Transformational Changes in Higher Education and Facilities Management

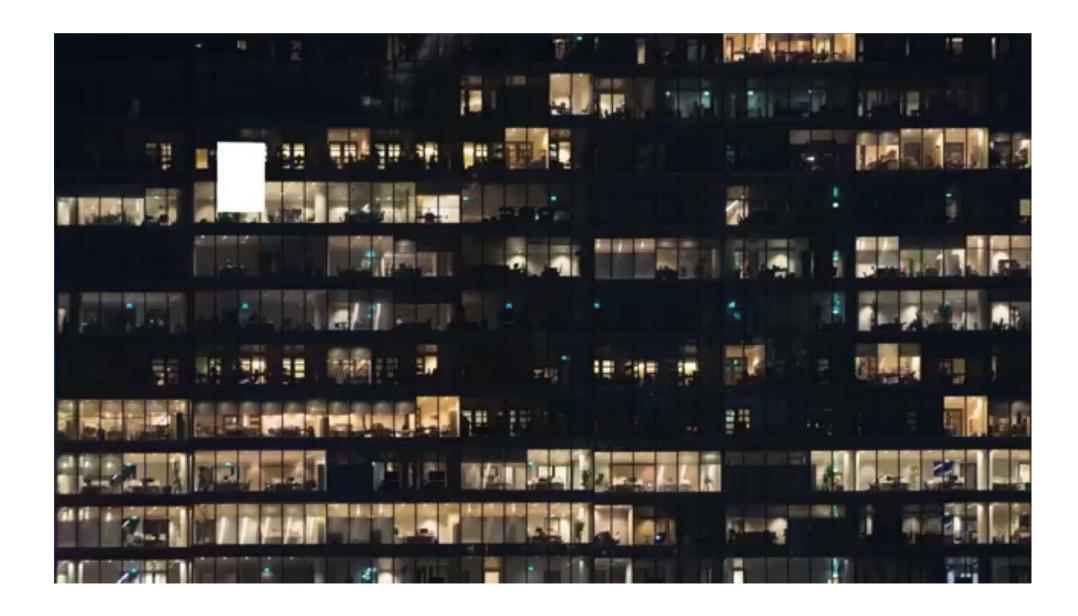
Lander Medlin, APPA



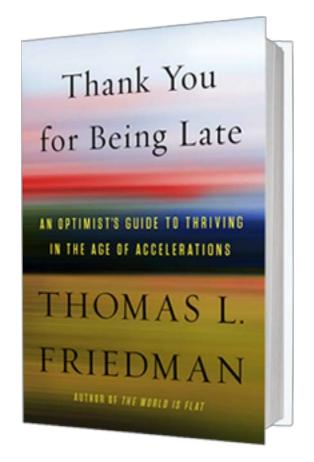


"If the rate of change outside your organization is greater than the rate of change inside your organization, the end is in sight."

Jack Welch - former CEO of General Electric

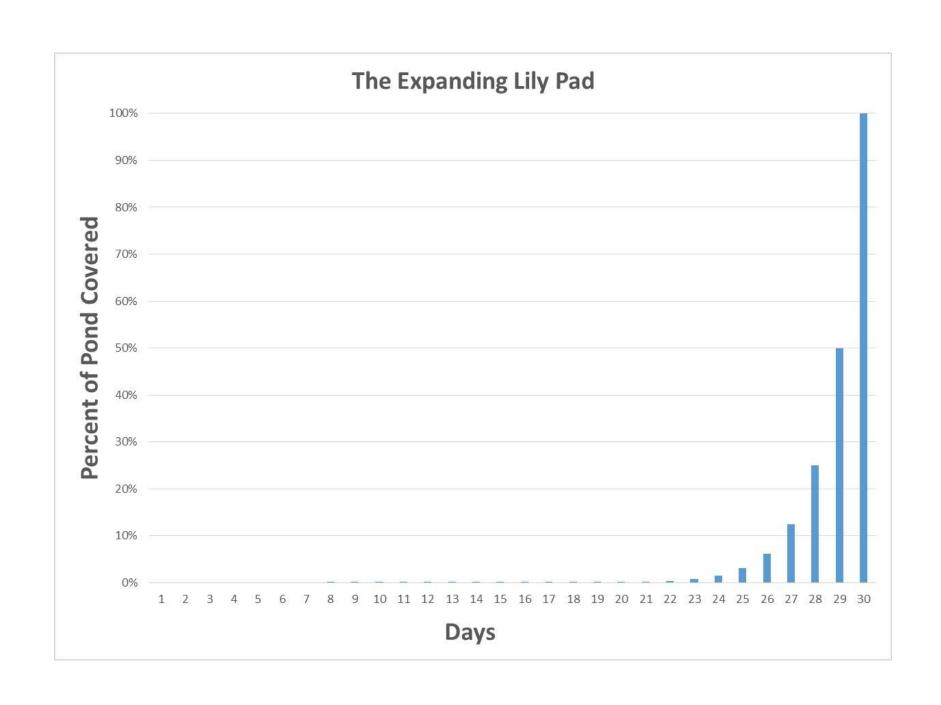


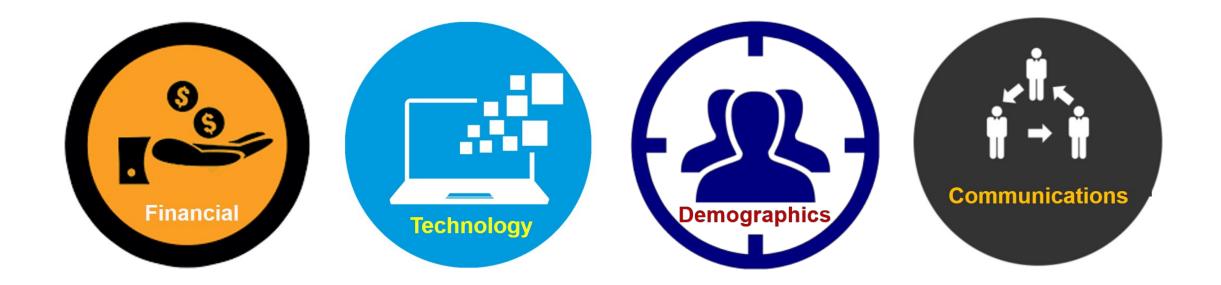




Thank You for Being Late
An Optimist's Guide to Thriving in the Age of Accelerations
Thomas L. Friedman

