy

Uber $80 billion valuation.

$1.3 million in 2011

March 19, 2018:

Lyft is now testing a subscription services.

30 rides for $199 a month!

Question 5

Bringing the benefits of blockchain to business.

Learn How

pwc

PwC has developed a proprietary private equity platform that confirms transactions in real-time. Allows for real-time auditing.

Question 6

Perhaps you think 3D printers are still:

1. too slow
2. too expensive
3. poor quality

Trend #10: Quantum computing

Do You Think You'll Live to 100?
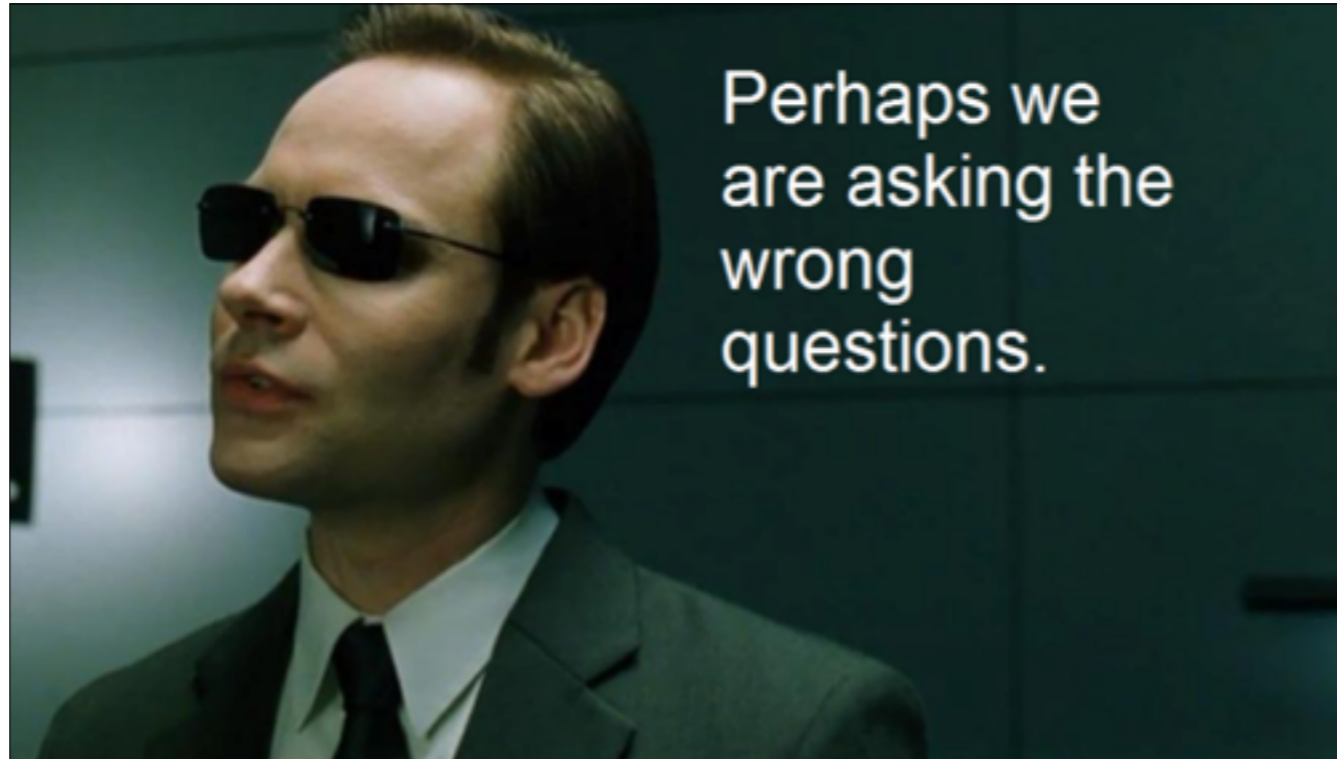
1.   Yes
2.   No

@jackuldrich

Trend #6: Genomics

price of sequencing genome will drop from$100 million (2007) to pennies by 2022.

