



SCIENCE • PSYCHOLOGY • SKILLS

PSYCHOLOGY OF POWERPOINT

THE SCIENCE OF EFFECTIVE SLIDE DESIGN

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www.gravitylearning.com

WHAT DO PEOPLE DO
WITH POWERPOINT

YOU WISH THEY WOULDN'T?



WHY DO WE DO THINGS WE KNOW ARE BAD FOR US?

IT'S THE ONLY WAY WE KNOW TO GET WHAT WE NEED

OR... IT'S EXPECTED OF US

WHAT WE WANT IS AN IMPACTFUL SLIDE DECK...

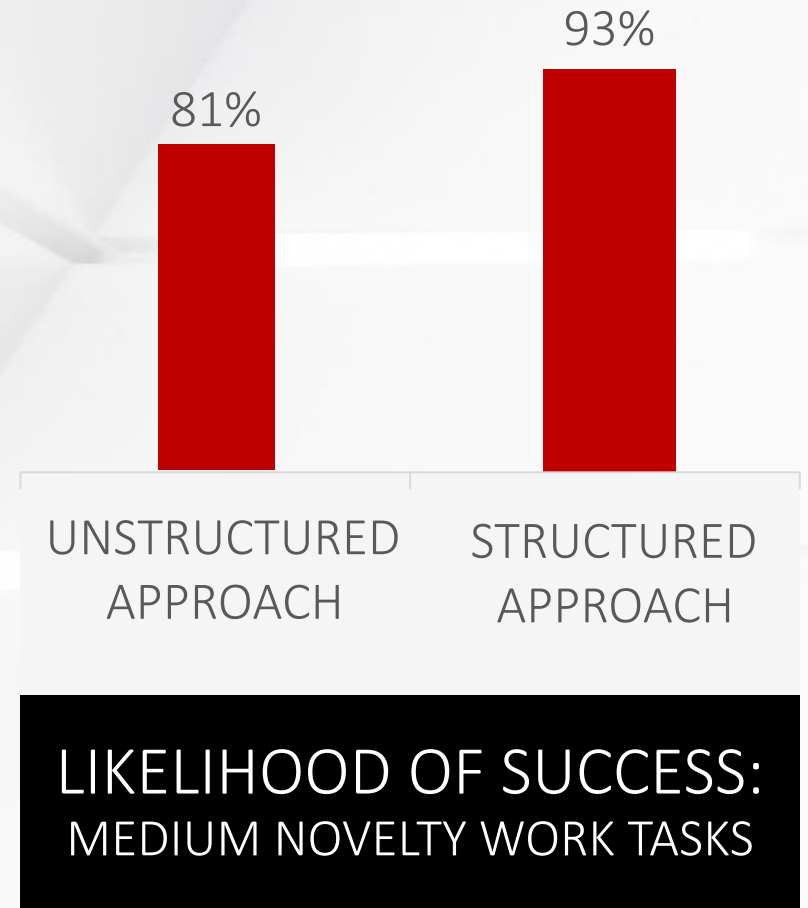
HOW DO WE GET IT WITHOUT HURTING OURSELVES?

THE PSYCHOLOGY OF STRUCTURE

WE FORGET WHERE WE WERE GOING, LOSE
FOCUS, AND FORGET GOALS

WE STRONGLY OVERESTIMATE OUR ABILITY TO
MULTI-TASK AND FOCUS

HUMANS ARE ALL OVER THE PLACE



Source:
Journal of Psychological Science (2004)

THE SCIENCE OF OUTLINING PPT FIRST

BENEFITS DON'T SHOW UP UNTIL THE 3RD OUTLINE

- PERCEIVED STRUCTURE IMPROVES
- PERCEPTION OF EFFORT GOES UP FOR AUDIENCE BUT DOWN FOR AUTHOR
- 34% INCREASE IN BUILD TIME

Source:
Journal of Computers in Human Behavior (2016)
Journal of Computers & Education (2014)