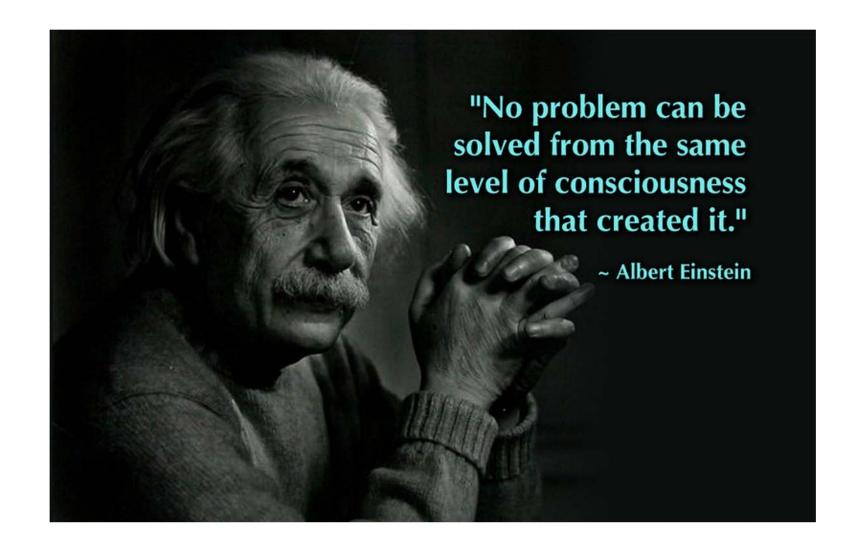




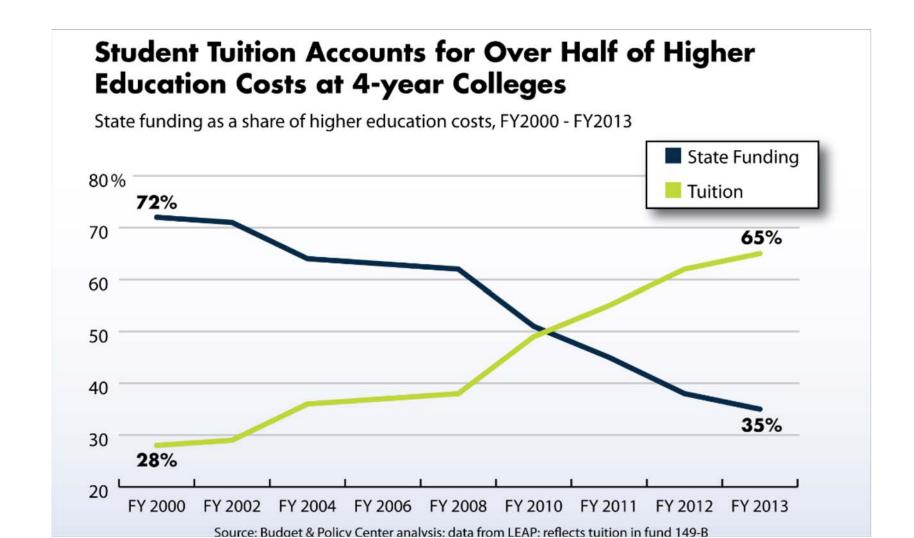




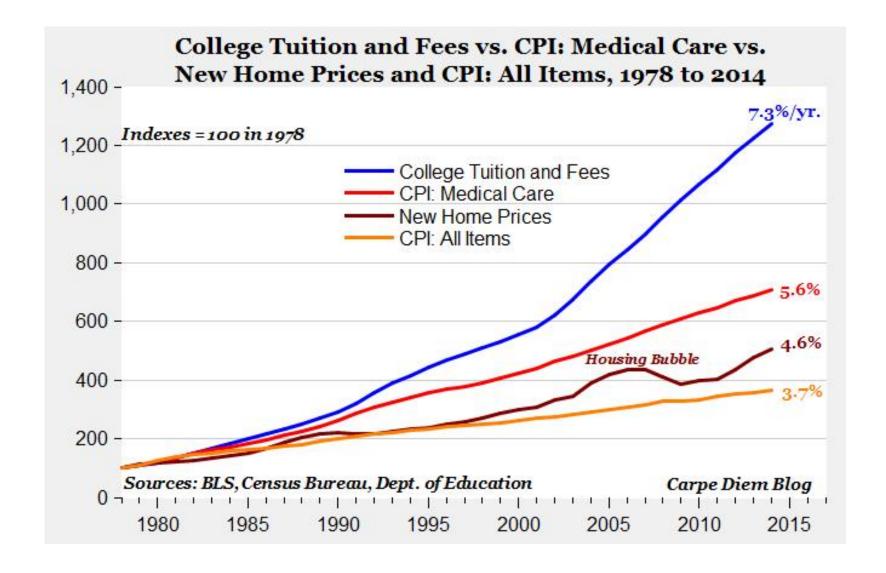
















Modernization & Renewal





Not all buildings are created equal

Developing a portfolio approach will allow for a focused investment approach based on the Institutional Strategic Direction.

Core considerations to the portfolio approach

- Building Age
- Building Condition
- Building Location
- Institutional focus
- Academic requirements
- Student needs

- Historical Significance
- Safety/Code requirements
- Recruitment/Retention
- Transitional Space
- Adaptive Reuse

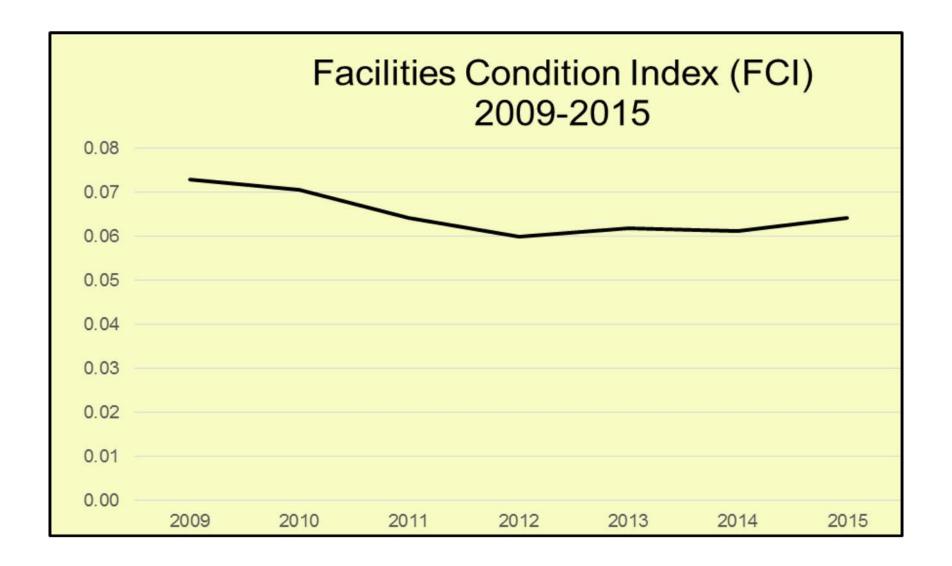
Institutional Leaders for buy in and communication

