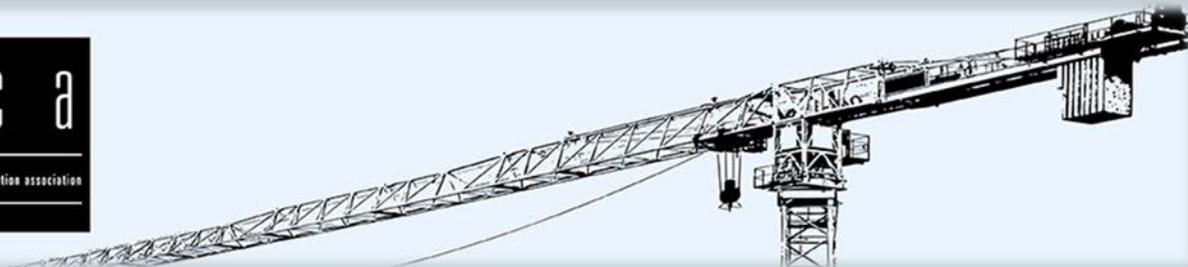


Your Company 2.0



**THE MINNESOTA CONSTRUCTION ASSOCIATION
WEDNESDAY, AUGUST 29TH, 2018**

**TOM EMISON, VICE PRESIDENT STRATEGY & INNOVATION
THE KRAUS-ANDERSON FAMILY OF COMPANIES**



2.0

2

- “2.0” is an expression; a new and improved version of something, or someone:
 - *“Astronomy researchers some day hope to find Earth 2.0.”*
 - *“Everyone agrees the new Doug is great. He's like Doug 2.0.”*

Part One

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WHAT IS INNOVATION?



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What is Innovation?

4



Idea

What is Innovation?

5



Idea + Execution

What is Innovation?

6

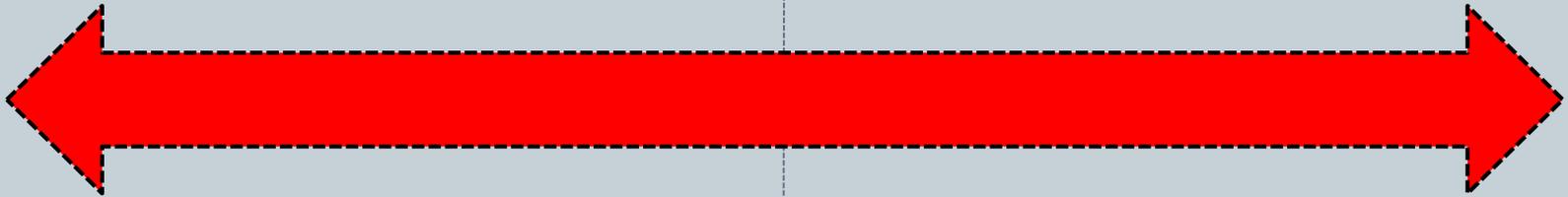


Idea + Execution = Innovation

What is Innovation?

7

- As simple as a paperwork process that can be simplified, or automated.
- Or as complex as a business model overhaul that changes the Company and disrupts everyone around you.

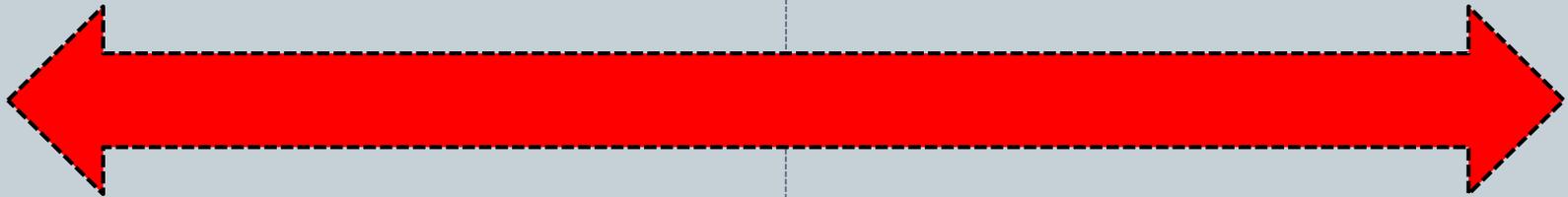


What is Innovation?

