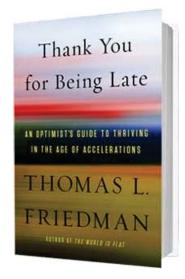
Transformational Changes in Higher Education & Facilities Management

Senior Facilities Officer Summit Washington, DC August 2, 2018

Lander Medlin, APPA
Don Guckert, University of Iowa

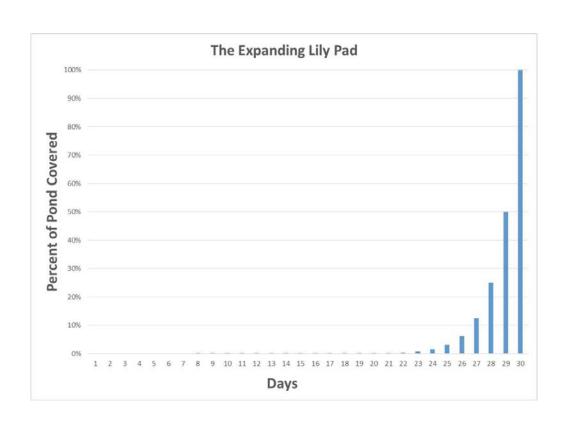






Thank You for Being Late
An Optimist's Guide to Thriving in the Age of Accelerations
Thomas L. Friedman







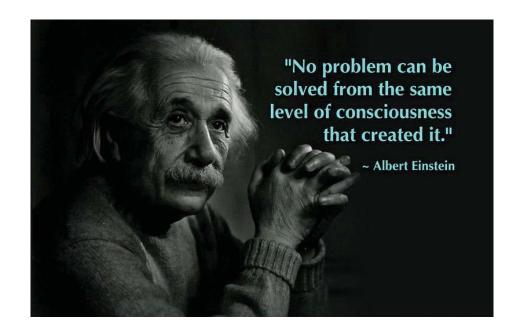








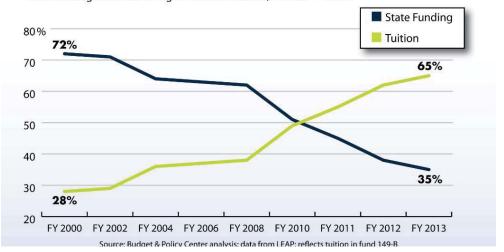




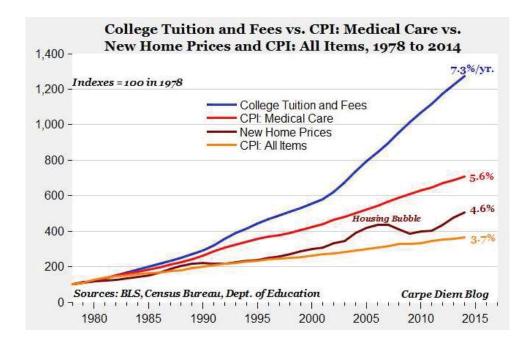


Student Tuition Accounts for Over Half of Higher Education Costs at 4-year Colleges