COMMON PRESENTATION STRUCTURES

PRESENTING REPORTS

- S** SITUATION
- T** TASK
- A** ACTIONS
- R** RESULTS

PRESENTING IDEAS

- 1** PROVE A PROBLEM EXISTS
- 2** PRESENT A SOLUTION
- 3** EXPLAIN WHY THAT WORKS
- 4** CLARIFY COSTS AND BENEFITS

END WITH "I RECOMMEND"

FONT SIZE MATTERS

RESEARCH-BASED FONT
SIZE CHOICES



- BELOW 20 PT. IS ILLEGIBLE ON MANY SCREENS
- “ABSORPTION READING” STARTS AT 32PT.
- SIZE SHOWS IMPORTANCE
- BOLD AND ITALIC ARE FOR *INFLECTION*



HOW MUCH IS TOO MUCH?

THE MORE THAT SEEMS IMPORTANT...

THE LESS COMPREHENSION AND RECALL YOU GET

Source:
Journal of Experimental Psychology (2008)



MORE TEXT HURTS DELIVERY, TOO

MORE TEXT ON THE SCREEN IS DIRECTLY CORRELATED WITH

- LESS AUDIENCE INTERACTION
- LESS AUDIENCE ENGAGEMENT
- PRESENTATIONS JUDGED “TOO FAST OR RUSHED”

Source:
Public Library of Science Journal – PloS One (2017)

HOW TO

REDUCE COGNITIVE LOAD
INCREASE COMPREHENSION AND RECALL

REPLACE TEXT WITH NARRATION

MOVE “READ LATER” TEXT TO SPEAKER NOTES

Source:
Journal of RadioGraphics (2020)

AFTER

MULTI-TOUCH LEARNING

LEADS TO AN AVERAGE OF

180%

BETTER LEARNING RESULTS

Multi-Touch Learning Vs. Traditional

- A meta-analytic compared 32 different studies comparing multi-touch vs. traditional “one and done” learning
- Results were gauged by “learning transfer” (on the job usage)
- Multi-Touch learning lead to an *average* of 180% better learning transfer
- For example, 1-on-1 peer meetings lead to a 33% boost in learning transfer, alone.

2.0B

Songs purchased and downloaded

\$999

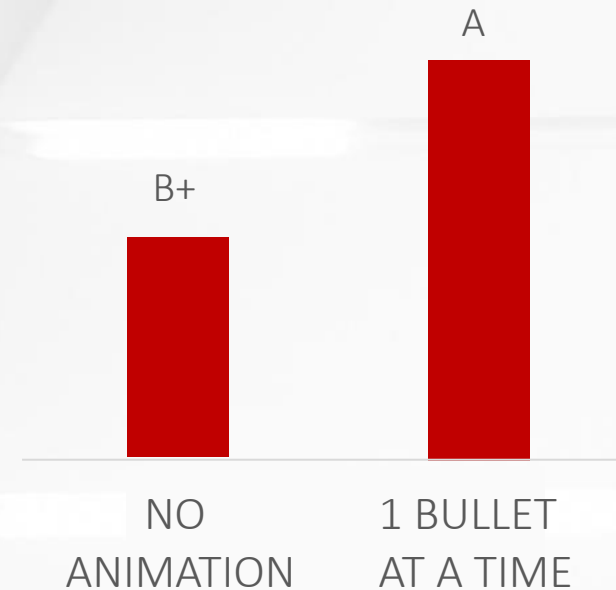


HOW MUCH IS TOO MUCH?

4 GUIDELINES

- 1 TOPIC PER SLIDE
- 1 LINE PER BULLET
- 4 BULLETS PER SLIDE
- 1 BULLET AT A TIME

EFFECT OF SEGMENTING
DATA ON LEARNING



THE PSYCHOLOGY AND SKILLS OF

DISPLAYING DATA

ONLY SHOW THE DATA

YOU'RE TALKING ABOUT **RIGHT NOW**

Source:
Journal of Experimental Psychology (2008)
Journal of Communication in Education (2019)