8

- As simple as a paperwork process that can be simplified, or automated.

- Or as complex as a business model overhaul that changes the Company and disrupts everyone around you.



- The improvement can be implemented and gains can be realized in **days**.

- The change requires a new business model (a NewCo) and gains are many **months** away.

How Do Strategy and Innovation Relate?

9

- **Strategy:**

- The art and science of researching, developing, documenting, communicating, implementing, and continuously improving plans that we are deeply committed to and which help us compete better than last year and better than our competition.

- **Innovation:**

- A messy business, actually. It's about R&D, discovery, experimentation, risk taking, and not knowing where you are going until you get there. It frequently has a high failure rate.

Innovation Types

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- **Basic Research:** When our aim is to discover something truly new, neither the problem nor the domain is well defined. While some organizations are willing to invest in large-scale research divisions, others try to keep on top of cutting edge discoveries through research grants and academic affiliations.
- **Breakthrough Innovation:** Sometimes, although the problem is well defined, teams can get stuck. The need to find the structure of DNA was a very well defined problem, but the answer eluded even Linus Pauling, the most talented chemist of the day. It's this way for contractors with Project Closeout. Usually, these types of problems are solved through working across domains.
- **Sustaining Innovation:** Whatever we do, we always want to get better at it. Every year, our cameras produce more pixels, our computers get more powerful and our household products become "new and improved." KA is getting VERY good at this type of innovation as we super-charge our Lean efforts.
- **Disruptive Innovation:** The most troublesome area for contractors is disruptive innovation, because its value isn't always immediately apparent. Notably, Yahoo and Blockbuster had the opportunity to invest in Google and Netflix early on, but missed the opportunity because they didn't see the potential. With our very operations-oriented style, will our leaders invest? Disruptive innovations have high failure rates. Venture capital firms that focus on disruptive investments expect most to fail. This is why companies establish innovation labs, where they can test and learn without excessive risk.

Part Two

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WHAT'S AN INNOVATION PROGRAM?



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What's an Innovation Program?

12

A centralized culture-change function that helps identify and commercialize new ideas:

- These programs are in place to complement existing processes.
- The goal is to provide a channel for the development of new thinking within the organization.

What's an Innovation Program?

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- An Innovation Program typically starts with the launch of one or two activities to test the waters for engagement:
 - A pilot can be an effective way to engage employees in a quick and easy fashion. That's why in 2016 we held a KA Innovation Summit at the Walker Art Center: we tested the waters.
 - An innovation “*challenge*” can engage a broad range of employees, especially when it aligns to a strategically important issue for the organization.
 - KAers can now access Kraus Haus where they can input ideas, or build on other's ideas. Kraus Haus provides transparency to input, reporting, and recognition for those who contribute; and drive crowdsourcing.
- Increasingly, Innovation Programs are addressing business model change at the boardroom level, or disruptive innovation.

Part Three

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SO, LET'S GO THERE:

BUSINESS MODELS ARE SHIFTING.



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In moments of strategic reflection, I wonder.

I expect you do, too....

Exciting, profound initiatives are underway in our industries. Deeper levels of collaboration, joint research, and co-development are fundamentally overhauling the capital projects delivery process. Technologies converge, accelerate, and business models are changing.

Will we have the wisdom and courage to innovate new business models?

1. According to The Construction Users Round Table (“CURT”), Operating System 1.0 is obsolete. Benchmarking data from CURT and the Construction Industry Institute (“CII”) show 90% of capital projects do not deliver to owners’ business objectives. Successful real estate and construction projects that meet business owners’ business objectives are few and far between, even in good economic times.
2. Despite years of research and mountains of best practices at the national and international levels, across all disciplines, the A/E/C/RE/FM industry just isn’t getting better.