State funding as a share of higher education costs, FY2000 - FY2013











Transparency



THE UNIVIOR OF LOWA	THE UNIVERSITY OF IOWA			Collegiate Economic Analysis GEF FY 2016 DRAFT 03.07.17									OFFICE OF THE PROVOST Information and Resource Management (IRM)				
Version 2: Appropriations Allocated	CLAS	1008	DENT	EDUC	ENGR	LAW	COOM	NURS	PHAR	PUBH	COLLEGE	GRADCOLL	UNIVOOLL	CENTRAL SUPPORT	Linky Total		
Revenue																	
Tution	237,316,085	52,388,034	14,031,646	17,876,933	24,330,062	10,596,351	33,798,028	11,802,524	13,552,848	3,351,667	419,140,077	2,744,035	11,750,735		433,643,847		
BFA: Gollege Direct	(7,305,912)	(1,455,836)	(2.284,348)	(1.542.414)	(1,143,345)	(4.051,973)	(5,007,095)	(347,464)	(2,034,958)	(457,761)	(25,731,126)	(644,093)	(46,240)		(26,421,459)		
SFA: Central	(52,714,343)	(9,400,764)	(19.625)	(2,565,858)	(5,841,338)	(83,277)	(1,001,198)	(1,012,483)	(300.531)	(305,493)	(74,044,B25)	(1,109,319)	(2.072.644)		(77,886,788)		
Tobic SEA	(00,020,265)	(10,856,600)	(2,303,073)	(4,108,272)	(6,984,683)	(4,145,250)	(0,008,293)	(2,159,947)		(763,189)	(98,776,951)	(1,813,412)	(2,718,884)		(104,308,247)		
Net Tutton	177,297,830	41,531,434	12,027,672	13,770,661	17.346,279	8,451,101	27,899,735	9,442,577	11,217,358	2,568,478	319,373,126	930,623	9.031,851		329,335,600		
Indirect Cost Recoveries (ICR)	7,724,308	101,730	600,378	209,239	1,364,612	14,394	24,441,202	529,911	710,018	0,454,533	42,213,626	66,626	12,707	1,377,617	43,672,576		
Interest & Other	516,922	121,087	35,067	40,149	50,574	18,800	60,760	27,530	32,795	7,547	931,150	2,713	26,332	. 0	960,196		
Appropriations	102,926,832	25,732,281	14,245,194	10,995,682	13,656,424	8,686,373	25,279,299	11,110,661	7,333,281	A,297,529	224,271,556	4,430,517	7,220,932		230,923,005		
Total Net Revenue & Recoveries	288,465,892	67,456,532	26,968,312	25,015,731	32,417,889	15,170,677	77,500,396	21,118,679	19,296,663	13,348,087	586,789,458	5,432,479	11,291,823	1,377,417	604,691,377		
Expenditures															8		
Direct Exp (Non-SFA)	135,632,365	30.097.854	23,830,431	17,689,234	21,314,147	13,190,566	68,601,044	13,033,882	9,167,402	12,569,119	342,126,064	9,223,630	3,463,460	43,326,309	388,139,463		
Advosted:																	
Student Headonint (HC):												l					
Academic Advising	1,969,735	376.302	0	53.058	312.272	56	05,610	106.835	0	56	2.873,129	l			2,873,129		
Admissions	5.195.027	\$92,468	0	139.937	823.595	148	147.208	279.132	0	148	7.577.563	l			7.577.663		
Career Conter	888,270	163,900	0	23,110	138,066	25	24,320	49,115	0	25	1,251,900	l			1,251,900		
University College (Net Exp)	(5,368,900)	(1,025,303)	0	(144.567)	(850.642)	(180)	(152,078)	(288.367)	0	(153)	(7.828,363)	l.	7,828,363		0		
Graduate College (Net Exp)	1,377,129	989,970	72,706	425.807	211,676	8.283	227.015	188.054	47,550	242,967	3,791,181	(3,791,151)	1,000,000				
Div Continuing Ed & Summer Admin	3,324,179	834,474	19,947	195.184	525,176	2.357	145,770	200.902	13,045	06,741	5,337,778	000000000000000000000000000000000000000			5.337.775		