23andMe … 10 genetic diseases for $99

Perhaps we are asking the wrong questions.

But, perhaps, that was the wrong question?

How many other changes did you see?

Do You Think You'll Live to 120?

1.   Yes
2.   No

Where we are headed by 2020:

CRISR/Gene editing/RNAi interference (turn off genes) & gene therapy (add genes)

Impact on budget deficits/pensions?

Question 8

Get a reverse mentor
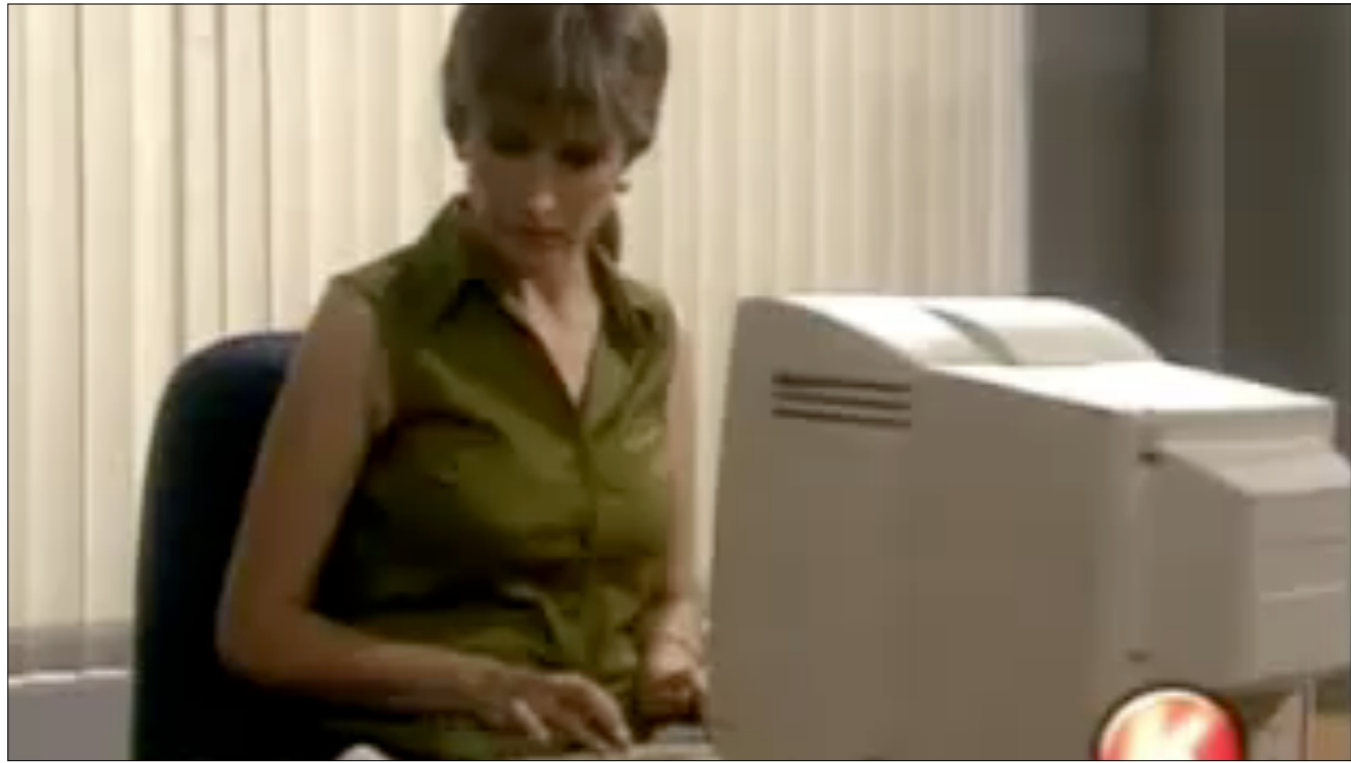
Trend #12: Virtual Reality

Grandma watching Jurassic Park

For accounting students, experience in the field is perhaps the best preparation they can get before entering the job market. But it simply isn't feasible to turn a couple dozen college students loose in a warehouse to attempt the painstaking process of auditing. That's why three faculty members from **N.C. State University**—Frank Buckless, Ph.D.; Scott Showalter, CPA; and Kathy Krawczyk, Ph.D.—**brought a warehouse to their students** via the online virtual world Second Life.