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4. **The underlying problems (not symptoms):**
 - a) It's a V.U.C.A. world for all A/E/C/FM/RE; political polarization and uncertainty affecting trade, consumer prices, home prices, and mortgage interest rates.
 - b) Fragmented project concept, delivery, and management from entities in different disciplines with competing motives, archaic management practices, and slow technology adoption.
 - c) Low barriers to entry; market saturation; heavy competition.
5. **That's why the industry has symptoms like:**
 - a) Hypersensitivity to economic peaks and valleys
 - b) Chronically insufficient R&D globally and nationally
 - c) Commoditization; razor-thin margins
 - d) Undercapitalization and bad cash flow
 - e) Poor industry image
 - f) Litigious environment
 - g) Communication problems
 - h) Risk shifting
 - i) Workforce shortage; skilled labor, all areas
 - j) Flat/declining labor productivity
 - k) Safety concerns
 - l) Crumbling national, state, and local infrastructure
6. **But, it's not all negative news.**



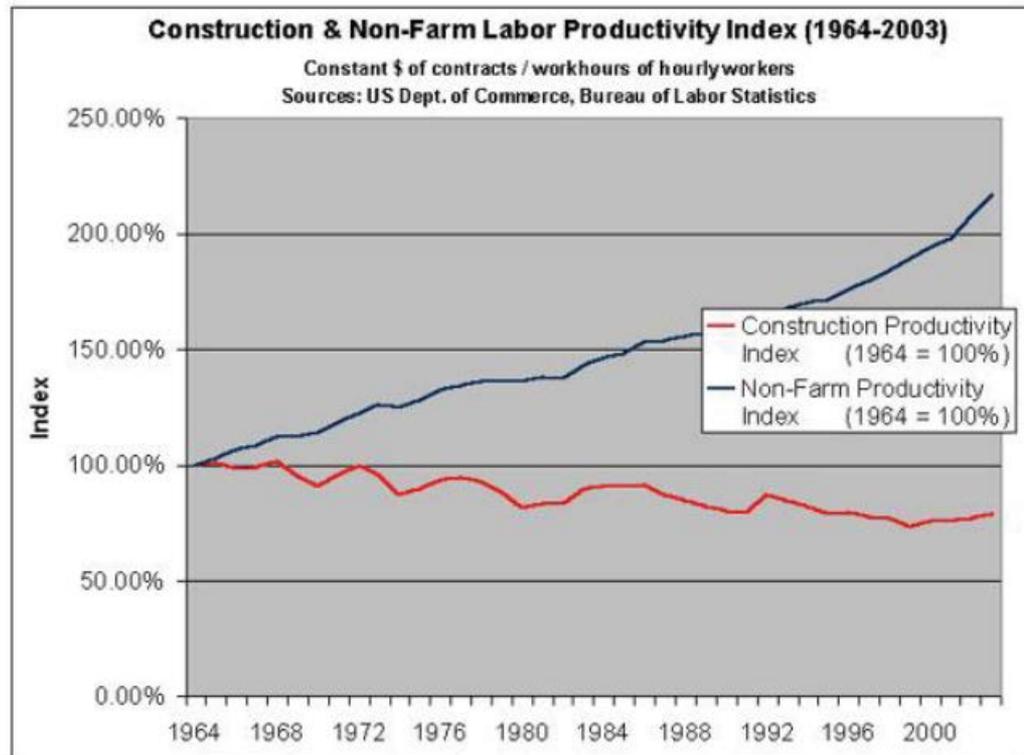
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7. According to McKinsey & Company:
 - In 2013, global investment in energy, infrastructure, mining, and real-estate-related projects was \$6 trillion. By 2030, that could be \$13 trillion.
 - Billion-dollar-plus megaprojects will account for a greater share. The big will get bigger.
 - Construction productivity has been flat for decades. In manufacturing, by contrast, productivity has nearly doubled over the same period, and continuous improvement has been the norm.



I Wonder...

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Will MCA members have the wisdom and courage to innovate new business models?

- To deliver operational excellence today while innovating new business models?*

Part Four

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TONY SEBA.