									Reserved(Heavy,1 year):Oregon				
	Model	vcpu	Mem	SSD	Upfront	\$/Hr	Effective \$/Hr	\$/day	\$/Month (30 days)	\$/Year	\$/Year Diff from on-demand	cpu\$/hr	mem(GB)/\$hr
GP	m3.medium	1	3.75	1 x 4	\$222	\$0.018	\$0.044	\$1.05	\$31	\$378	(\$227)	23	86
	m3.large	2	7.5	1 x 32	\$443	\$0.037	\$0.088	\$2.12	\$64	\$763	(\$447)	23	85
	m3.xlarge	4	15	2 x 40	\$886	\$0.074	\$0.177	\$4.24	\$127	\$1,525	(\$894)	23	85
	m3.2xlarge	8	30	2 x 80	\$1,772	\$0.146	\$0.351	\$8.43	\$253	\$3,033			
Compute	c3.large	2	3.75	2 x 16	\$326	\$0.026	\$0.064	\$1.53	\$46	\$551			
	c3.xlarge	4	7.5	2 x 40	\$652	\$0.053	\$0.128	\$3.08	\$92	\$1,110			
	c3.2xlarge	8	15	2 x 80	\$1,304	\$0.104	\$0.255	\$6.12	\$184	\$2,203			
	c3.4xlarge	16	30	2 x 160	\$2,608	\$0.209	\$0.511	\$12.26	\$368	\$4,414			
	c3.8xlarge	32	60	2 x 320	\$5,216	\$0.417	\$1.021	\$24.50	\$735	\$8,819			
Memory	r3.large	2	15	1 x 32	\$541	\$0.033	\$0.096	\$2.29	\$69	\$826			
	r3.xlarge	4	30.5	1 x 80	\$1,082	\$0.066	\$0.191	\$4.59	\$138	\$1,652			
	r3.2xlarge	8	61	1 x 160	\$2,164	\$0.132	\$0.382	\$9.18	\$275	\$3,304			
	r3.4xlarge	16	122	1 x 320	\$4,328	\$0.264	\$0.765	\$18.36	\$551	\$6,609	(\$5,487)	21	159
	r3.8xlarge	32	244	2 x 320	\$8,656	\$0.528	\$1.530	\$36.72	\$1,101	\$13,218	(\$10,974)	21	159
GPU	g2.2xlarge	8	15	1 x 60	\$2,306	\$0.142	\$0.409	\$9.81	\$294	\$3,533	(\$2,083)	20	37
Storage	i2.xlarge	4	30.5	1 x 800	\$1,820	\$0.155	\$0.366	\$8.78	\$263	\$3,159	(\$4,211)	11	83
	i2.2xlarge	8	61	2 x 800	\$3,640	\$0.311	\$0.732	\$17.58	\$527	\$6,327	(\$8,413)	11	83
	i2.4xlarge	16	122	4 x 800	\$7,280	\$0.621	\$1.464	\$35.13	\$1,054	\$12,645	(\$16,834)	11	83
	i2.8xlarge	32	244	8 x 800	\$14,560	\$1.242	\$2.927	\$70.25	\$2,108	\$25,291	(\$33,668)	11	83
		hs1.8xlarge	16	117	24 x 2048*	\$11,213	\$0.920	\$2.218	\$53.23	\$1,597	\$19,162	(\$20,582)	7
	t1.micro	1	0.613	EBS Only	\$62	\$0.005	\$0.012	\$0.29	\$9	\$105	(\$68)	82	50
	m1.small	1	1.7	1 x 160*	\$123	\$0.010	\$0.024	\$0.58	\$17	\$209	(\$171)	41	70

WHY IS THIS A
POOR WAY
 TO PRESENT DATA?

Revenue by Product Family

BEFORE

STRONG GROWTH ACROSS ALL PRODUCTS

Revenue by Product Family

(in millions) (1)

	4Q 2017	1Q 2018	2Q 2018	3Q 2018	4Q 2018
Architecture, Engineering and Construction (AEC)	\$ 197	\$ 205	\$ 209	\$ 215	\$ 238
Manufacturing	\$ 144	\$ 142	\$ 147	\$ 147	\$ 153
AutoCAD and AutoCAD LT	\$ 88	\$ 92	\$ 97	\$ 103	\$ 111
Media and Entertainment (M&E)	\$ 35	\$ 37	\$ 38	\$ 38	\$ 40
Other	\$ 15	\$ 11	\$ 12	\$ 13	\$ 12

(1) Due to rounding, the sum of the components may not agree to total revenue.

