



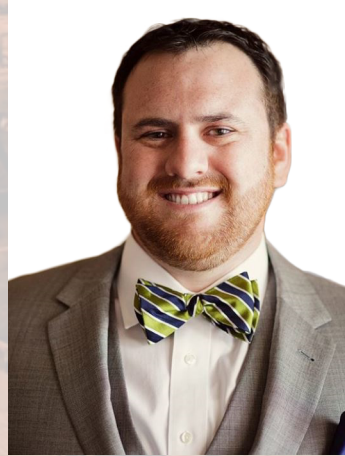
Validation of Construction Data

Presented by
Kris Lengieza, Stiles Construction
Nathan Wood, SpectrumAEC

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PROCORE

Speakers

CONSTRUCTION
BUSINESS OWNER
WEBINAR



KRISTOPHER LENGIEZA
Director of VDC
Stiles Corporation

Kristopher M. Lengieza has been instrumental with the integration of VDC, LEAN and LEED principles at several companies over the course of his career. Kris has earned a multitude of awards for his work and has been nationally recognized as one of the top 40 construction professionals under 40 by ENR and BD&C. He constantly seeks to further the use of technology and foster innovation in the construction industry, most recently as part of the Construction PDF Coalition. Lengieza has been a sought-after speaker for national conferences including Autodesk University, BIMForum, Ecobuild, SPAR and many other regional events. Lengieza is always willing to volunteer and share his knowledge. He has taught for numerous organizations over the past 5 years including AGC and AIA to name a few. Lengieza earned his civil engineering degree from Lehigh University in 2004.



NATHAN WOOD
CEO & Founder
SpectrumAEC

Nathan Wood has emerged as a thought leader for innovation across the architecture, engineering and construction (AEC) industry. Wood understands how rewarding design and construction can be when project teams embrace a new paradigm of digital collaboration. As SpectrumAEC's founder and chief enabling officer, Nathan leverages his international experience with BIM, lean, and integrated project delivery (IPD) to support the development and implementation of flexible standards that balance the needs of people, process, and technology. Wood has an ability to identify the root causes preventing new technology implementation and works alongside project stakeholders and technical leads to align the team around clear goals with shared incentives. Outside of SpectrumAEC, Wood continues to support industry progression through conference presentations, academic papers, and leadership in organizations such as the Construction PDF Coalition and Virtual Builders, Inc.

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6D's Exponential Framework

Digitized
(Information Tech)

Deceptive

Disruptive

Dematerialized

Demonetize

Democratize

1

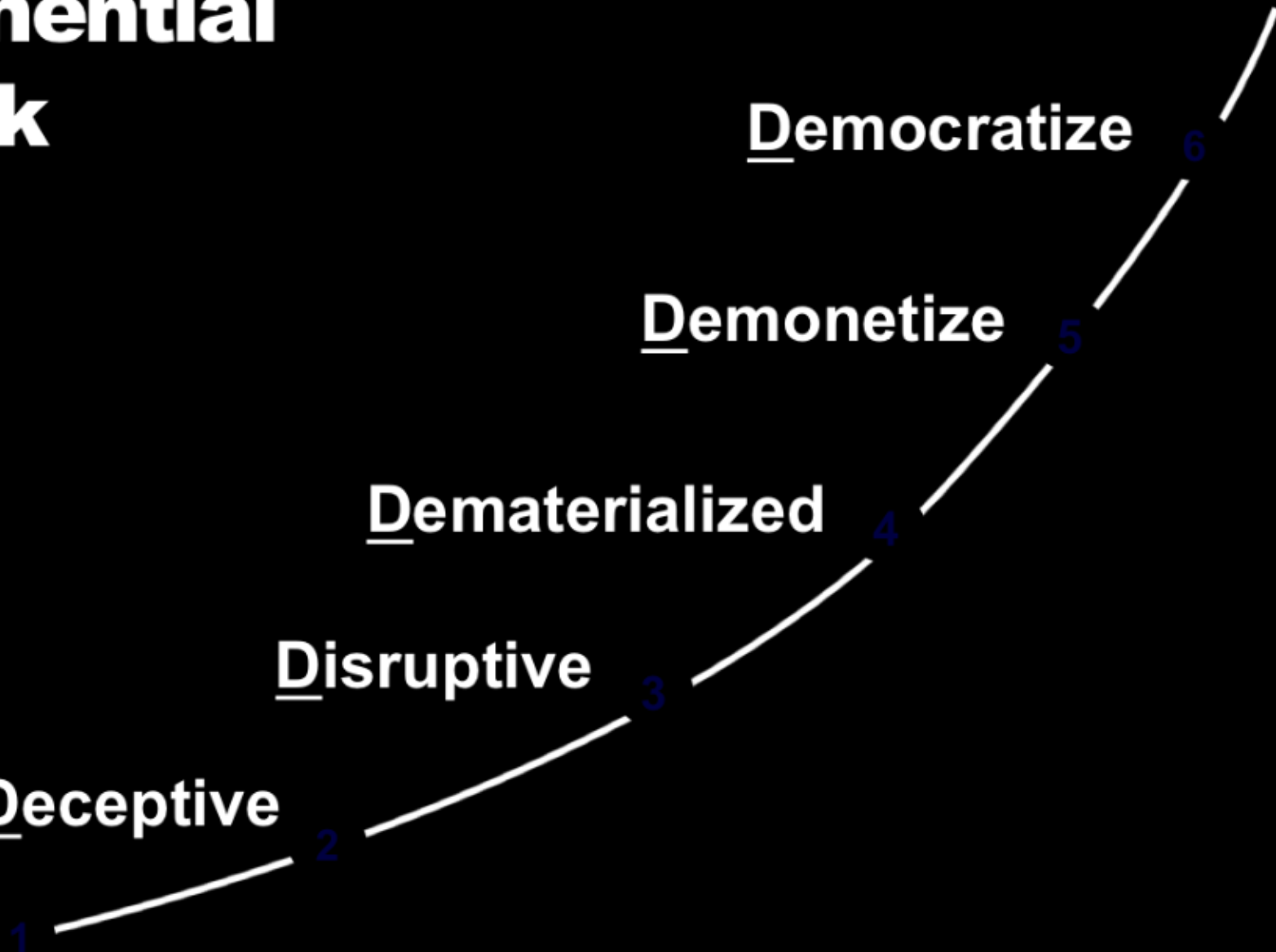
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3

4

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6





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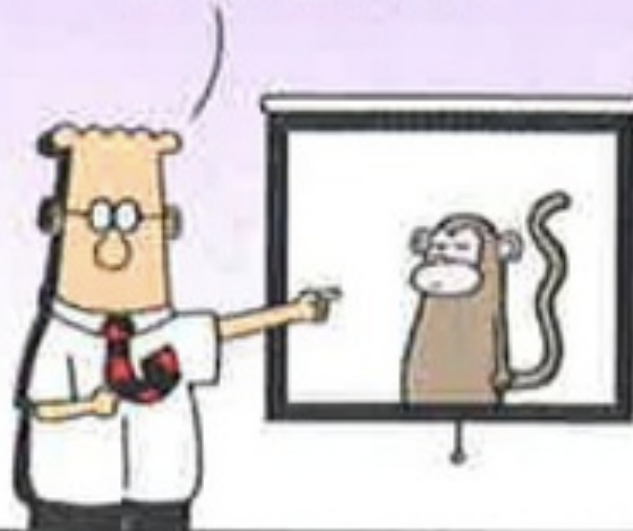
The Future of Data Democratization?

IF WE MIGRATE OUR ENTERPRISE APPLICATIONS TO THE WEB, AND OUTSOURCE OUR SALES AND PRODUCT DEVELOPMENT...



Dilbert.com DilbertCartoonist@gmail.com

THE ENTIRE COMPANY CAN BE MANAGED BY ONE MONKEY.