Division of Student Life	3,693,376	937,111	104.337	215.611	577.183	79.455	616.217	230,668	105,354	73,360	8,572,676				8,572,876		
General Classroom Building Costs	2,366,433	594,950	67,583	139.660	373,866	51.466	399 149	149,426	68,242	47.512	4,257,386				4.257.386		
Premium Cassinatin Building Costs Premium Prame	1,266,623	317,962	39,174	74,752	200,100	27,647	213.642	70,980	39.520	25.431							
Registrars Office				93.428							2,276,740				2,278,746		
SFA Operations	1,583,089	307,399	45,211		250,103	34,429	267,017	99,961	45,652	31,784	2,848,043	l			2.848,043		
	1,233,209	309,574	35,219	72,780	194,630	26,820	208,007	77,870	35,563	24,780	2,218,632				2,218,632		
Research 500/010 Exp.	92027225	20.000	7/2009207	88,0000	50000000	2000	0.000000			17412222					17503222222		
VPR incl. Div of Sponsored Pryme.	1,677,450	31,163	166,154	227,271	1,206,189	9.811	6,575,436	125,671	151,335	1,530,034	11,703,508				11,703,508		
Grant Accounting Business Season & Resiscement Valve	268,681	5,367	28,514	39,140	207,724	1,690	1,132,393	21,643	26,062	264,013	2,015,527				2,015,527		
		422510				1000		21244		1000000	44.00						
Building O&M/Usities	14,406,411	990,648	3.213,727	1,605,620	2,696,882	430,263	18,668,000	645,930	3,034,741	1,847,945	47,441,167			22,059,715 8,088,341	89,500,882 23,058,632		
 Capital/Building Renewal	5,778,252	327,332	870,437	439,585	999,597	184,604	5,306,713	204,833	621,271	537,667	14,970,291						
GEF Insurance Premium	499,249	26,583	54,446	35,699	81,177	14,992	430.956	16,634	42,332	43,664	1,215,732			658,849	1,672,581		
GEF Facothy, Staff, GA, Bloveskly HC:	E-2000 Section 1		178700000000000000000000000000000000000		11114000000	100000000000000000000000000000000000000		1000000000			78.7900000000000000000000000000000000000						
Human Resources	1,429,278	225,392	225,846	195,491	218,136	188,704	931,501	106,388	260,312	144,668	3,904,688	l			3,964,686		
GEF Faculty & Staff HC OR Total Stude												l					
Information Technology Svos	9,120,073	1,945,055	1,133,434	941,659	1,366,774	487,249	4,750,890	770,731	1,204,747	620,098	22,340,945	l			22,340,945		
GEF Pacotty & Staff HC PLUS Total Sty										2445037731					E-127-1-1-100		
University & Law Libraries	19,871,902	4,907,906	771,771	1,267,223	3,122,165	499,777	4,103,457	1,300,361	793,396	501,219	37,139,197				37,139,197		
Central Support (Net flixp)	38,927,937	9,614,312	1,511,856	2,482,419	6,116,145	979,035	8,038,442	2,547,374	1,654,218	981,859	72,753,597			(72,753,597)			
Allocated Exp	109,426,561	22,941,731	8,157,462	8.424,075	18,768,816	3,006,558	52,089,876	6,921,181	7,940,346	6,986,788	244,663,394	(3,791,151)	7,828,363	(41,948,692)	208,751,914		
warecassa rich	105/450/001	88,041,101	6,101,100	0,464,010	10,7 60,010	3,000,000	04,000,076	6,921,101	1/040/040	6,000,100	244,000,004	10'101'101	1,640,365	in the sections of	*60'101'914		
Total Expenditures	245,059,946	53,039,585	31,987,893	26,093,309	40,062,963	111000111000	117,690,920			19,575,907	186,789,458	The second	11,291,823	1,377,617	604,691,377		