Have you been paying attention?

Another little test …

Today is the slowest rate of change we will ever experience again! (This is close to a factual statement … tomorrow is going to be just a little bit faster than today).

Trend #11: Blockchain

7 areas Blockchain will impact law:

1. Smart contracts
2. IP — patent digital works
3. Blockchain law
4. Property rights
5. Chain of custody
6. Financial transactions
7. Public notary

(Blockchain will reduce friction … whether you like it or not most people view lawyers/legal system as friction)
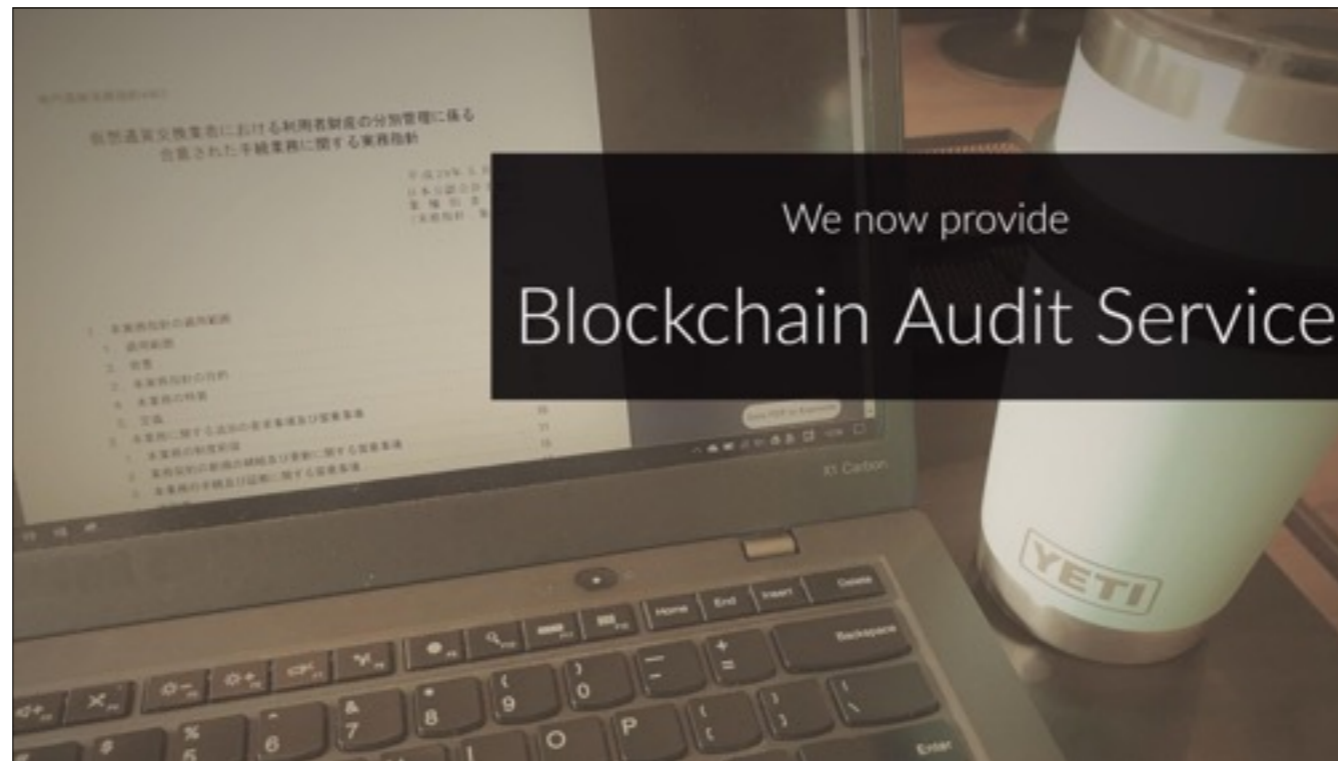
Kimura Certified Public Accountants are now providing Blockchain Audit Services to assist Cryptocurrency Exchanges in complying with new regulations in Japan?