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Tony Seba

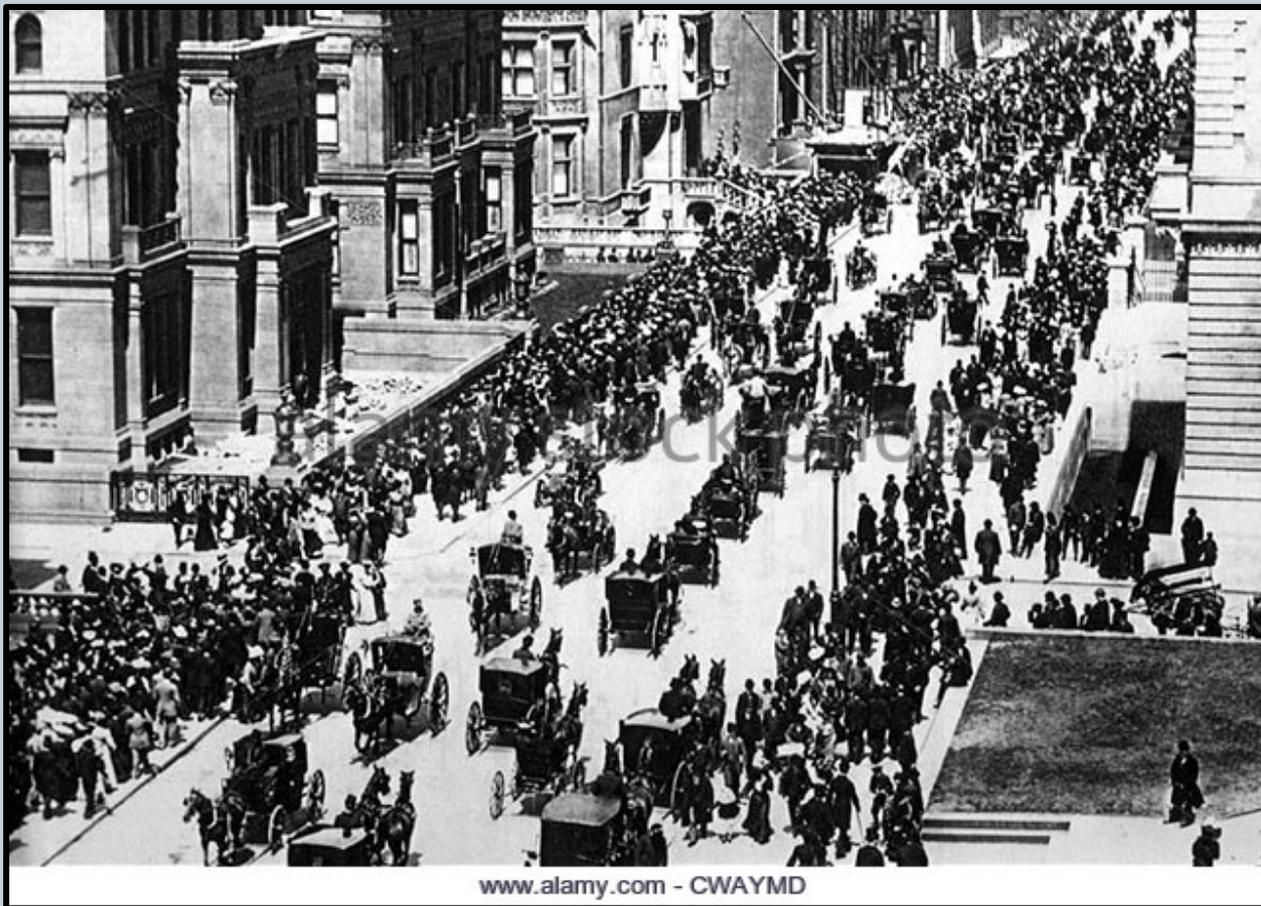
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“Why do smart people in smart organizations consistently fail to anticipate, or lead market disruptions?”

Find the Car

21

5th Avenue, NYC, 1900, Easter Day Parade.



www.alamy.com - CWAYMD

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Find the Horse

22

5th Avenue, NYC, 1913, Easter Day Parade.