- Institutional Priorities
- Building Needs
- Future Campus Direction



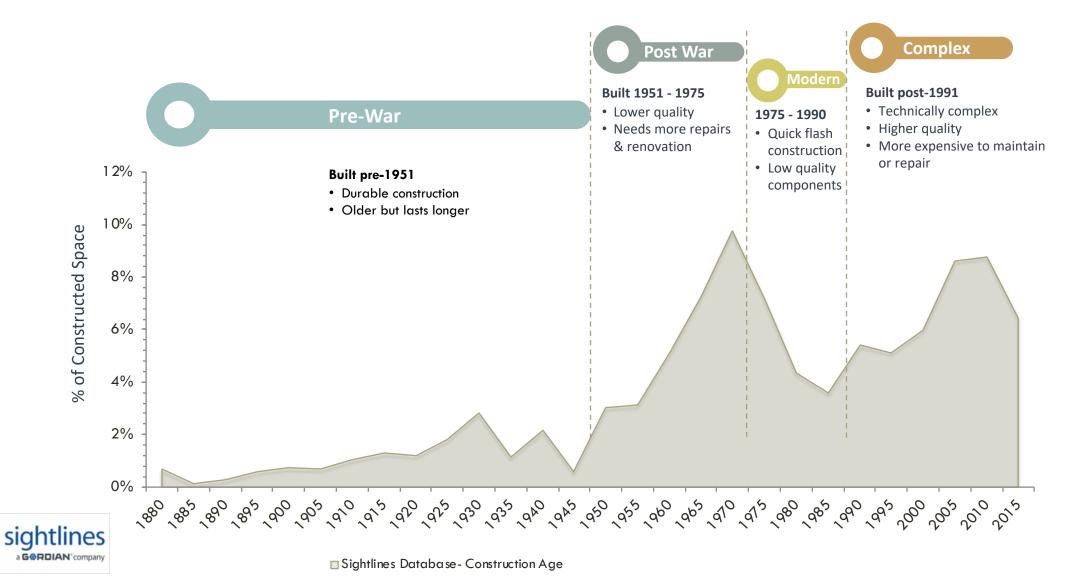
Facilities Condition Equilibrium





Growing Challenging

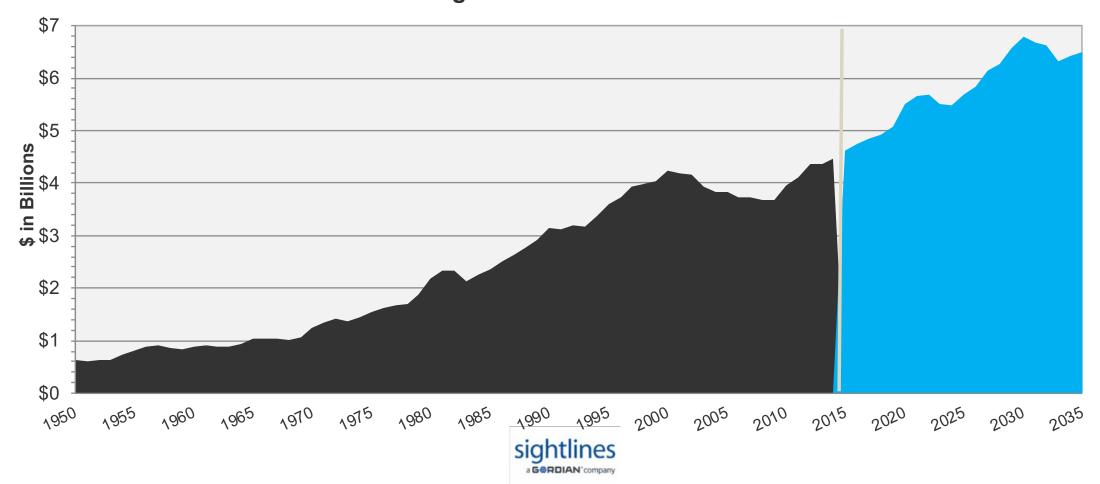




Growing Challenge

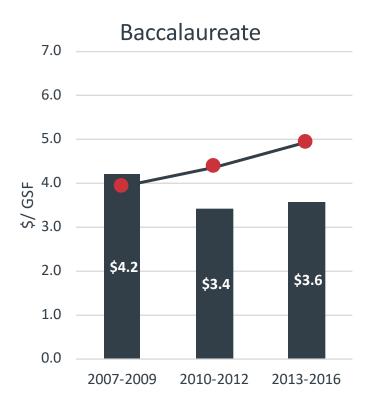


Total Sightlines Database Need 1950-2035

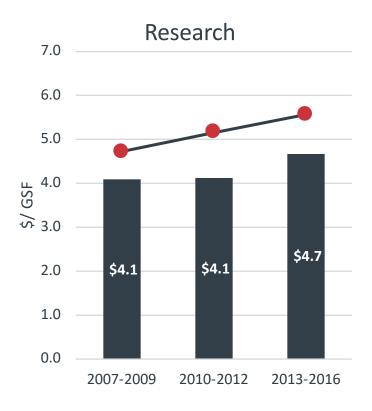


Growing Challenge









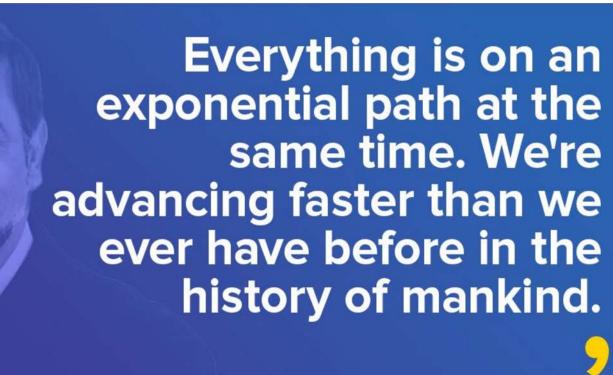


Sightlines Annual Building
Renewal Investment Target

Actual Institutional
Spending









Vivek Wadhwa @ MTD17

Distinguished Fellow, Carnegie Mellon University's College of Engineering, Author, and Entrepreneur

What the Hell Happened in 2007?