4 opportunities:

1. Smart contracts
2. Blockchain adminsitrator
3. Services auditor for blockchain consortiums
4. Arbitrator

Think Twice … you might be on "thin ice"
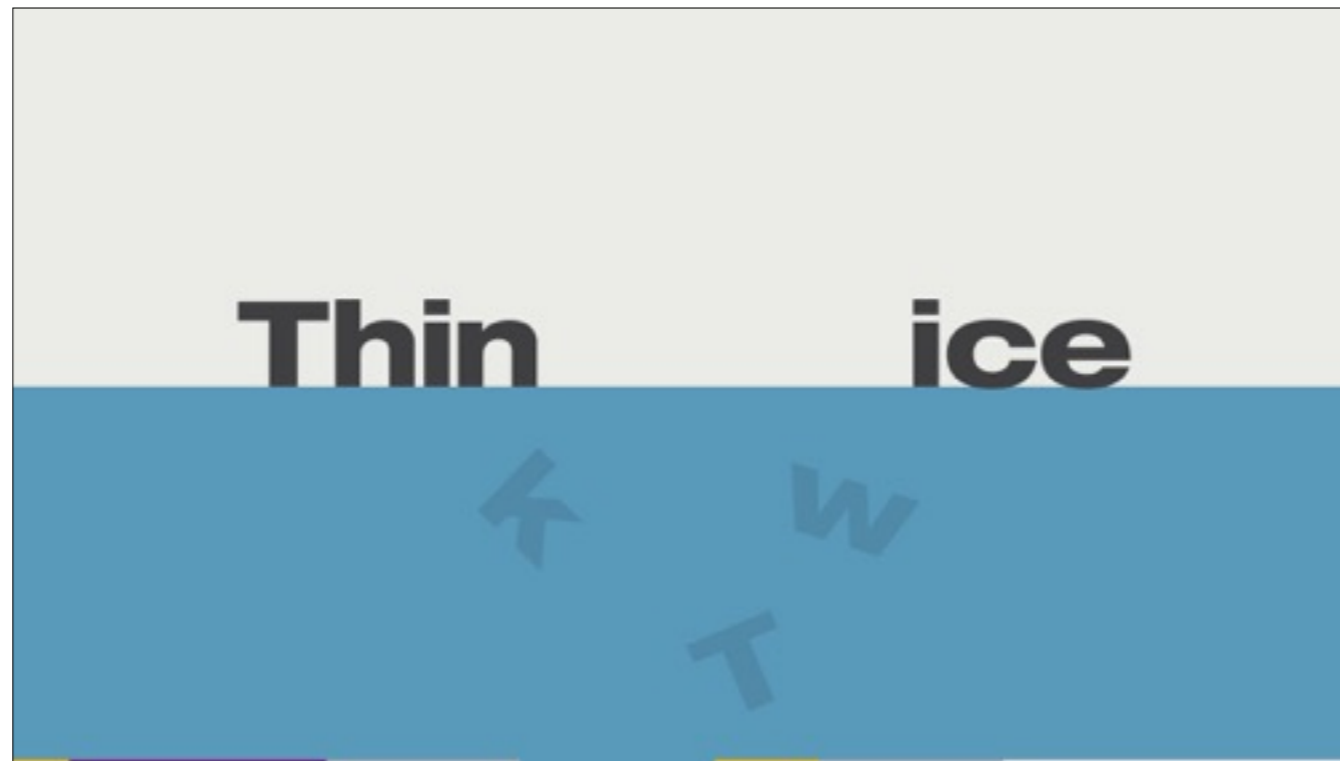
Think Twice … you might be on "thin ice"

"We want to democratize the use of AI for all auditors."