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

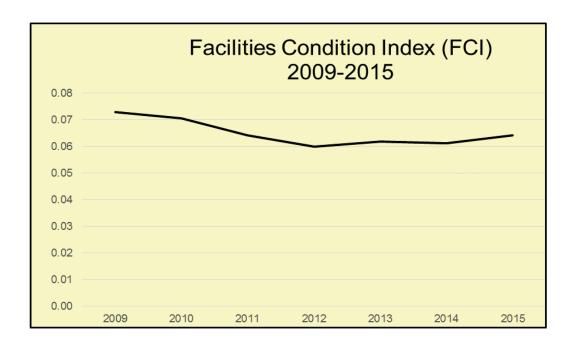
- Building Age
- Building Condition
- Building Location
- Institutional focus
- · Academic requirements
- Student needs
- Historical Significance
- Safety/Code requirements
- Recruitment/Retention
- Transitional Space
- Adaptive Reuse

Institutional Leaders for buy in and communication

- Institutional Priorities
- · Building Needs
- Future Campus Direction

Facilities Condition Equilibrium

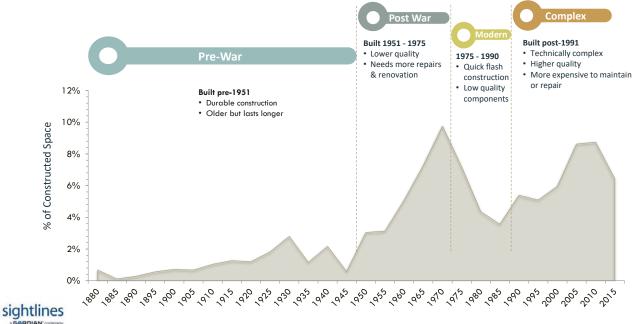




Growing Challenging



13



■ Sightlines Database- Construction Age

Growing Challenge



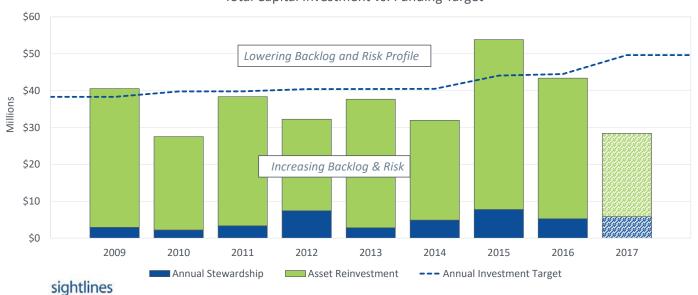
Total Sightlines Database Need 1950-2035



Reinvestment Rate

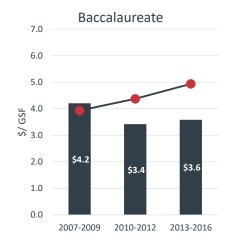


Total Capital Investment vs. Funding Target

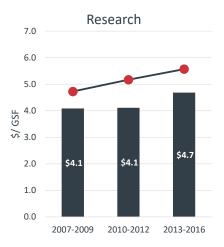


Moving Target









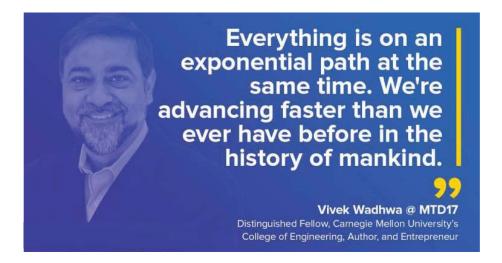


Sightlines Annual Building
Renewal Investment Target

Actual Institutional Spending











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?

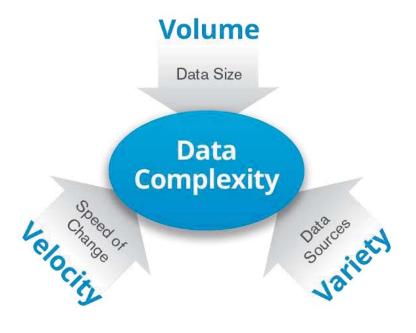


Industry Definition:

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.

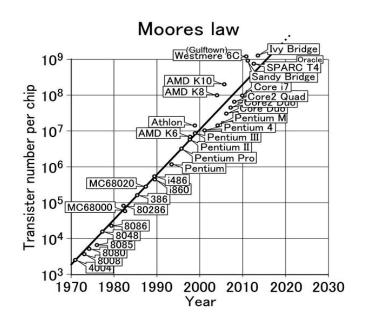
What is Big Data?