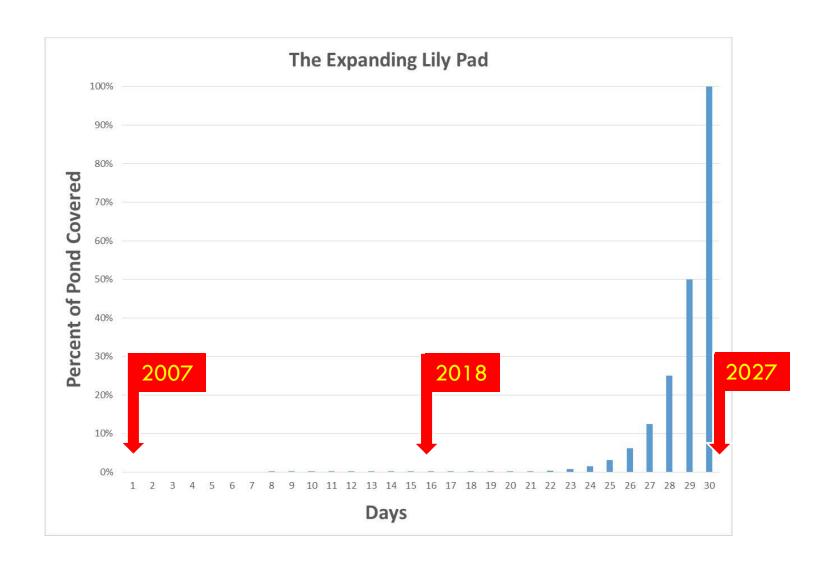




Q Palantir

What the Hell Happened in 2007?









What is Big Data?



Merriam-Webster's Collegiate Dictionary added Big Data in 2014....

An accumulation of data that is too large and complex for processing by traditional database management tools.

What is Big Data?

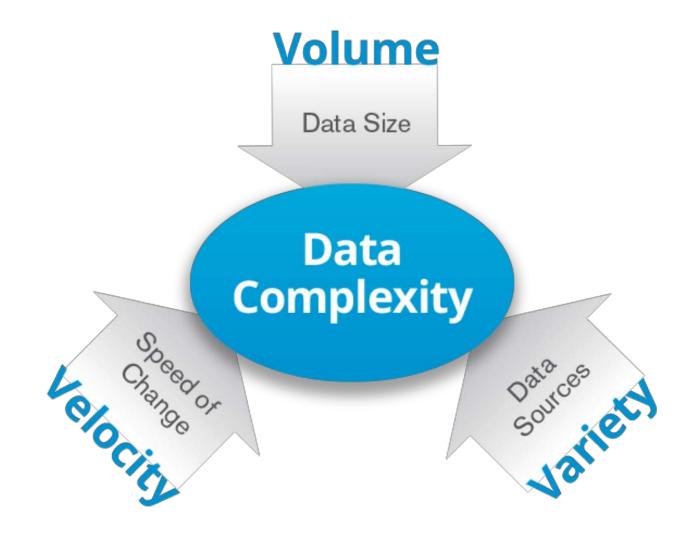


Industry Definition:

High volume, high variety and high velocity of information assets that demand cost effective and innovative forms of information processing for enhanced insight and decision making.

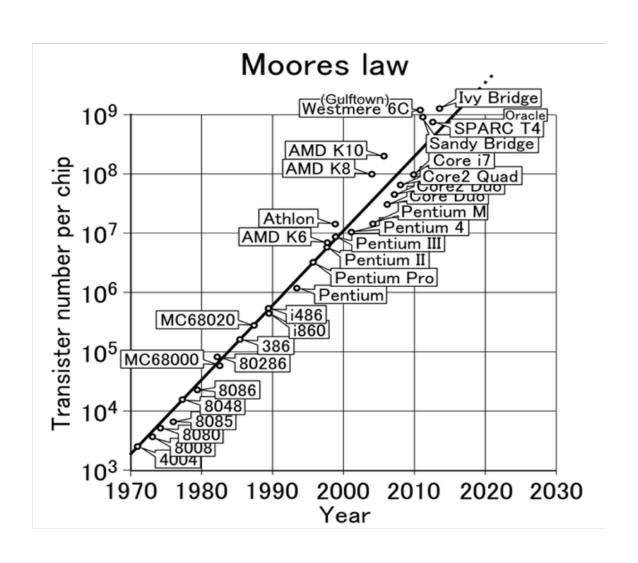
What is Big Data?





Velocity





Volume



Humanity passed the 1 Zettabyte mark in 2010.

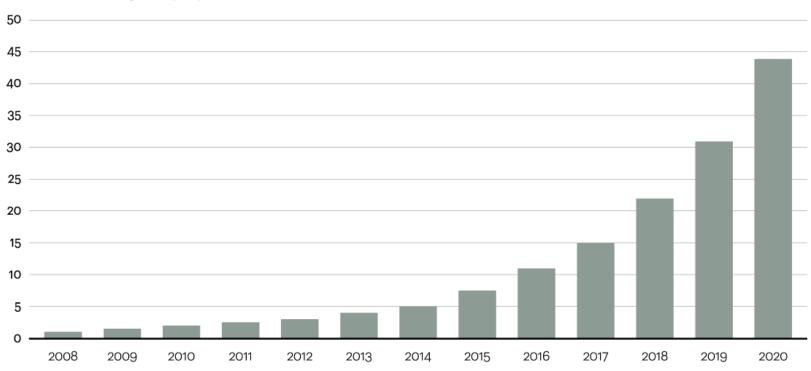


Volume



Data is growing at a 40 percent compound annual rate, reaching nearly 45 ZB by 2020

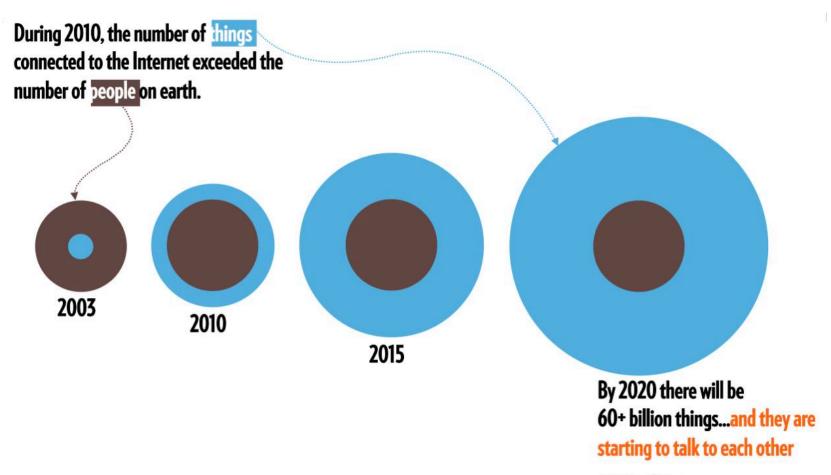
Data in zettabytes (ZB)