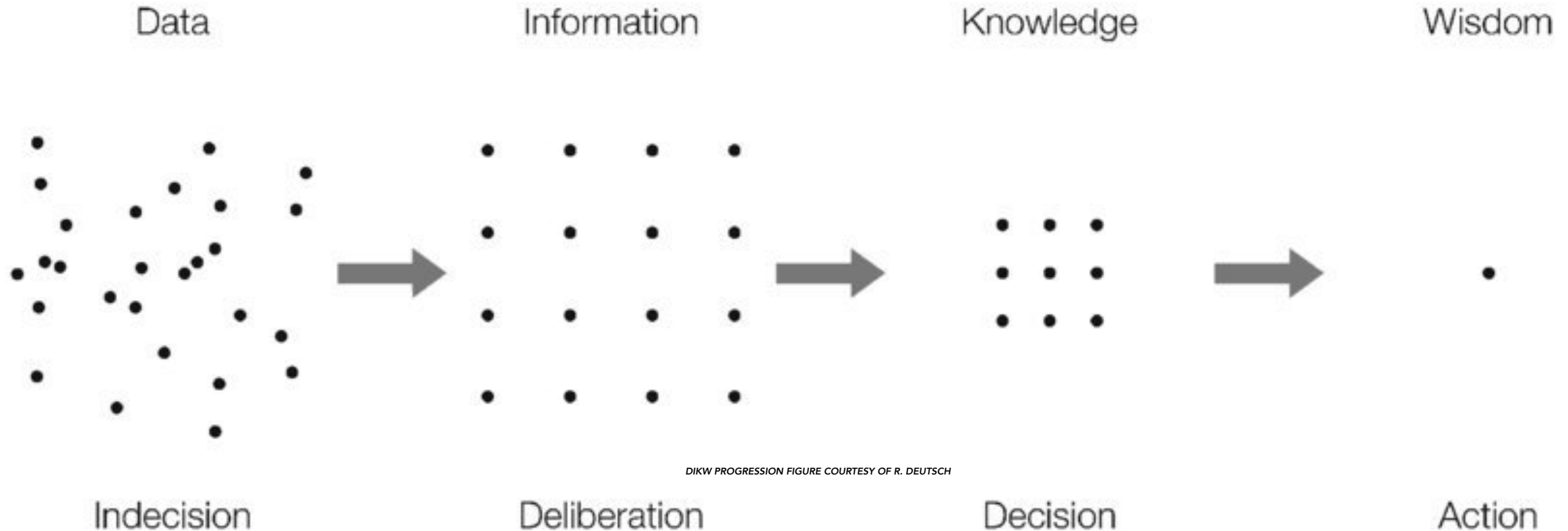


1-18-10 ©2010 Scott Adams, Inc. /Dist. by Universal Uclick

PLUS A SECOND MONKEY TO LOOK AT THE POWERPOINT SLIDES FROM THE FIRST MONKEY.