Velocity

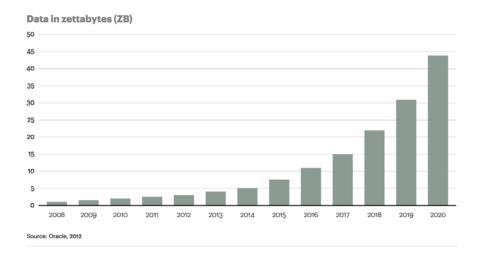




Volume

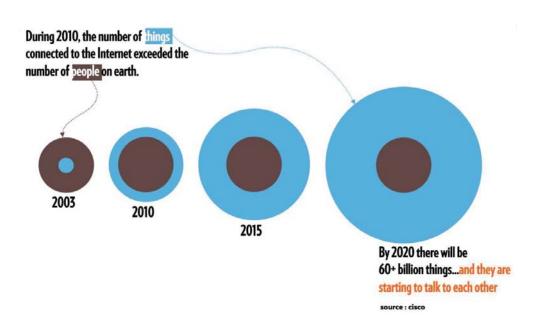


Data is growing at a 40 percent compound annual rate, reaching nearly 45 ZB by 2020



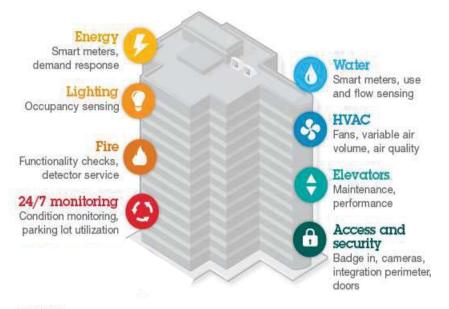
Variety





Internet of Things

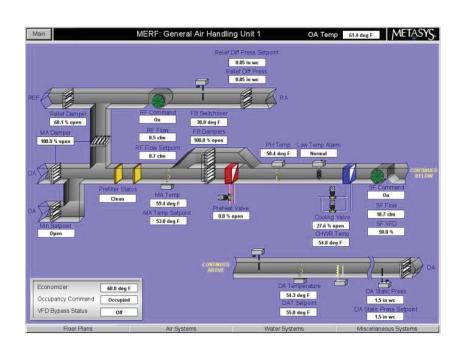




Credit: IBM

Internet of Things





Internet of Things



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

Auto Industry as a Model









Conditioned-Based Maintenance

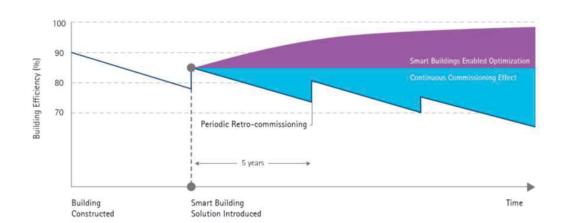


"Preventative maintenance was: change the oil every six thousand miles, whether you drive it hard or not. The new approach is "predictive maintenance" and "prescriptive maintenance" We can now predict nearly the exact moment when a tire, engine, car or truck battery, turbine fan or widget needs to be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

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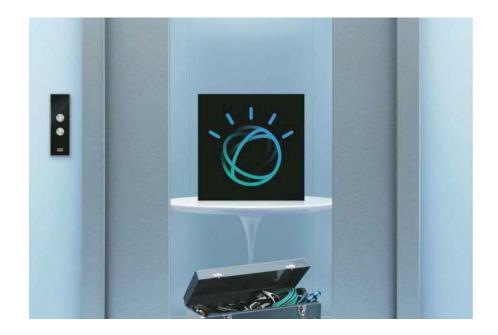
Continuous Commissioning