Next the next Bernie Madoff … before he ever starts

New program will allow EY people to earn credentials in future-focused skills

Data analytics
AI
Blockchain
Cybersecurity

Question:

Why the future will arrive sooner than you expect.

Here is a simple analogy that explains why.
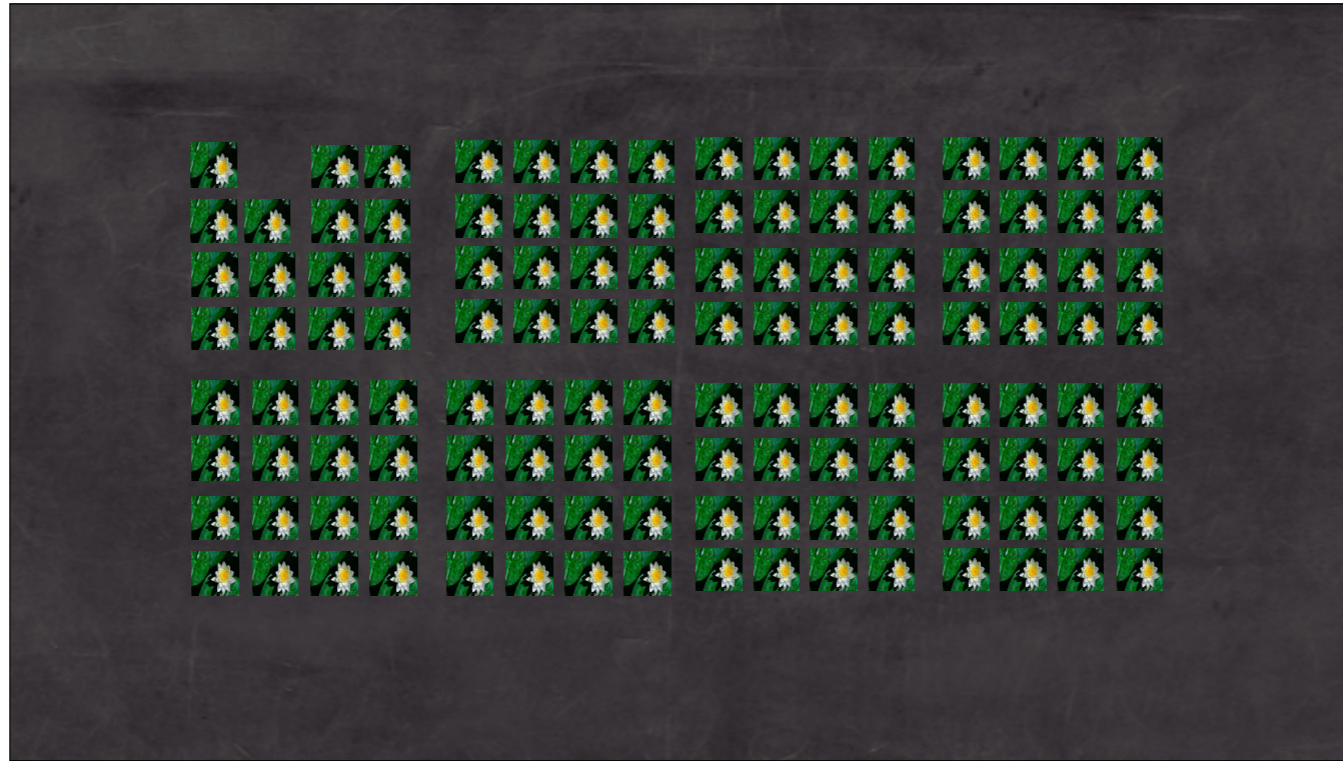
If a lilly pad doubled every day for a month, on Day 20 how much of the lake would be covered?