Revenue by Product Family

AFTER

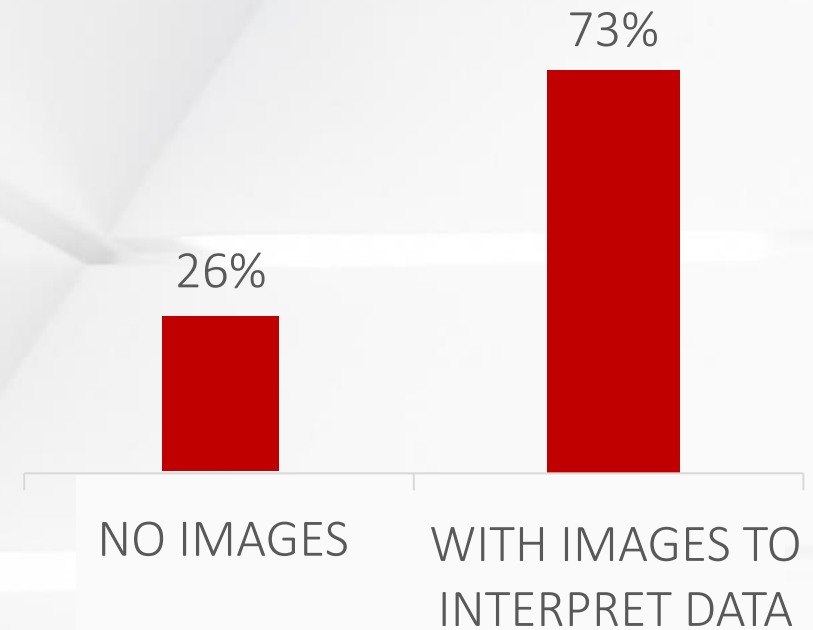
STRONG GROWTH ACROSS ALL PRODUCTS

- AEC: \$238 million (up 21%)
- Manufacturing: \$153 million (up 6%)
- AutoCAD and AutoCAD LT: \$111 million (up 26%)
- Media and Entertainment: \$40 million (up 13%)

RECALL AND
COMPREHENSION

GO UP

WHEN DATA IS
INTERPRETED
VISUALLY



% REPORTING THAT SLIDES
HELPED THEIR
UNDERSTANDING

Strong AAR Growth with Subscription Momentum

Annualized Recurring Revenue is the key measure of success

- Annual recurring revenue growth is strong
- Added 418k subscription customers while shedding 166k from maintenance plans in Q4
- 4Q19 Total AAR is up 34% year to year
- EC, Manufacturing, and AutoCAD/AutoCAD LT product segments' revenues are growing in spite of cheaper rival products

Strong ARR Growth With Subscription Momentum

ARR is the key measure of success

AFTER



*Includes \$27 million of ARR related to fourth quarter acquisitions, or one point of the 34% Y/Y growth.

INFOGRAPHICS CHARTS & GRAPHS

INTERPRETIVE VISUALIZATIONS

1

SHOW RELATIONSHIPS

2

REVEAL PATTERNS

3

TELL STORIES





USE PHOTOS FOR FEELING

TOP RESEARCH ABOUT IMAGES

- 🍎 People who don't look like models have the highest emotional transfer
- 🍎 Avoid cutesy, funny, and clip art
- 🍎 Anchor images to an edge for a look that holds together

3 BIG RULES OF GRAPHIC DESIGN



- 1 SHOW IMPORTANCE WITH SIZE
- 2 GROUP RELATED ITEMS WITH SPACE
- 3 LINE EVERYTHING UP

TAKEAWAYS

PSYCHOLOGY OF PPT

- 1 Structure presentations first
- 2 Less is more.
- 3 Looks matter. Use the 3 rules of graphic design.



WHAT DID YOU LIKE THE MOST?

WHAT WILL BE MOST USEFUL?



METRICS, METRICS, METRICS

Together we can *prove* something meaningful.

DO ONE, GIVE ONE

Together we can *do* something meaningful.