The Value of Data Capture & Analytics



DIKW PROGRESSION FIGURE COURTESY OF R. DEUTSCH



DATA

PROJECTS

DATA

SOFTWARE

DATA

PEOPLE

DATA

PROCESS

DATA

PROJECTS

DATA

SOFTWARE

DATA

PEOPLE

DATA

PROCESS

THE
STRUGGLE
IS
REAL

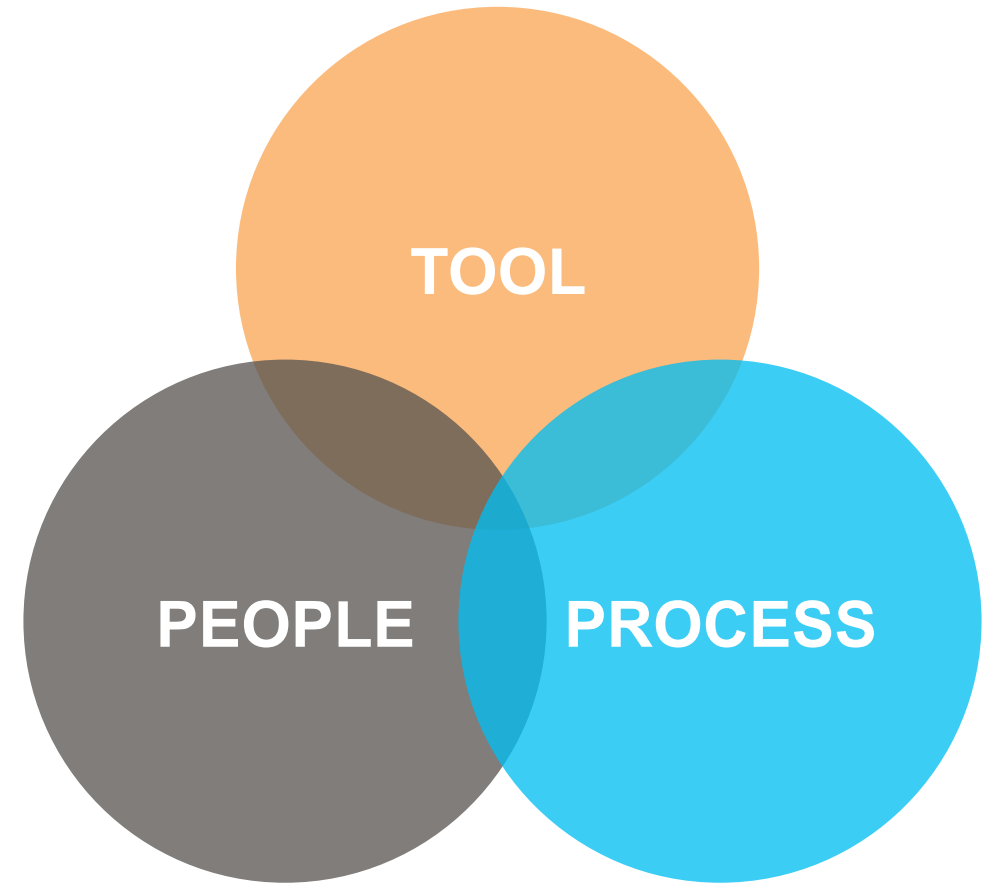


Traditional Practices Won't Survive the Digital World

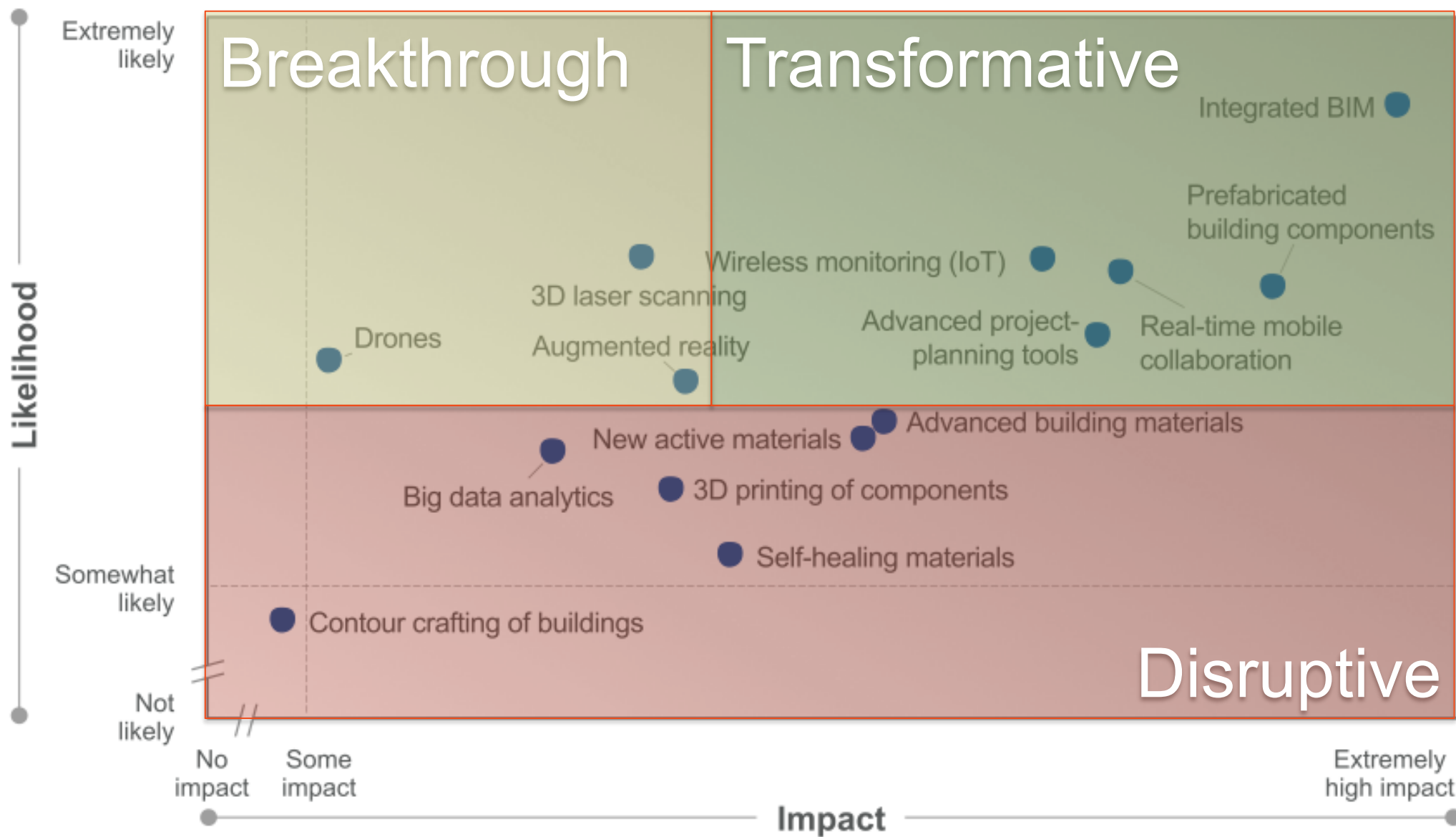


The Role of Data in Digital Transformation

1 Data is just a **Tool**

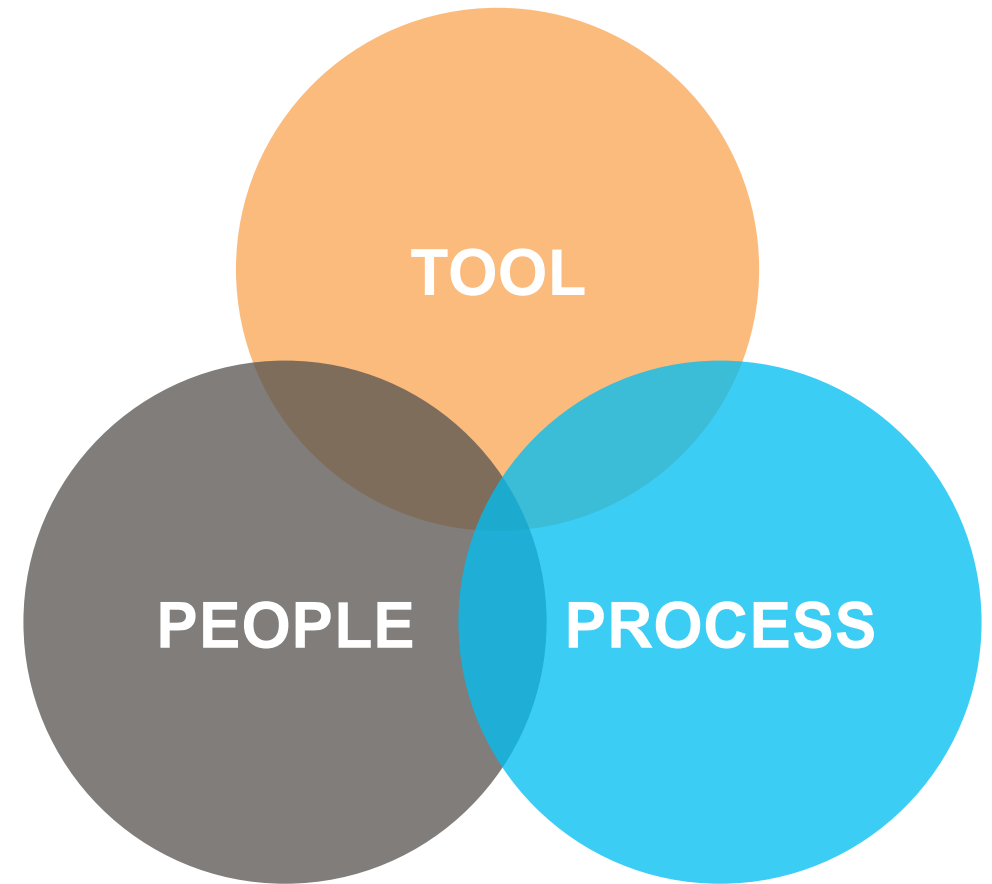


Impact-likelihood matrix of new technologies

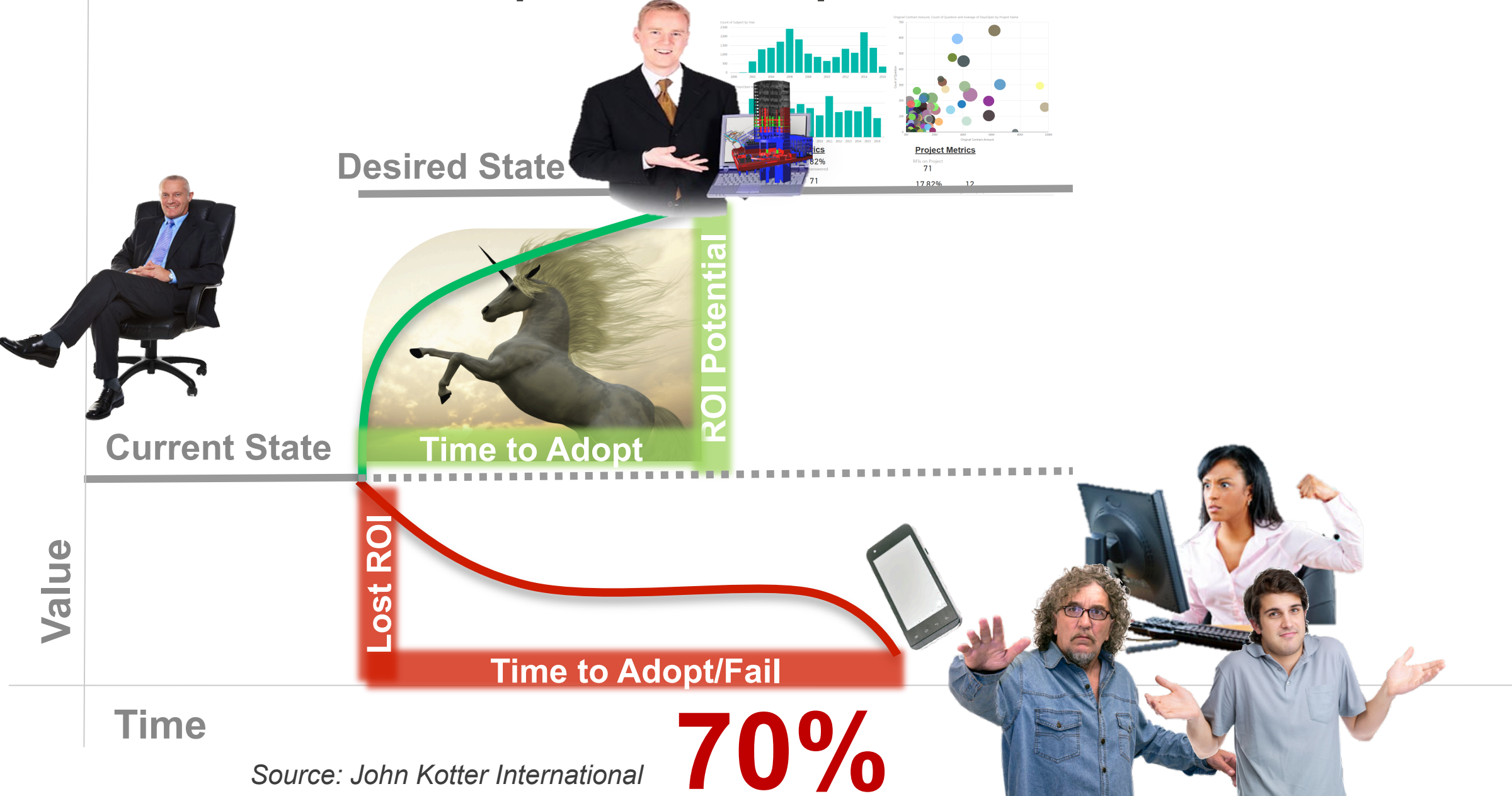


The Role of Data in Digital Transformation

- 1 Data is just a **Tool**
- 2 This **Tool** is only as good as the **People** using It