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1985

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- **The Mobile Phone:**

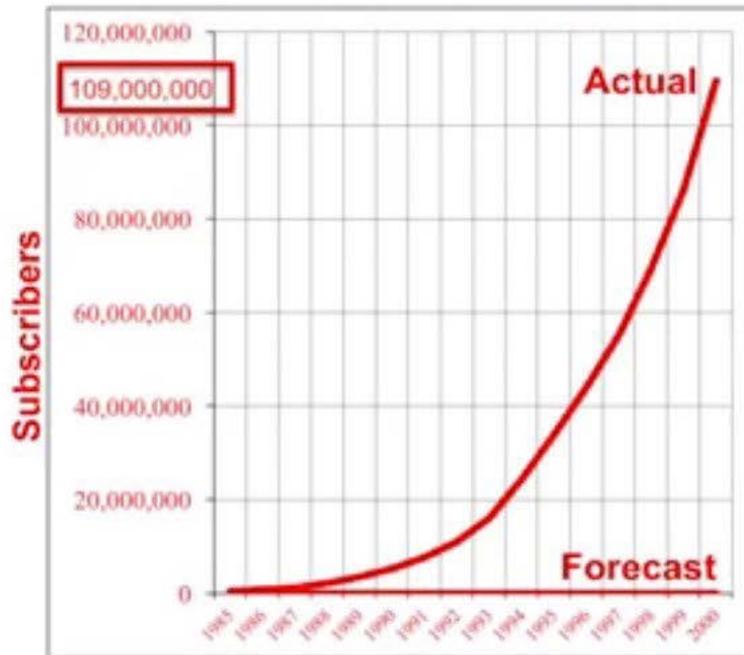


- Experts hired by AT&T predicted total market adoption by the year 2000 at 900,000 subscribers.
- Actual number was 109,000,000.
- They were off by a factor of 121X.

Lost Opportunity

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AT&T Disrupted while \$\$ Trillions Created



Company	Home Country	Market Cap. (\$MM)
1 Apple	USA	\$763,567
2 Google	USA	373,437
3 Alibaba	China	232,755
4 Facebook	USA	226,009
5 Amazon.com	USA	199,139
6 Tencent	China	190,110
7 eBay	USA	72,549
8 Baidu	China	71,581
9 Priceline Group	USA	62,645
10 Salesforce.com	USA	49,173
11 JD.com	China	47,711
12 Yahoo!	USA	40,808
13 Netflix	USA	37,700
14 LinkedIn	USA	24,718
15 Twitter	USA	23,965
Total Market Cap of Top 15		\$2,415,867

\$2.4 trillion - Market Cap Top 15 Global Internet Public Companies (2)

- AT&T's **landline telephony** market was **disrupted**,
- It **Missed out** on a **multi-trillion dollar opportunity!**