Source: Oracle, 2012

Variety





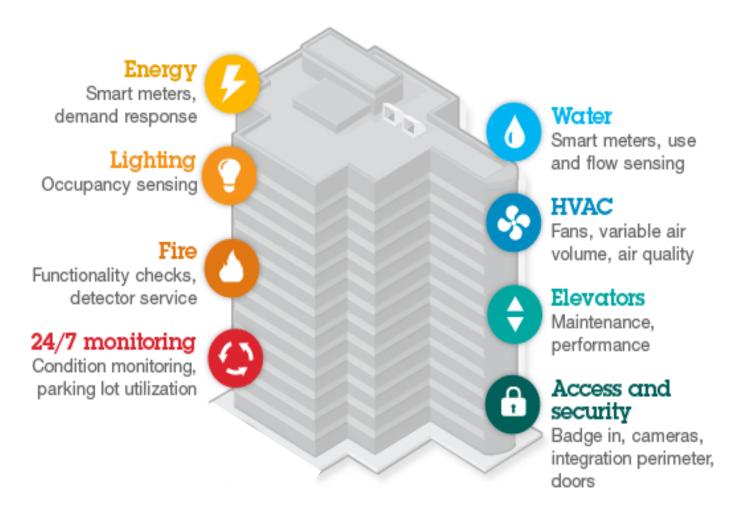
source : cisco



The ability to to install sensors everywhere is helping to make possible the "industrial Internet" by enabling every "thing" to carry a sensor that broadcasts how it is feeling at any moment, thus allowing its performance to be immediately adjusted or predicted in response.

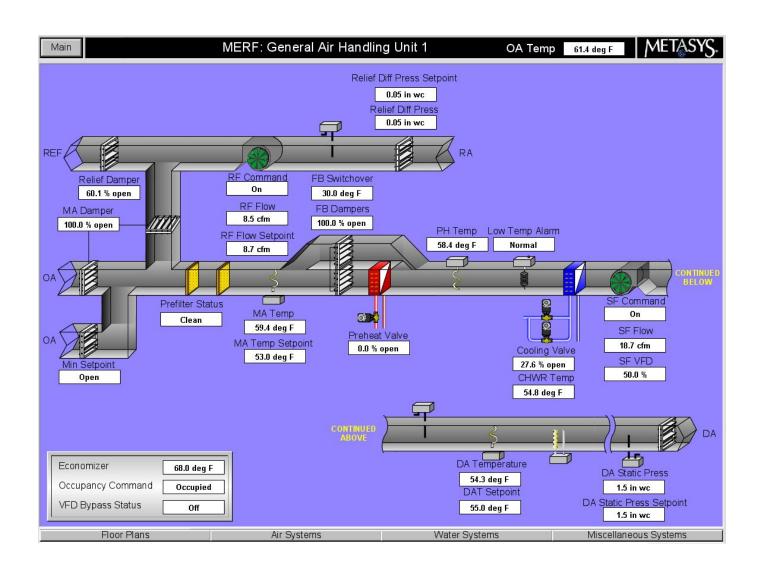
Thank You for Being Late
An Optimist's Guide to Thriving in the Age of Accelerations
Thomas L. Friedman





Credit: IBM







Air Handler Performance

- Fan Runtime
- Fan Power
- VFD Control
- Static Pressure
- Heating Control
- Cooling Control
- Ventilation Air Control
- Economizer Control

- CO2 Control
- Outside Air Temperature
- Return Air Temperature
- Make-up Air Temperature
- Supply Air Temperatures
- Freeze Stat Alarms
- Smoke/Fire Alarm
- Pressure Drop Alarm

Fault Detection



- CHW valve leaking by
- Steam valve leaking by
- Heat rec. running when it shouldn't
- Heat Recovery leaking by
- Simultaneous heating and cooling
- Dirty filters
- Not maintaining static
- CHWS temp too high
- DAT off set point
- Humidification when it shouldn't

- Not meeting humidity set point
- Humidity high limit
- CO2 sensor out of calibration
- Any current senses zero for a fan
- Multiple units running out of sync
- Air flow thru unit that is off
- Ave valve position versus OAT
- Economizer Optimization
- CW valve staging incorrectly
- Ave CHW delta T versus OAT

Fault Detection

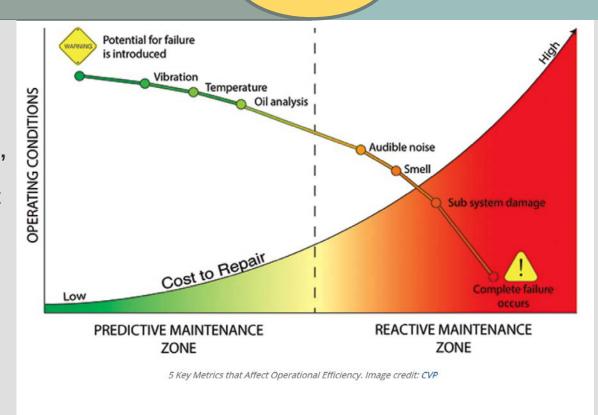


INVESTING

VS

SPENDING

- Better Infrastructure Investments
- Modernization
- Picking up on "Weak Signals"
- Lower Business Continuity Risk
- Lower Financial Risk



- High Productivity Losses
- High Repair Costs
- Wasted Energy Investments

Auto Industry as a Model









Conditioned-Based Maintenance

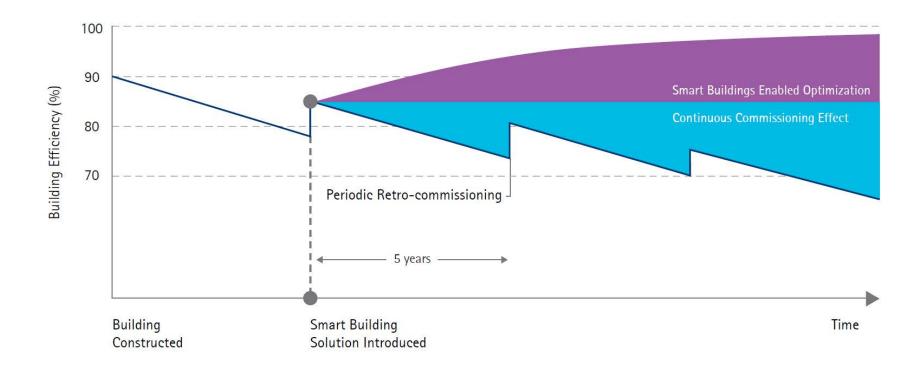


"Preventative maintenance was: change the oil every six thousand miles, whether you drive it hard or not. The new approach is "predictive maintenance" and "prescriptive maintenance" We can now predict nearly the exact moment when a tire, engine, car or truck battery, turbine fan or widget needs to be changed."