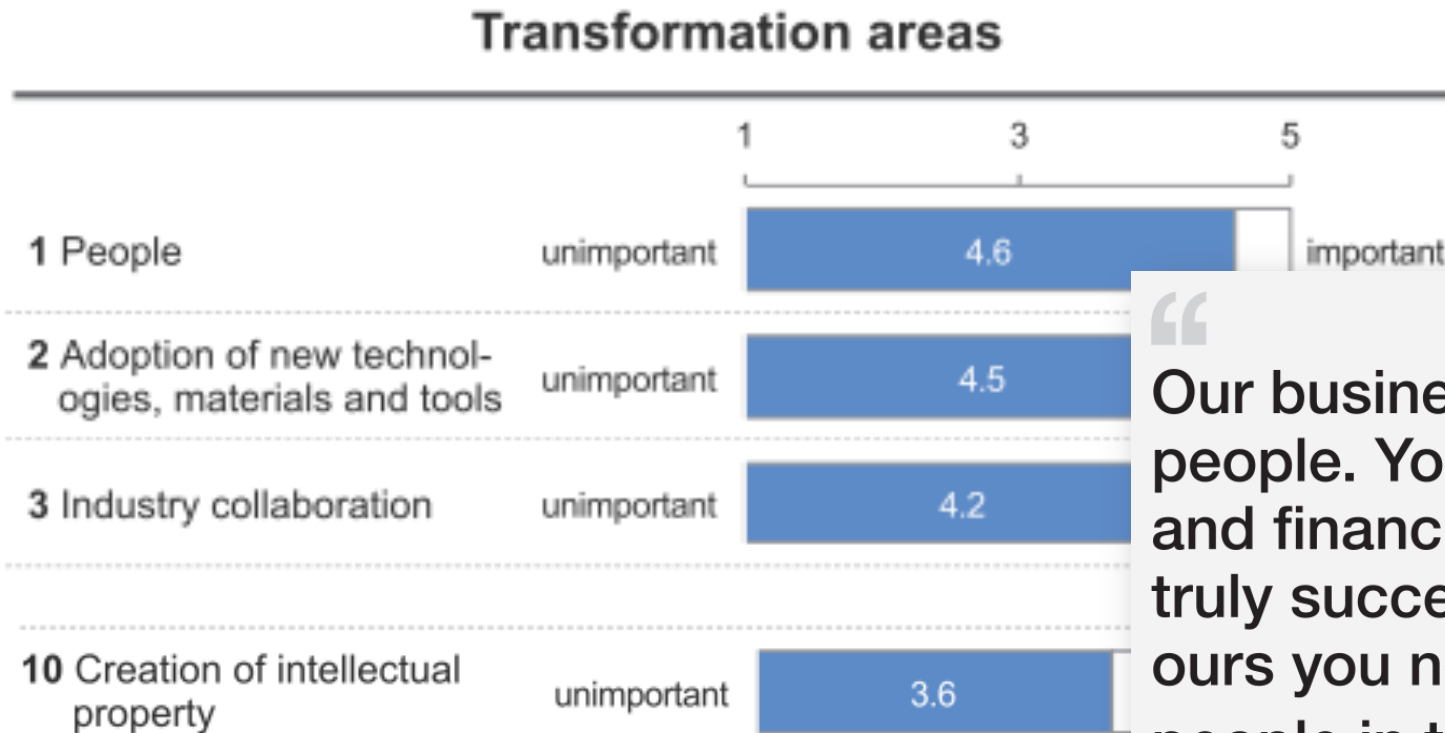
The Impact on Implementation



Source: John Kotter International

Changing Tools is Easy. Changing People is Hard.

Figure 17: Importance of Different Transformation Areas for the E&C Industry



Source: Future of Construction Survey; World Economic Forum
The Boston Consulting Group

Shaping the Future of Construction A Breakthrough in Mindset and Technology

“
Our business is really all about people. You can have equipment and financial resources, but to truly succeed in a business like ours you need to have the right people in the right places.
”

Peter Bjork, Vice-President, Information Systems Strategies, Skanska, Sweden

The Tipping Point of Adoption



80%

of execs agree that knowledge-sharing across roles is crucial for growth.

*Only **25%** claim their organization is effective at this.*

78% *of Millennials say access to technology they like makes them more effective at work.*

66%

of workforce are Gen Xers and Boomers.

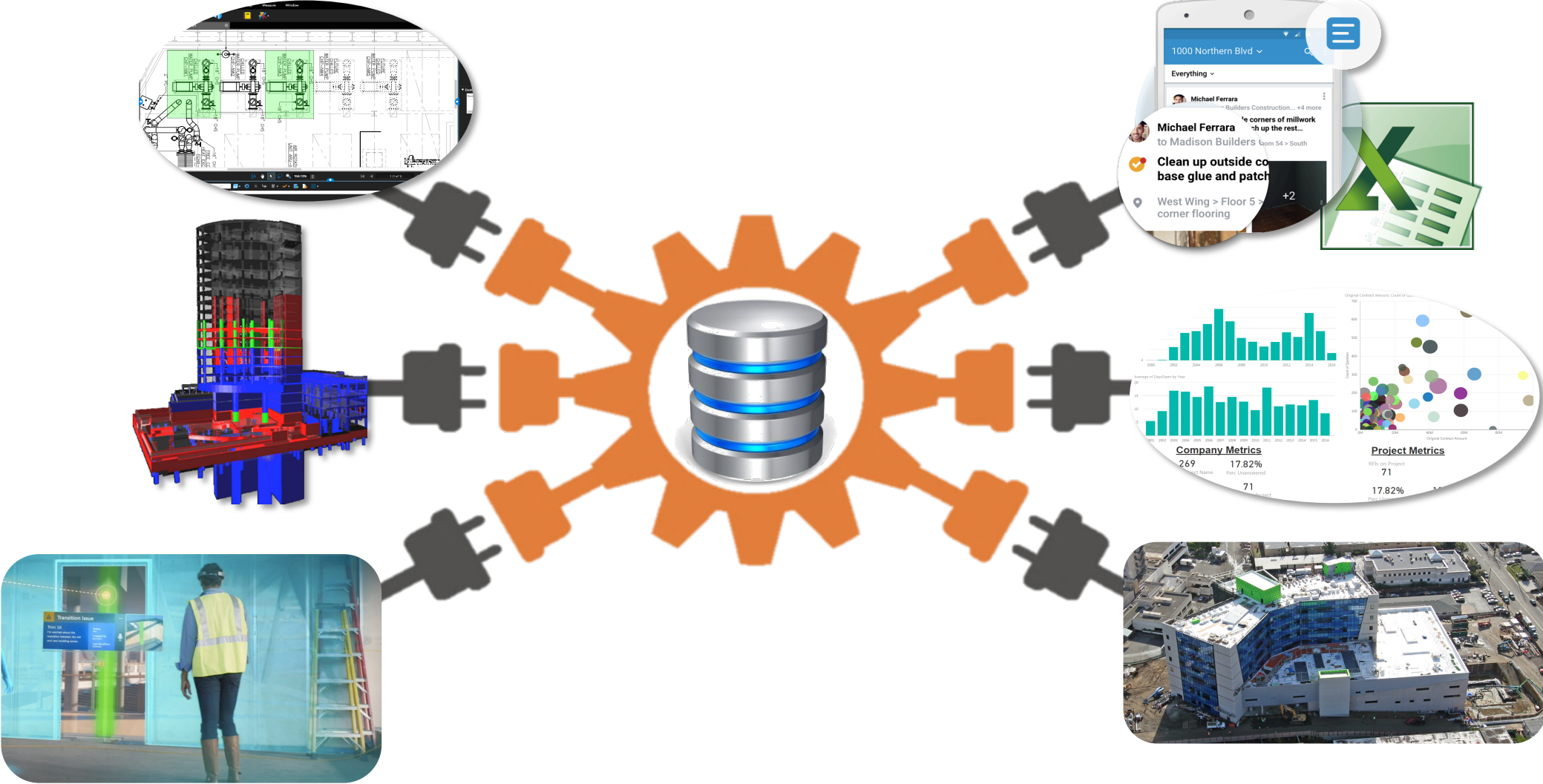
*By 2020, they'll represent only **54%**.*