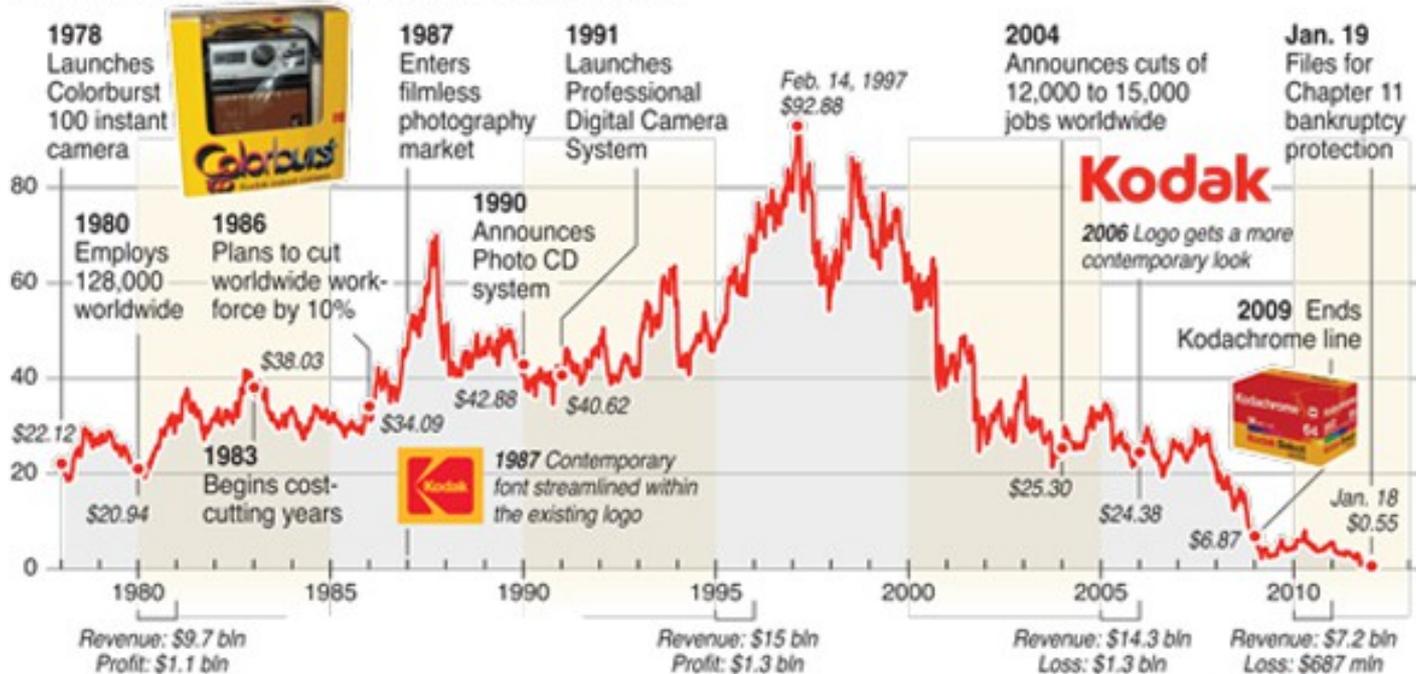
What About Kodak?

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KODAK FILES FOR BANKRUPTCY

Eastman Kodak Co, a 130-year-old photographic film pioneer, has filed for bankruptcy protection. It said it had also obtained a \$950 million, 18-month credit facility from Citigroup to keep it going

SHARE PRICE HISTORY — WEEKLY CLOSE IN US\$



Sources: Eastman Kodak Co., Thomson Reuters, news reports

REUTERS

This Just In...

27

- In the first half of this year alone, \$1 billion of venture capital streamed into the construction technology space, a recent Jones Lang LaSalle report found.
- Our industry is finally becoming attractive to the investment.

What's an Exponential Technology?

29

2016: Key Exponential Technologies

1. Sensors / Internet of Things
2. Artificial Intelligence / Machine Learning
3. Robotics
4. Solar PV
5. Energy Storage
6. 3D Printing
7. 3D Visualization
8. Mobile Internet & Cloud
9. Big Data / Open Data
10. Unmanned Aerial Vehicles / Nano Satellites
11. eMoney / eFinance