Thank You for Being Late
An Optimist's Guide to Thriving in the Age of Accelerations
Thomas L. Friedman

Continuous Commissioning





Fault Detection & Diagnostics



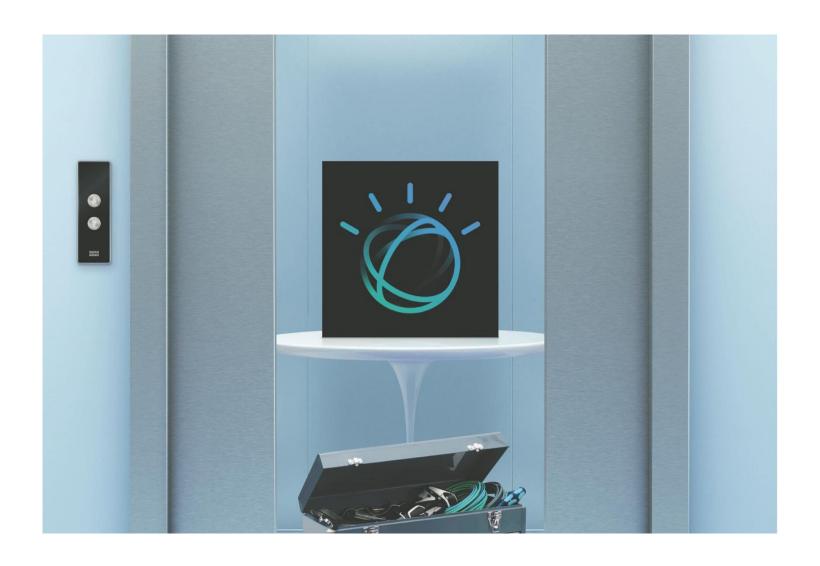
Fault Detection & Diagnostics (FDD) is a continuous commissioning tool used to *proactively discover* building system problems and identify optimization opportunities before they lead to alarms, excessive waste of resources, occupant discomfort or system failure.





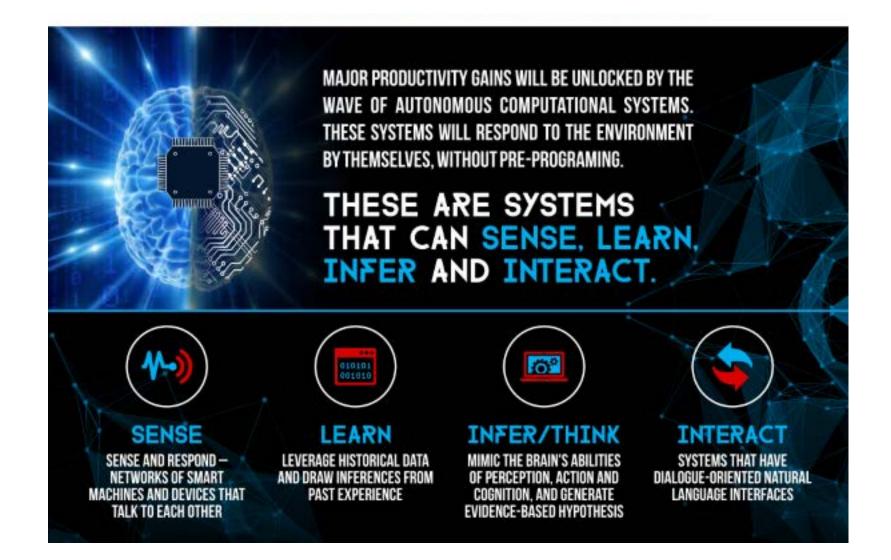
Cognitive Computing





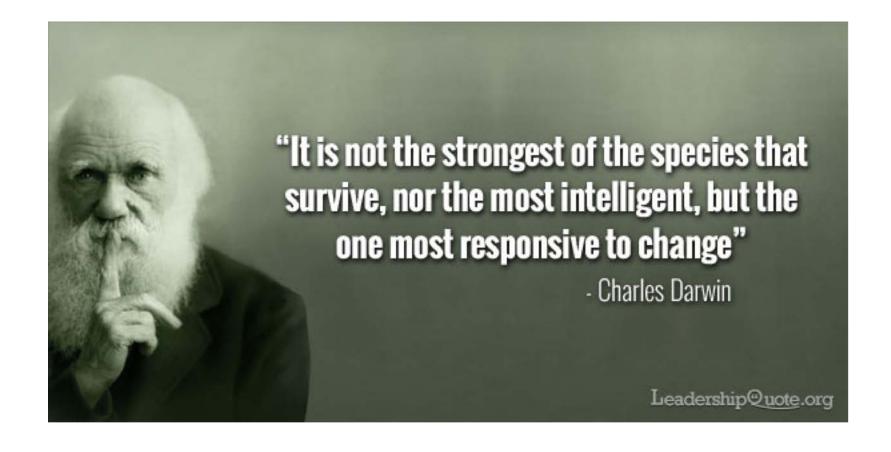
Cognitive Computing











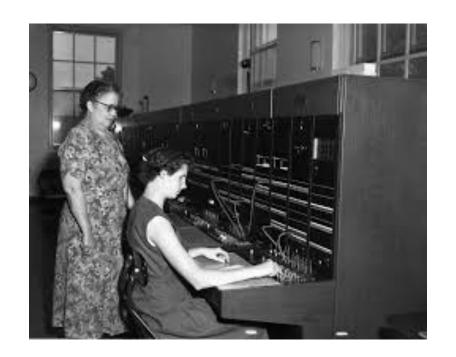




Succession Planning



Succession planning focuses on identifying and preparing select individuals for specific roles.



Succession Preparation



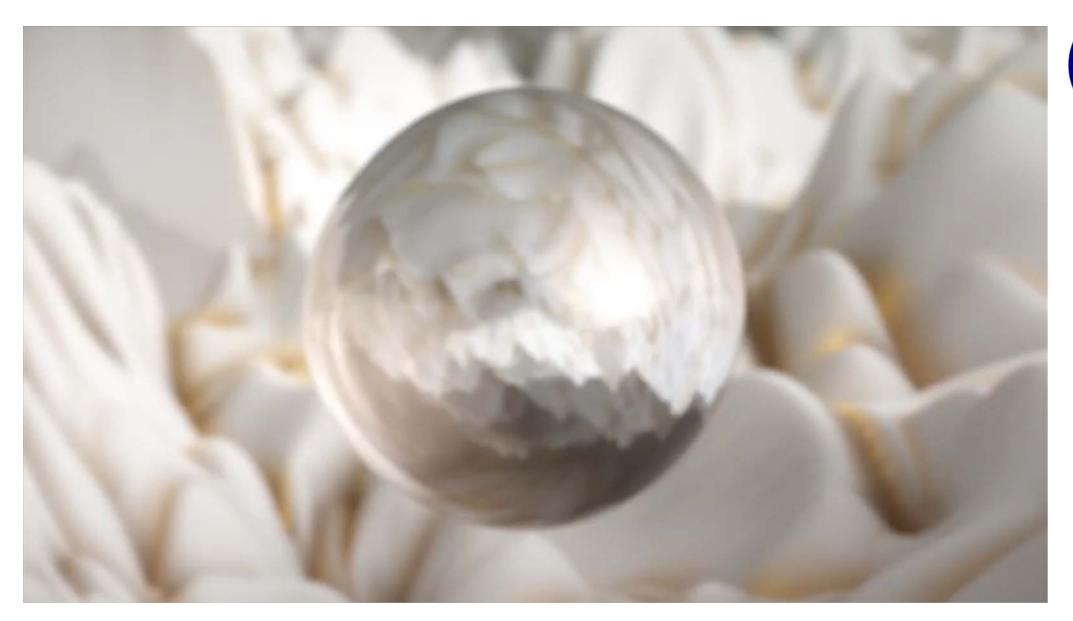
Succession preparation focuses on developing adaptable talent and leadership for an evolving organization.