Day 20
0.1%

20 doublings only cover .1% … but what happens over the next ten days is amazing:

Day 20: 0.1
Day 21: 0.2
Day 22: 0.4
Day 23: 0.8
Day 24: 1.6%
Day 25: 3.2%
Day 26: 6.4%
Day 27: 12.8%
Day 28: 25%
Day 29: 50%
Day 30: 100%
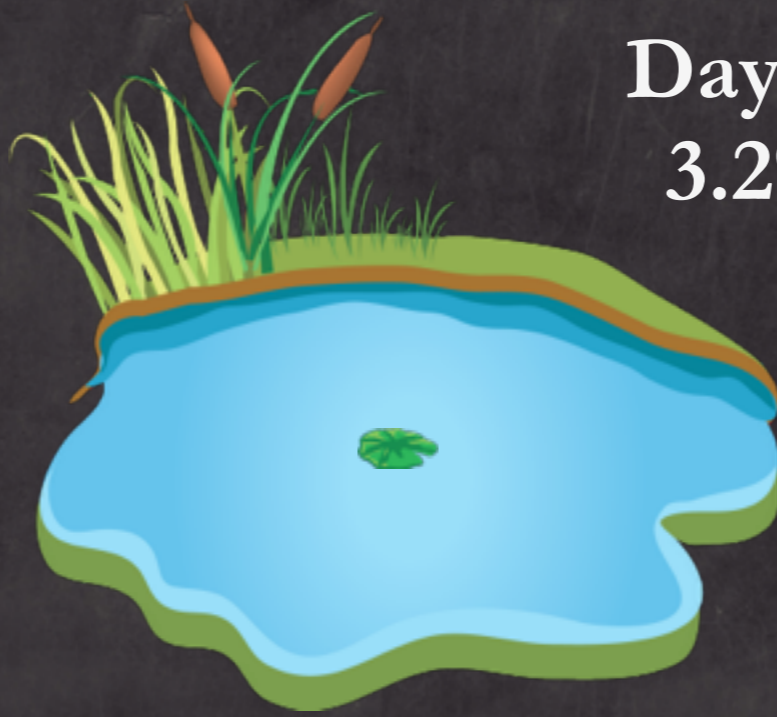
Day 30
100%
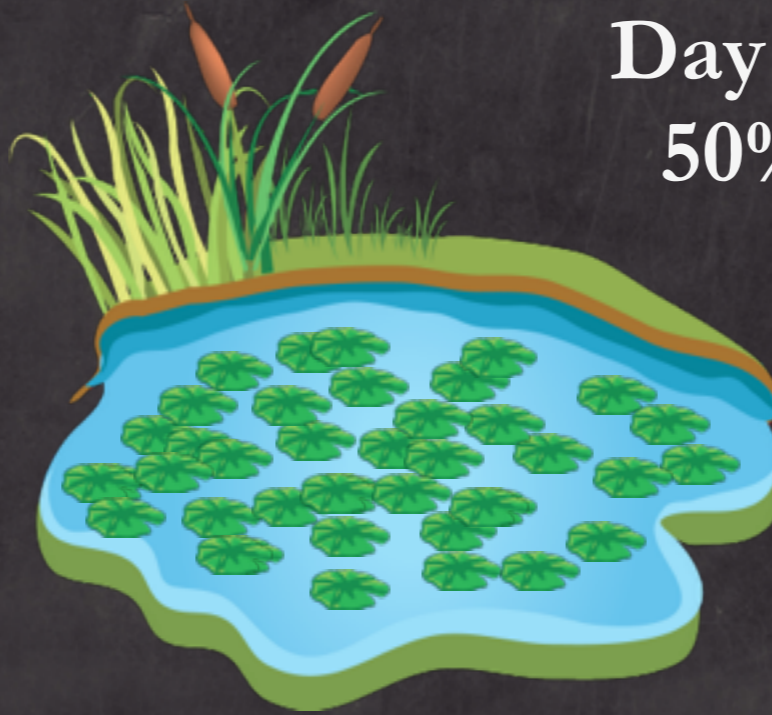
The lesson is this: We are only at Day 20 … the really big change is just ahead of us!

Give up on answers, stick with questions

"**Computers** are useless. They **can only give** you **answers**."