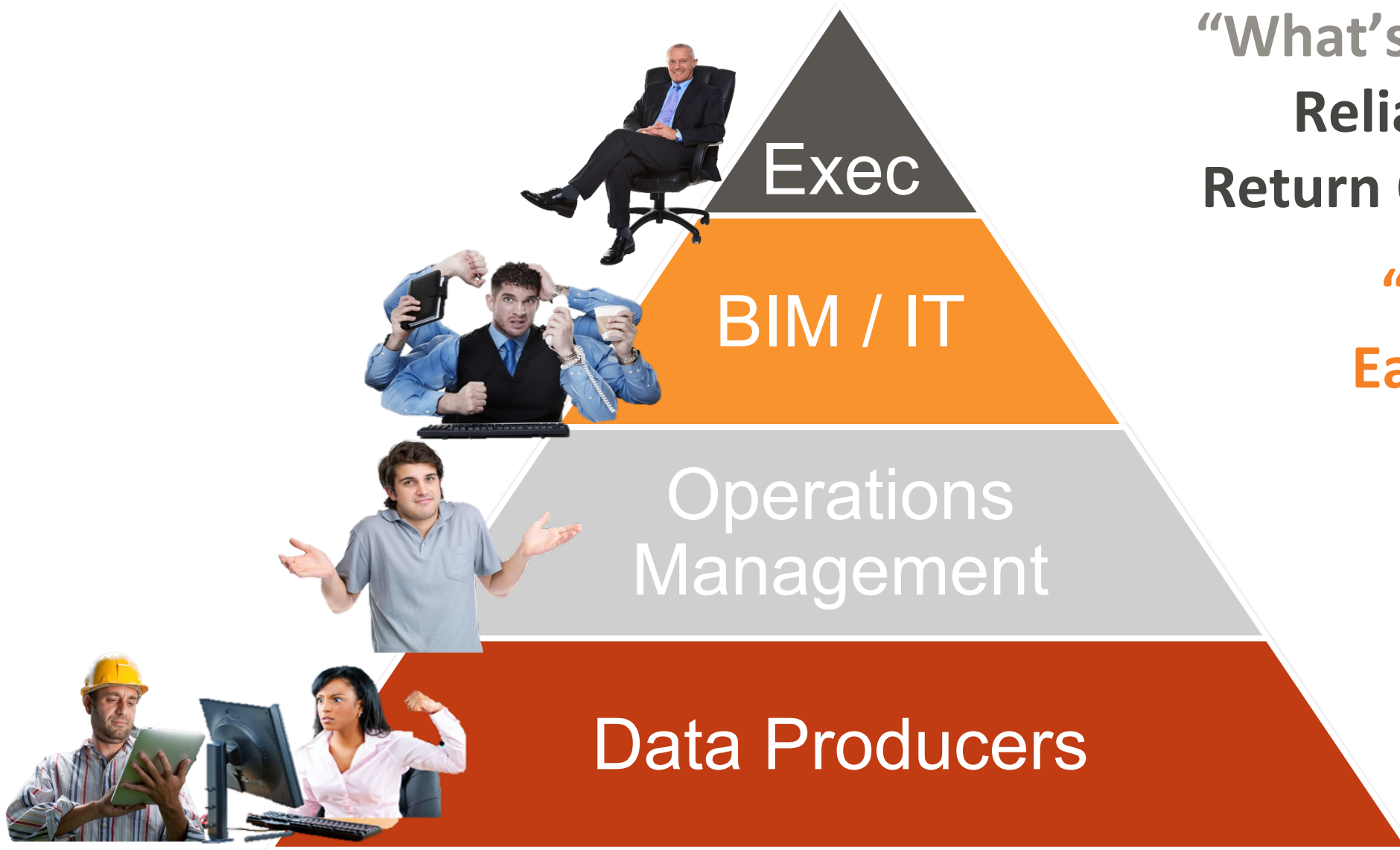
STRXUR
EXTREME TEAMS

Barton
Malow

Different People Need Data in Different Ways



Respect the Different Perspectives



Exec

“What’s In It For Me?”
Reliable Outcomes
Return On Investment

BIM / IT

“One Standard”
Easy to Replicate

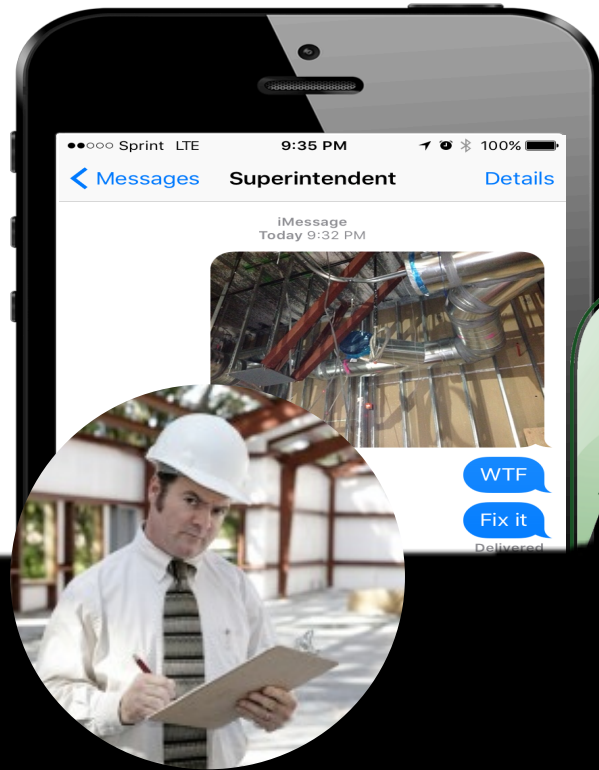
Operations
Management

Project Specific
Easy to Use

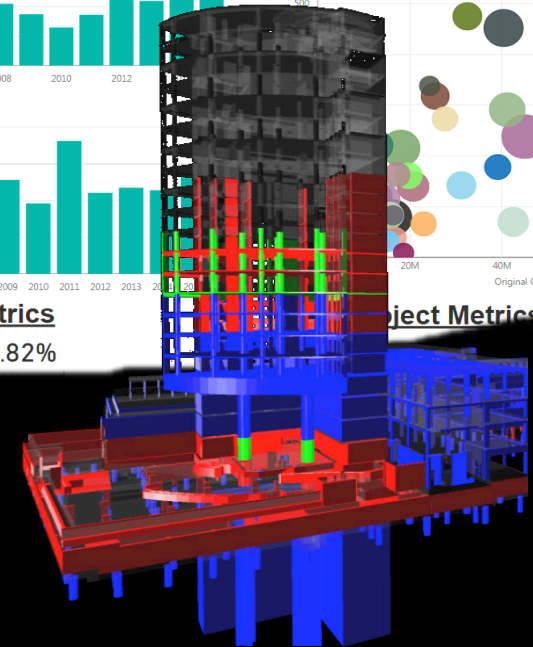
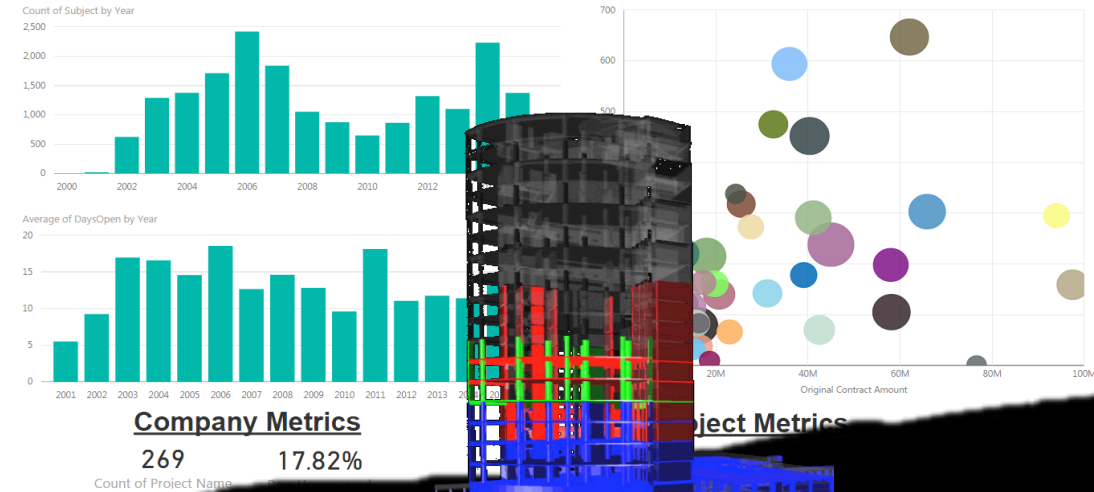
Data Producers