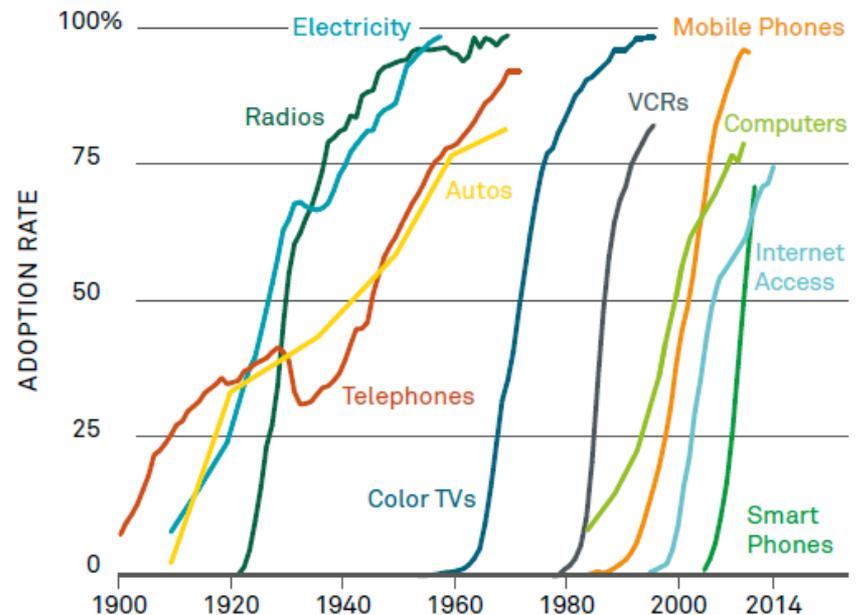
Tony Seba

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- **Reason #2:**
 - *Technologies are gaining market adoption faster.*

QUICKER ADOPTIONS

U.S. Technology Adoption Rates, 1900–2014



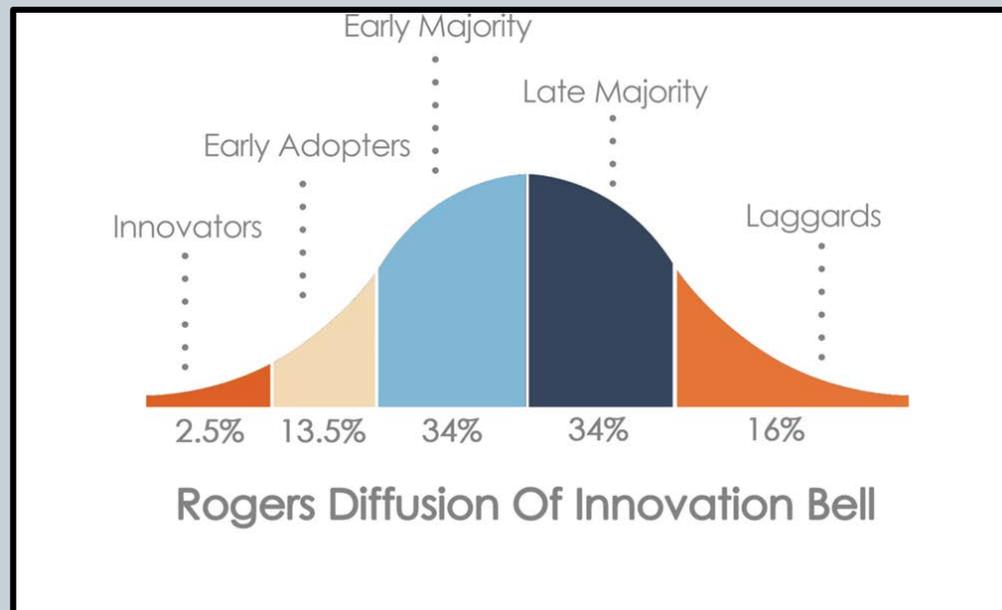
Sources: BlackRock Investment Institute, Federal Communications Commission, U.S. Census Bureau, World Bank and Statista, July 2014. Note: Adoption rates are based on household ownership except for cell phone and smart phones, which are based on ownership per capita.

Tony Seba

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- **Reason #3:**

- *In order to keep up, companies are changing business models with greater speed AND non-traditional competitors are stealing share.*



Part Five

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SO WHAT?



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So What?

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- 1. Collaborative project delivery methods are becoming more popular**
 - The days of design-bid-build domination might be winding down, as experts expect collaborative approaches to become more common for projects. This will be good. Design-build, public-private partnerships and integrated project delivery are three of the most often-cited methods that are altering the industry and are likely to gain ground.
- 2. The labor shortage will continue to challenge the industry**
 - One trend that the industry hoped would fade away is, instead, raging on. The skilled labor shortage is a major concern for firms across the U.S. as employers struggle to staff their job sites.
- 3. The feeling of uncertainty will linger under President Trump**
 - With Donald Trump winning the election, many firms were cautiously optimistic about his construction and development background, his promises to cut regulations and his massive infrastructure proposal. A big ?
- 4. Offsite/modular construction will gain a stronger foothold**
 - Offsite construction (modular or prefab), isn't new to the industry. However, the building method will grow as quality, time and labor concerns make alternatives to traditional construction methods more attractive. Will GCs lead, or primes?
- 5. Should you try to grab a piece of the infrastructure spending boost?**
 - Infrastructure spending saw major play during the 2016 campaign, with Donald Trump proposing \$1 trillion over 10 years.