— Pablo Picasso
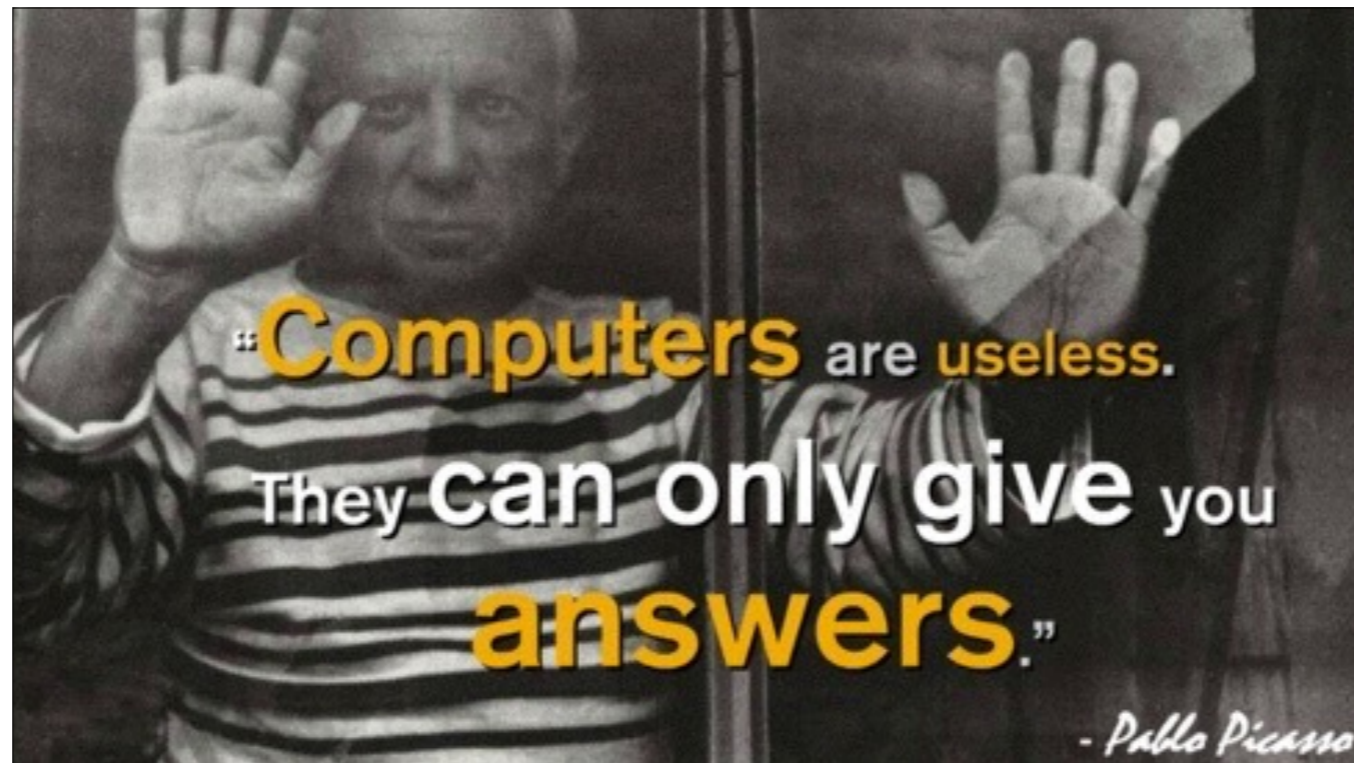
Creativity, creativity, questioning … the most valuable things. Things that computers can't do.

On a scale of 1 to 10 answer this question

How answer this question … notice the difference?

Auditors must continue to help create the future. It is more imperative than ever.

What's the "tomorrow problem" you need to be working on today?

Other good questions …

The Unlearning Curve™

The Limits of Knowledge ①
- What are the limits of your knowledge?
- How do you challenge your assumptions?
- How have things changed?
- Do you have 'no doubt' or do you know doubt?
- What don't you know?

Ask New Questions ②
- What if I'm wrong?
- Who could prove me wrong?
- Why is it done this way?
- When will it become obsolete?
- Where is the contradictory info?