Direct Value
Added

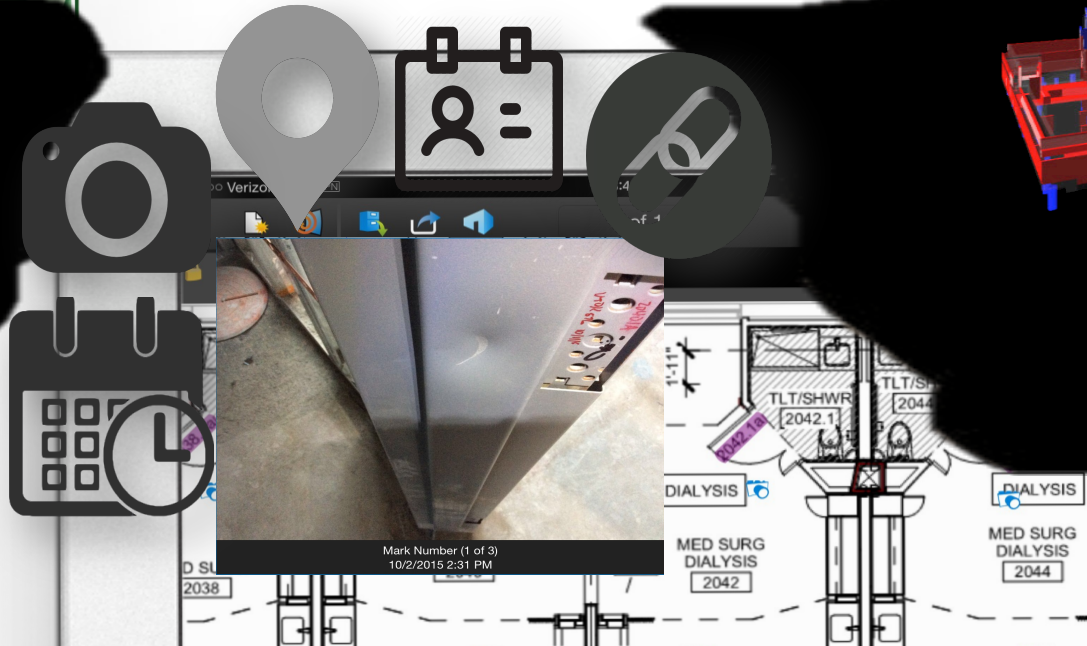
Bridging the Gap to Digital Transformation

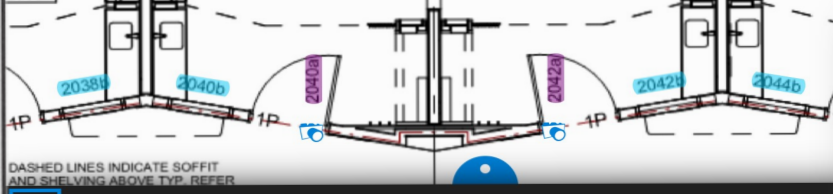
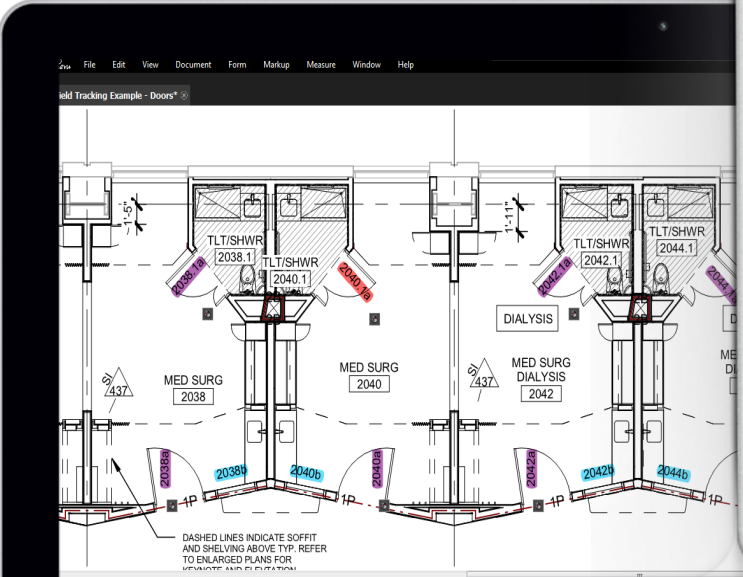


Intuitive & Efficient



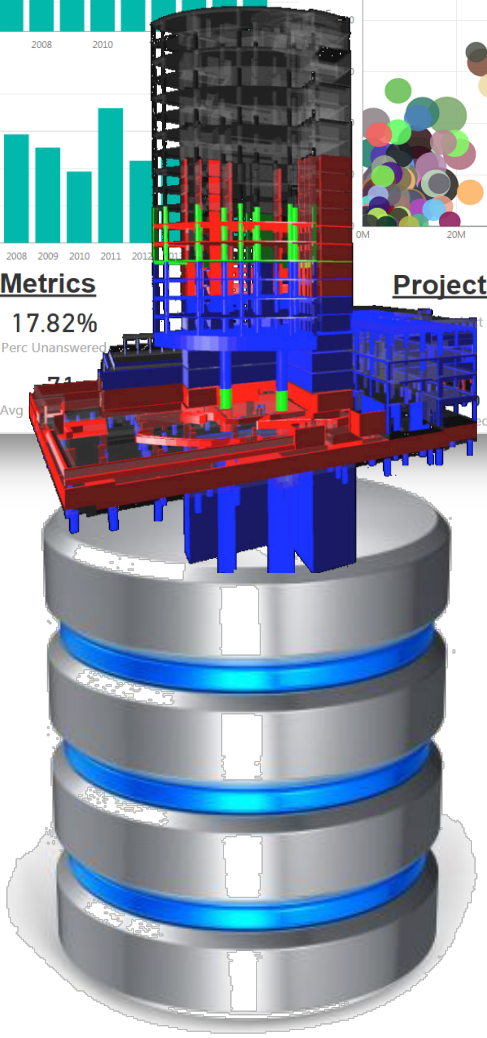
Integrated & Reliable





Author	Page	Status	Capture	Date
BradleyS	A232B	DFH Tracking : Frame Received & Stocked set by Brad's iPad DPR on 9/23/2015 at 7:57:35 AM	10/10/2015 2:08:47 PM	
BradleyS	A232B	Trade Damage Frame set by rickymayfield's iPad on 9/25/2015 at 10:43:55 AM	10/10/2015 2:07:31 PM	
BradleyS	A232B	Issue Tracking: Trade Damage Frame set by rickymayfield's iPad on 10/2/2015 at 2:30:52 PM	10/10/2015 2:07:31 PM	

Location
Creation
Status
Data
Sheet
A232B
Profile



Subject	Author	Creation Date	Page	Comments	Status	Inspection Number	OHS Required	Increment	Room Type	Frame Order	Depressed Slab	Quantity Total	Capture	Lockout Mounting	Close
Mark Number	BradleyS	1/21/2015 4:50	Page A232B	2040 1a	DFH Tracking : Frame Received & Stocked set by Brad's iPad DPR on 10/15/2015 at 9:00:16 AM	LP-1350		Inc 3	Patient Room Bath	9/15/15	Yes	1	9/15/15		
Mark Number	BradleyS	1/21/2015 4:51	Page A232B	2036 1a	Trade Damage Frame set by rickymayfield's iPad on 10/15/2015 at 9:00:17 AM	LP-1350		Inc 3	Patient Room Bath	9/15/15	Yes	1	9/15/15		
Mark Number	BradleyS	1/21/2015 4:51	Page A232B	2027a	Frame Received & Stocked set by Brad's iPad DPR on 10/15/2015 at 9:00:16 AM	LP-1350		Inc 3		9/15/15		1	9/15/15		
Mark Number	BradleyS	1/21/2015 4:51	Page A232B	2019b	DFH Tracking : Frame Received & Stocked set by Brad's iPad DPR on 10/15/2015 at 9:00:17 AM	LP-1350		Inc 3	Utility Room	9/15/15		1	9/15/15		

Everyone Benefits from Digital Transformation But Who Pays for it?