OUR JOB IS NOT TO PREPARE STUDENTS FOR SOMETHING.
OUR JOB IS TO HELP STUDENTS PREPARE THEMSELVES FOR ANYTHING.

- A.J. JULIANI -





The Melbourne Model





"The Melbourne Model is a distinctive curriculum that gives students a wider understanding of the world beyond their degree. With a breadth and depth of knowledge, our talent is prepared for everything your workplace will become."

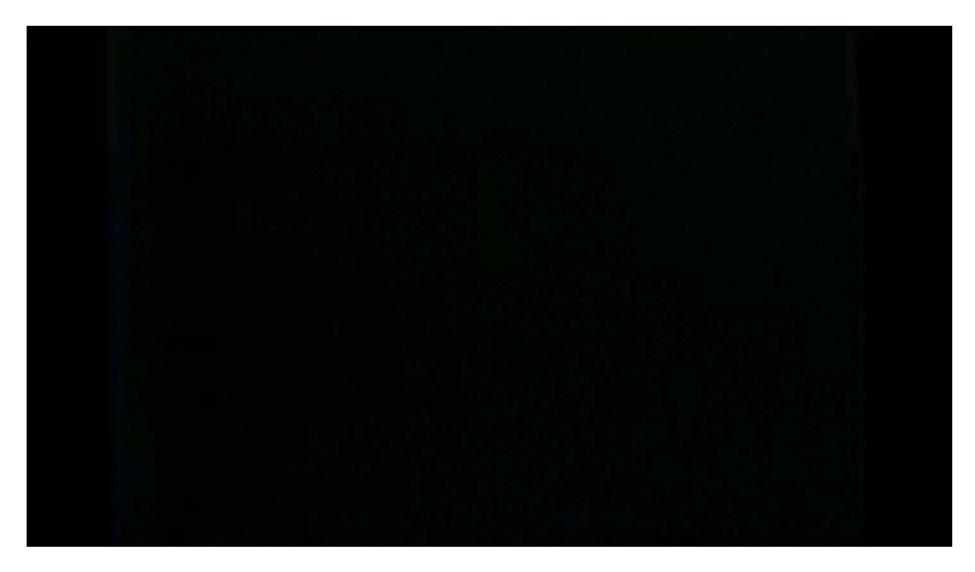
Rising Demand for Soft Skills



myappa of the future interpersonalskills eyecontact accountability humility negotiate fortitude a senseleadership friendly grit coaching senseleadership friendly grit coaching programming dependability empathyproblemsolving inclusivitydesiretolearn conceptualizing personaldrive customer innovativecreativeadaptable

Rising Demand for Soft Skills





Rising Demand for Soft Skills





What Millennials Want



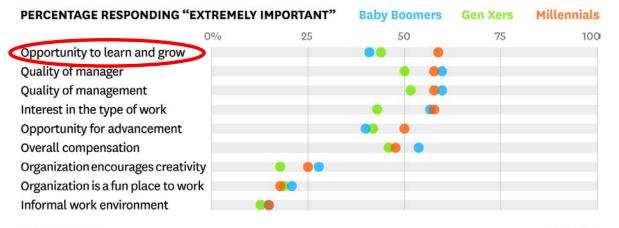
From LinkedIn...

Finally, the three factors you should highlight to get a millennial to accept a job are



From the Harvard Business Review and Gallop...

What Different Generations Look for When Applying for a Job According to a survey of 1,700 U.S. workers.



From ManpowerGroup...



SOURCE GALLUP © HBR.ORG

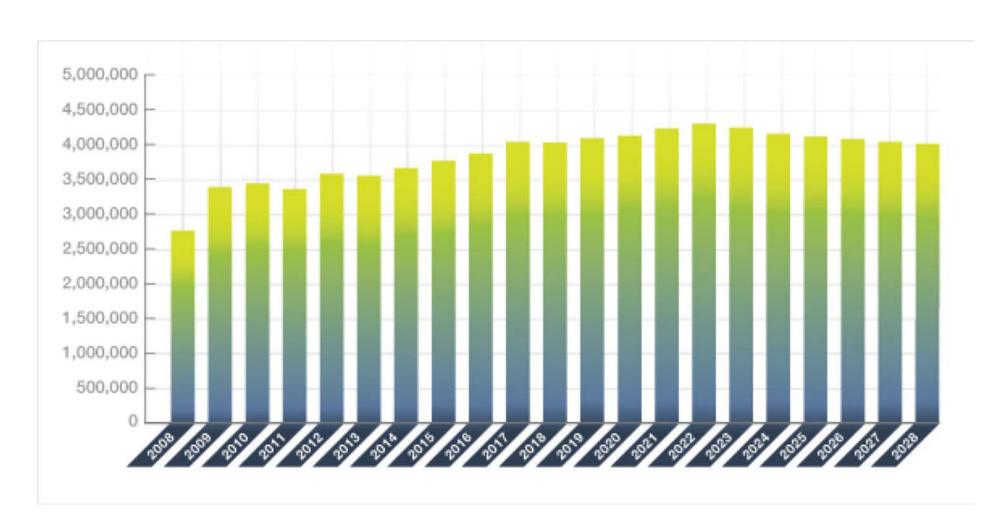
The Gen X Senior Leader





Baby Boomer Retirements





Institutional Knowledge



"The intuition about how a machine is operating on a factory floor used to come from working there thirty years and being able to detect a slightly different sound signature emanating from the machine, telling us something is not exactly right. That is a weak signal. Now with sensors, a new employee can detect a weak signal on the first day of work — without any intuition."