Listen Carefully ③
- Why can't you hear?
- What can't you hear?
- What isn't being said?
- Who aren't you listening to?
- How can you hear better?

Embrace Ambiguity ④
- What if you turned a problem/issue upside down?
- How do you make the strange familiar?
- How do you make the familiar strange?
- How do you see what isn't there?
- Can you grow from your inexperience?

Loosen Up ⑤
- How do you check you ego?
- Could the experts be wrong?
- Is there an alternative with success?
- Is there a mess with success?
- How can you mess history teach you?
- What can history teach you?

Erase the Old ⑥
- Can you unlearn even more?
- How do you lose sight of the shore?
- How can you cultivate a beginner's mind?
- What new questions can you ask?
- Is less is more.

Question the Future Framework

1. **What don't we know?** (What aren't we seeing? Who aren't we hearing? How can we broaden our lens to see the world more clearly?) The purpose of this question is to humbly accept the notion that there is an idea, concept, product, behavioral change, technological advance, etc. "out there" that could affect your business and its customers in a material way in the near future.
2. **To what trends might your company pay closer attention?** Are there signals that an existing trend (e.g. Blockchain, the sharing economy, etc.) is moving faster than expected? Discuss the implications of this trend.
3. **How might your company stay on top of new, emerging trends and issues?** (Seek to identify at least one new informational sources (e.g. a book, a website, a new magazine, etc.) that could shed new insight on how the world is changing.
4. **Who might your organization learn from?** Is there someone on the "fringe" that your company could bring in to: 1) Discuss a new issue; 2) Stimulate new thinking; or 3) Help you see the world from a different perspective?
5. **What assumption(s) about your company's business, business model, competitors, customers, etc. might you want to challenge?** Have every member of the group share at least one article they read (since the last meeting) that seriously challenged their thinking.
6. **How might the world change faster than we expect?** Ask every participant to identify a headline from the past month (e.g. "Uber Now More valuable Than General Motors", etc.) that surprised them. Consider how these rapid changes could affect your company and its customers.
7. **How can your organization keep an open mind to the future?** (Playing off the last "headline" exercise, ask participants to construct a fictional future headline that might stretch people's thinking.)
8. **How might your company go out of business within the next 5 years?** (This question should be asked on an annual basis).
9. **What should your company do even if it might fail?** (The purpose of this question is to identify possible experiments or pilot project your organization might consider conducting.)
10. **What won't change?**
11. **What questions aren't we asking?**

<u>**Action Items**</u>:
1) List all of the questions generated during the session.
2) Ask if anyone wishes to add additional questions to the list.
3) Ask participants to identify--from their perspective--the most important question.
4) Task everyone with the responsibility for thinking further about "their" question and, at the next meeting, share their insights on how your company/organization might want to begin answering the question.

Jack Uldrich's "Think Week" Resources

Magazines/Newspapers:

MIT's Technology Review   The Economist (Technology Quarterly Review)
Wired   Fast Company
Wall Street Journal   USA Today

Websites:

MIT's Technology Review's Daily Review   KurzweilAI.net
Gizmag.com   Theverge.com
NewScientist.Com   Physorg.com
VentureBeat.com   Engadget.com
Extremetech.com   TechCrunch.com
NextBigFuture.com   FastCoDesign.com
Wired.com   The Exponential View

Excellent books:

Zero to One by Peter Thiel   *Thinking Fast and Slow* by D. Kahneman
A More Beautiful Question by Warren Berger
Non-Obvious by Rohit Bhargava   *The Inevitable* by Kevin Kelley
SuperForecasting by Philip Tetlock   *Industries of the Future* by Alec Ross
Exponential Organizations by Salim Ismail
Any book by Nassim Taleb

Other Thoughtful Futurists:

Ross Dawson   Simon Anderson
Gerd Leonard   Jim Carroll
(You can also follow me at **Google+/Jack Uldrich** and/or sign up for my free
quarterly newsletter, The Exponential Executive, at **www.jackuldrich.com**)

Planned Serendipity:

BrainPickings.com   TED Talks
BigThink.com