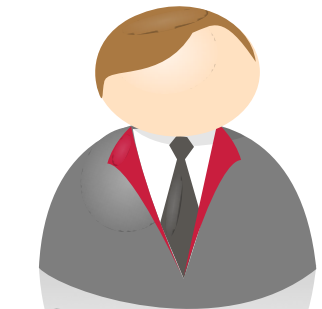
Designer



General Contractor

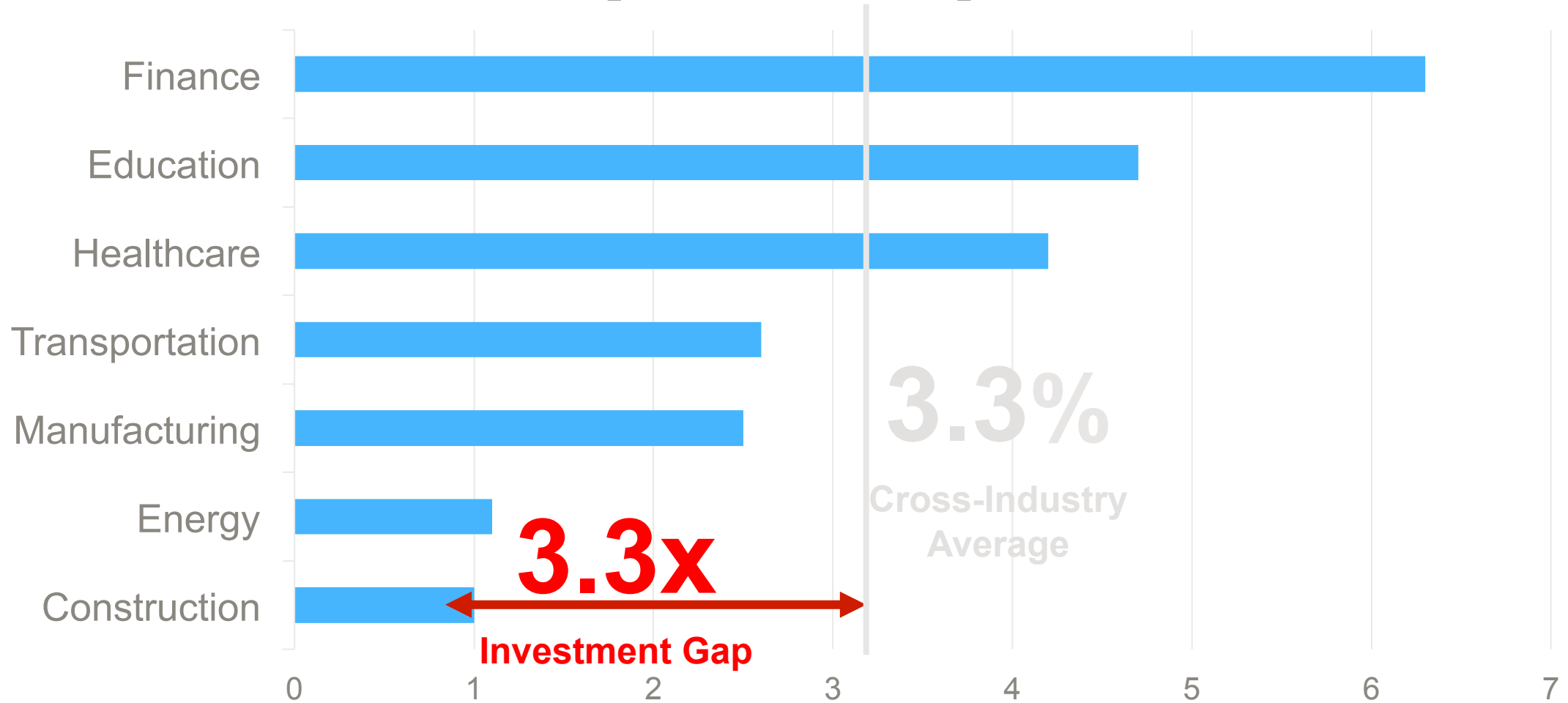


Subcontractor



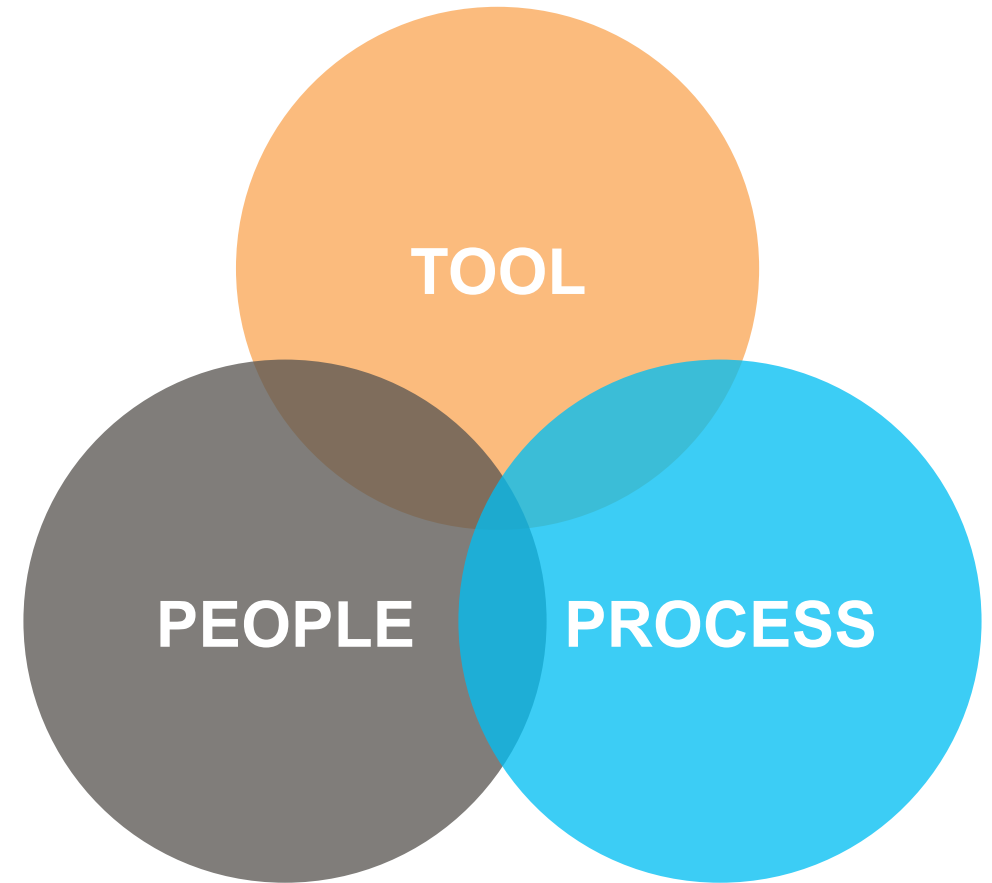
Owner

IT Spending as a % of Revenue, By Industry [Gartner 2014]



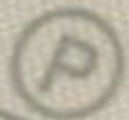
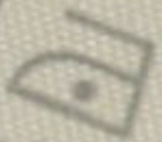
The Role of BIM in Data Democratization

- 1 BIM is just a **Tool**
- 2 This **Tool** is only as good as the **People** using It
- 3 The **People** can only be as effective as the **Process** allows them to be



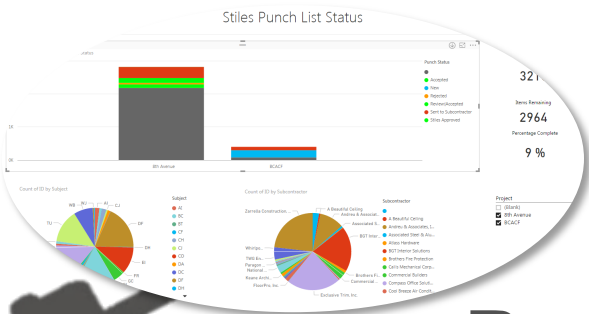
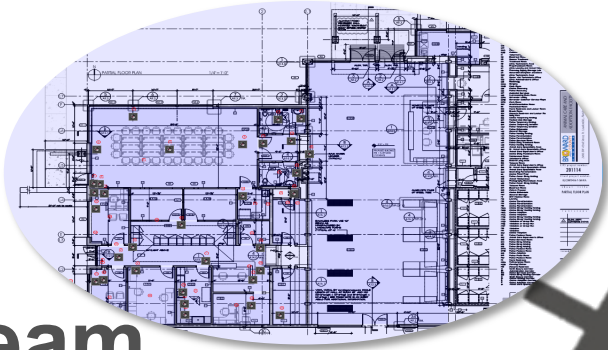
F I GB USA MEX