So What?

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6. IoT holds the potential to revolutionize job sites

- *"The challenges become where you reach the point where there's this tidal wave of information,"* Tony Colonna, senior vice president for innovative construction solutions at Skanska USA.

7. Construction costs will rise due to materials and labor

- One of the most common concerns industry experts cite for 2017-2020 is the escalating cost of rising material and labor costs. Our subs and suppliers will likely struggle to maintain margins in the coming years.

8. VR/AR tech will pick up steam

- VR and AR can allow the construction team to detect errors ahead of time and avoid costly mistakes. It has the potential to improve job site safety, such as letting managers and workers view job site conditions without subjecting them to safety hazards.

9. Sustainable construction is changing its message to resiliency

- There is more of a focus on the bottom line, as resiliency and high-performing buildings lower energy costs and create jobs.

My Conclusion

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- 1. Barring a Black Swan event, major market disruption will start in our marketplace (A/E/C/RE/FM) by 2020:**
 - *“By 2030, every new or renovated house, school, hospital, factory, and commercial building will be solar powered.” -- Tony Seba*
 - RICS *Summit of the Americas* and *World Built Environment Forum* in Washington, DC., published by *Construction Dive*: *“...three trends shaping the future: big data; high-performing building resiliency, lifecycle asset value; and collaborative contract approaches such as IPD and P³.”*
 - RICS is a global valuation and consulting business in A/E/C/RE.*
 - *“Technology is changing the industry in ways that are good for big E&C firms.” PWC 2017 Annual Industry Report.*

Will MCA members have the wisdom and courage to innovate new business models?

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OR, WILL YOU BE...

***“...SMART PEOPLE IN SMART
ORGANIZATIONS THAT FAIL TO
ANTICIPATE, OR LEAD MARKET
DISRUPTIONS?”***



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Part Six

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YOU FACE CHOICES. THREE OF THEM.



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Three Strategic Choices When Faced With Disruptive Innovation

38

One: Inaction, or Inadequate Action

- React too late or ineffectively.
- Under fund change management.
- Status quo prevails.
- Stubborn, conservative, disinterested, naive, weak.
- *“But, we’re making money.”*
- The slow death of a thousand small defeats that go unaddressed until...

Two: Reposition

- With superior culture of innovation and R&D, anticipate and respond.
- Lead industry change.
- OS 2.0 developed and embraced while OS 1.0 gradually, or suddenly killed.
- Move our teams higher and earlier in the value chains.
- Large-scale business model change through real-time collaboration across our industry segments of A/E/C/RE/FM.

Three: Deliberate Exit

- Market and sell.
- Orderly liquidation.



KA Innovation Philosophy

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- **Aspire. Be Bold.**
 - KA needs a few far-reaching innovations that are risky.
- **Be Choosy.**
 - Our problem isn't finding enough innovations. It's finding those that can be commercialized.
- **We Have a Process.**
 - Create, incubate, activate, and motivate.
- **KA Must Continue to Evolve.**
 - Therefore, it is alright to be dissatisfied with the status quo.
- **Accelerate; Fail Small and Often.**
 - Don't be too slow, or thorny to change. We do not want to leave people behind.
- **Quick-Scale.**
 - The seemingly safer option of scaling up over time is usually a death sentence.
- **Extend into our Key Relationships and Communities.**
 - Innovations in Real Estate and Construction REQUIRE collaboration with our external partners.
- **A Culture of Loyal and Smart Innovators.**
 - We're building a culture of leaders who coexist within a successful legacy Company and move that needle.

End

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- Thank you MCA!