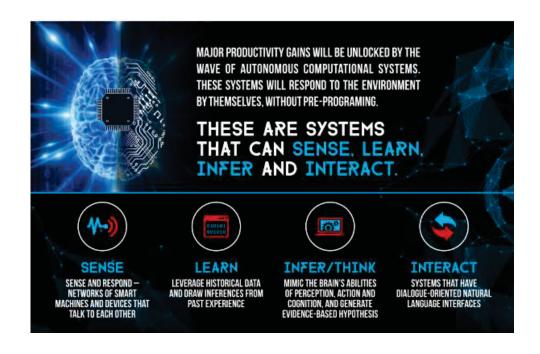
Cognitive Computing





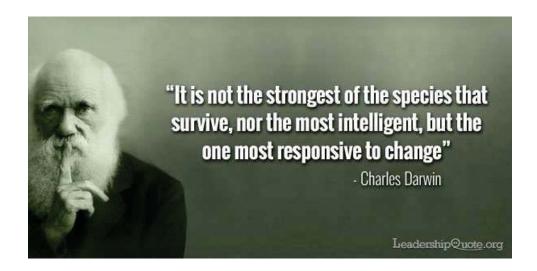
Cognitive Computing















Succession Planning



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



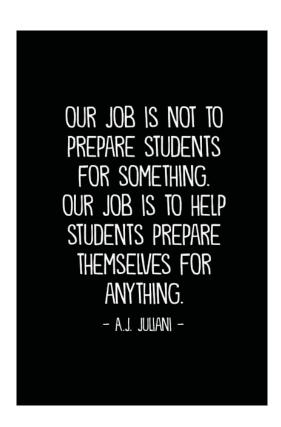
Succession Preparation



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

organization.







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





Rising Demand for Soft Skills





What Millennials Want



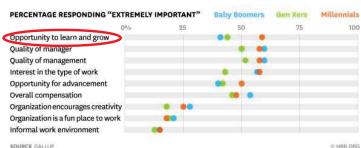
From LinkedIn...

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...



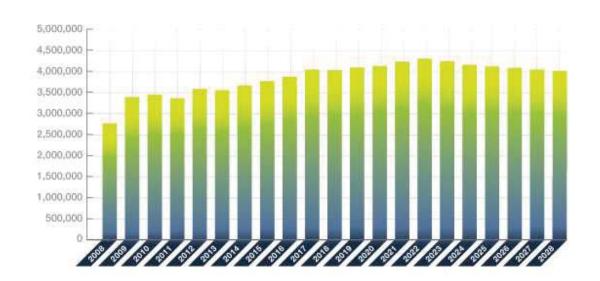
The Gen X Senior Leader





Baby Boomer Retirements





Weak Signals

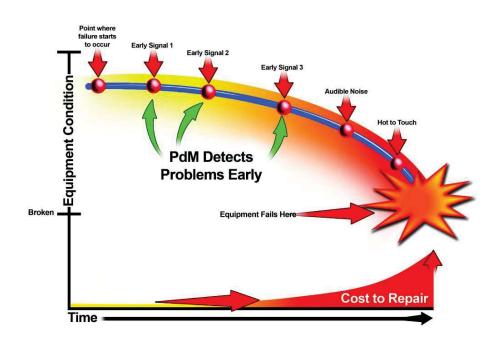


"The intuition about how a machine is operating on a factory floor used to come from working there thirty years and being able to detect a slightly different sound signature emanating from the machine, telling us something is not exactly right. That is a weak signal. Now with sensors, a new employee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

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Thomas L. Friedman

Weak Signals





Weak Signals



"Experienced workers knew how to process weak data. But now with Big Data, with a much finer grain of fidelity we can make finding a needle in the haystack the norm - not the exception. And we can augment the human worker with machines so they work as colleagues and enable them to process weak signals together and overnight become like a thirty year veteran."

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

Skills Gap











Communicating Value







Speed of Now





Speed of Now



HEALTH NEUROSCIENCE

You Now Have a Shorter Attention Span Than a Goldfish

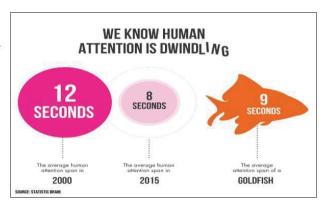
Kevin McSpadden @KevinMcspadden May 14, 2015

∞ f y p in

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

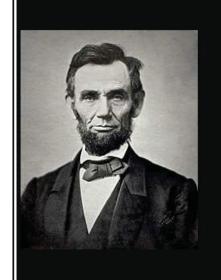






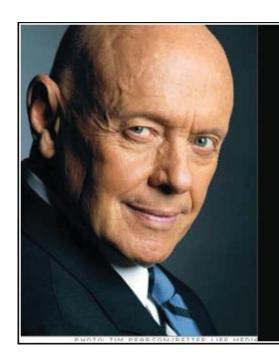






I do not think much of a man who is not wiser today than he was yesterday.

(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