Thank You for Being Late
An Optimist's Guide to Thriving in the Age of Accelerations
Thomas L. Friedman

Skills Gap



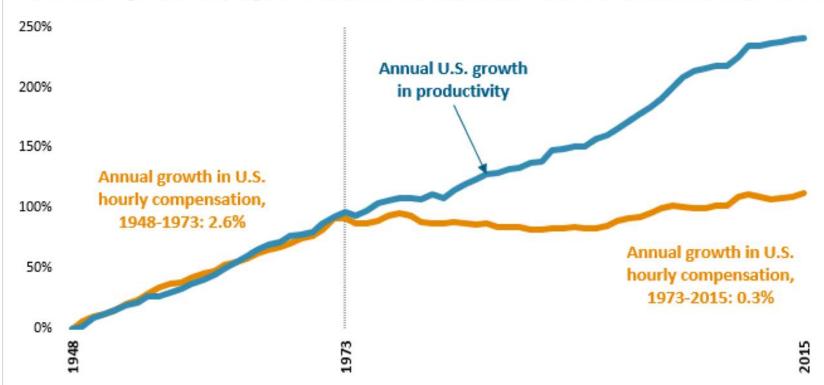


Wage Stagnation



A Large Gap Has Opened Between Wage and Productivity Growth Since 1973

Cumulative Change in U.S. Hourly Wages for Private-Sector Production/Non-Supervisory Workers and Net Productivity, 1948-2015



Source: Economic Policy Institute analysis of unpublished Total Economy Productivity data from Bureau of Labor Statistics'

Labor Productivity and Costs program, wage data from the Bureau of Labor Statistics' Current Employment Statistics, Bureau of

Labor Statistics' Employment Cost Trends data, and the Bureau of Economic Analysis' National Income and Product Accounts

Note: Wages are the inflation-adjusted average hourly compensation of private-sector production/nonsupervisory workers.







"What would you say...you do here?" ~ Bob & Bob





Communicating Value







Speed of Now





Speed of Now



HEALTH NEUROSCIENCE

You Now Have a Shorter Attention Span Than a Goldfish

Kevin McSpadden @KevinMcspadden May 14, 2015







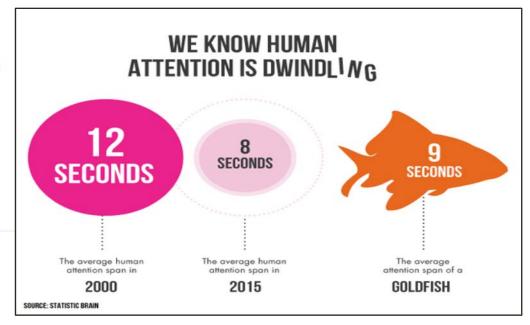




No longer can we boast about 12 seconds of coherent thought

The average attention span for the notoriously ill-focused goldfish is nine seconds, but according to a new study from Microsoft Corp., people now generally lose concentration after eight seconds, highlighting the affects of an increasingly digitalized lifestyle on the brain.

Researchers in Canada surveyed 2,000 participants and studied the brain activity of 112 others using electroencephalograms (EEGs). Microsoft found that since the year 2000 (or about when the mobile revolution began) the average attention span dropped from 12 seconds to eight seconds.



Communication Media



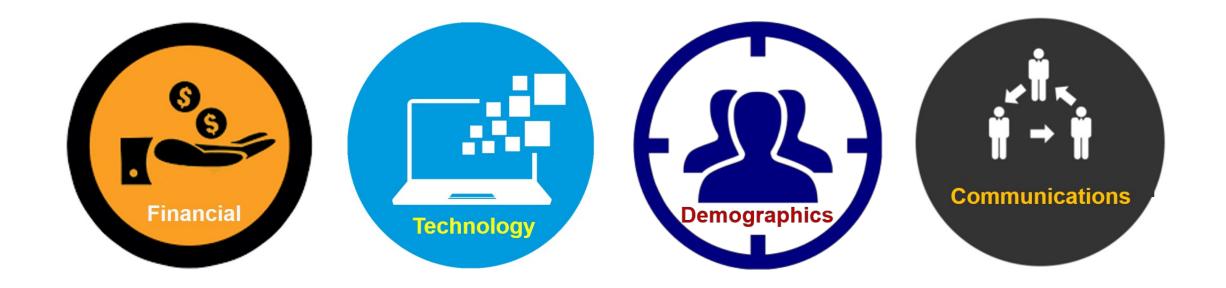


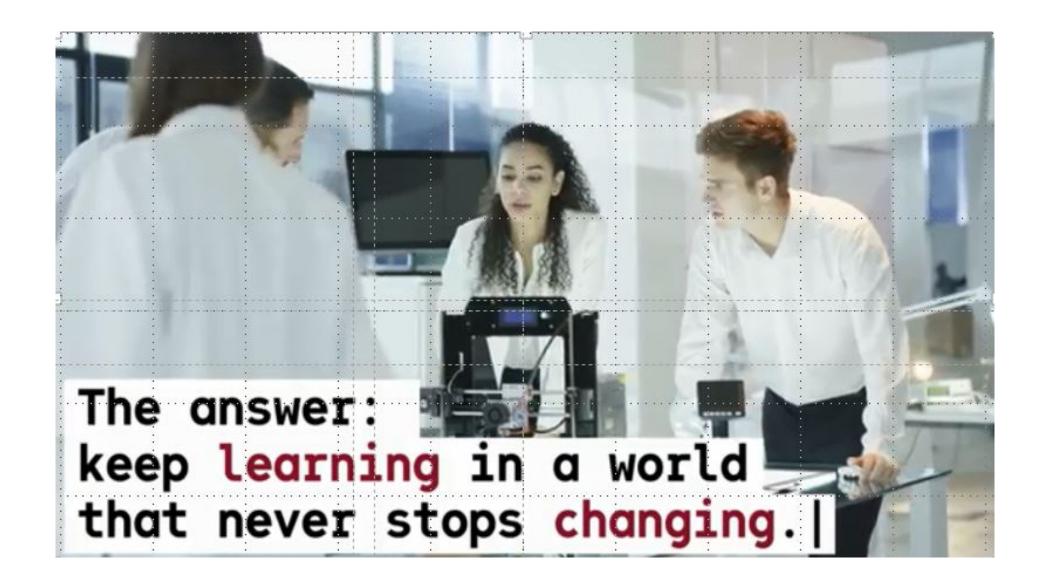
#MeToo

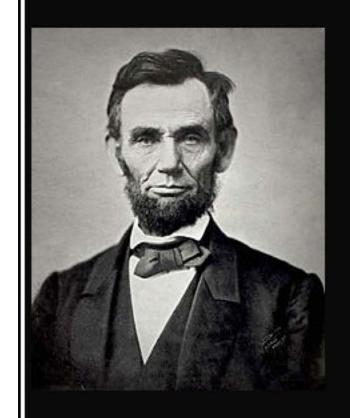




Leanln.org pushes female mentorship as it reveals a survey showing growing backlash against #MeToo







I do not think much of a man who is not wiser today than he was yesterday.

(Abraham Lincoln)



Unless you're continually improving your skills, you're quickly becoming irrelevant.

— Stephen Covey —

In this age of acceleration, you will only be able to be a lifelong employee if you are a lifelong learner. Tom Friedman



Thank You

Lander Medlin, APPA