**ONE SIZE
DOES NOT
FIT ALL**



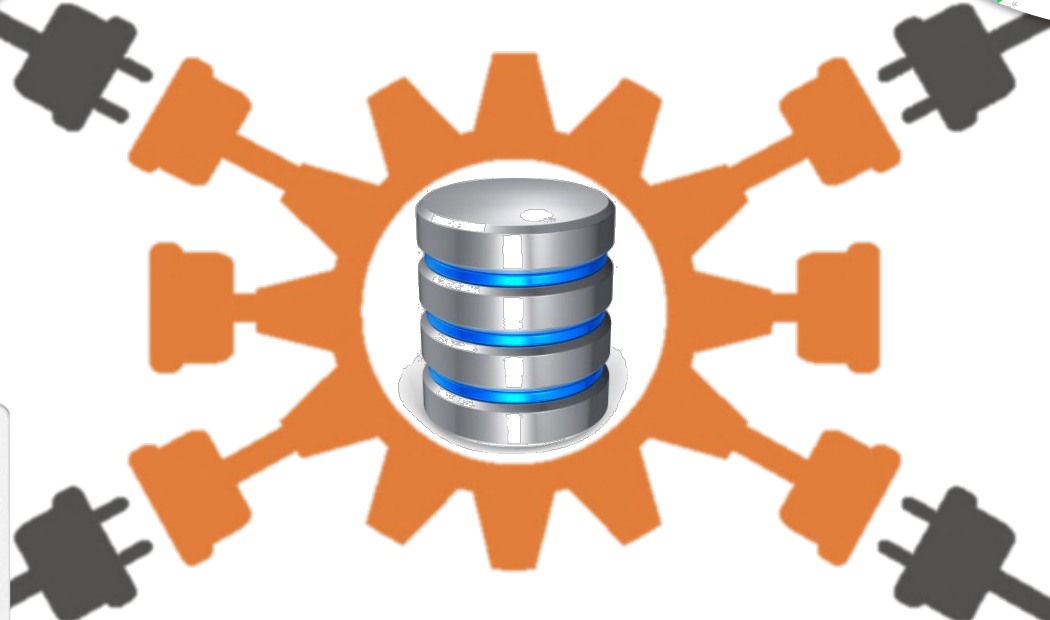
Von links bügeln/ iron inside out/
repasser sur l'envers /只熨反面

Connect the Tools. Transform the Process.



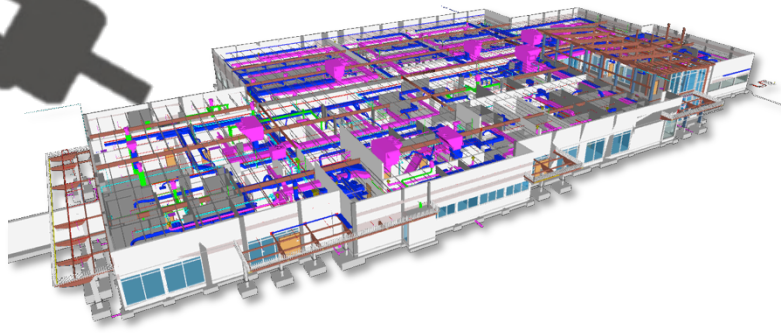
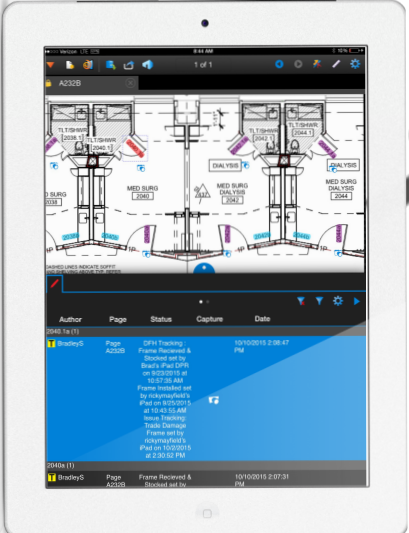
Bluebeam

Power BI



Bluebeam

Navisworks



Turn that data into information



- Massive amounts of data has been collected
- How do we filter and visualize it?
- How do we make meaning of all this data?

Business Intelligence Software

Business Intelligence tools



Power BI



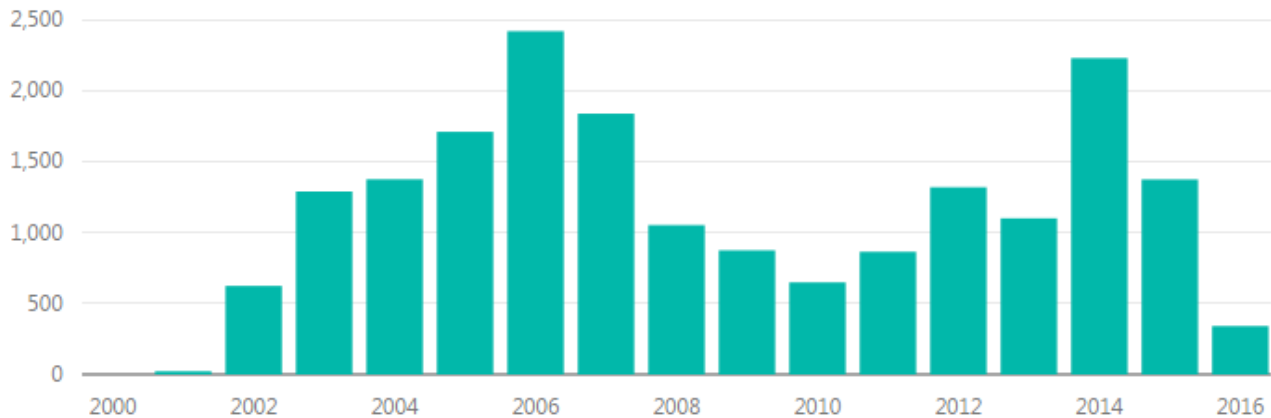
DOMO



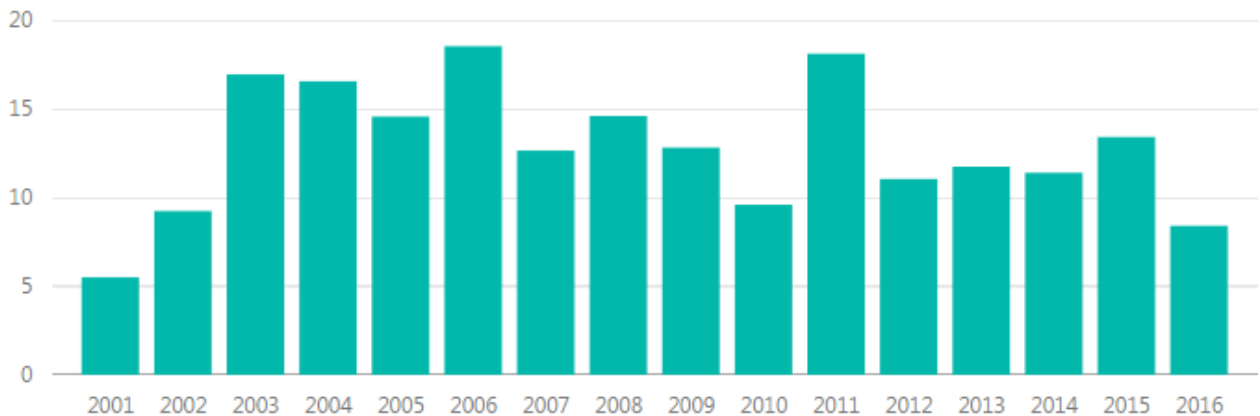
LANTERN DATA SYSTEMS



Count of Subject by Year



Average of DaysOpen by Year



Company Metrics

269

Count of Project Name

17.82%

Perc Unanswered

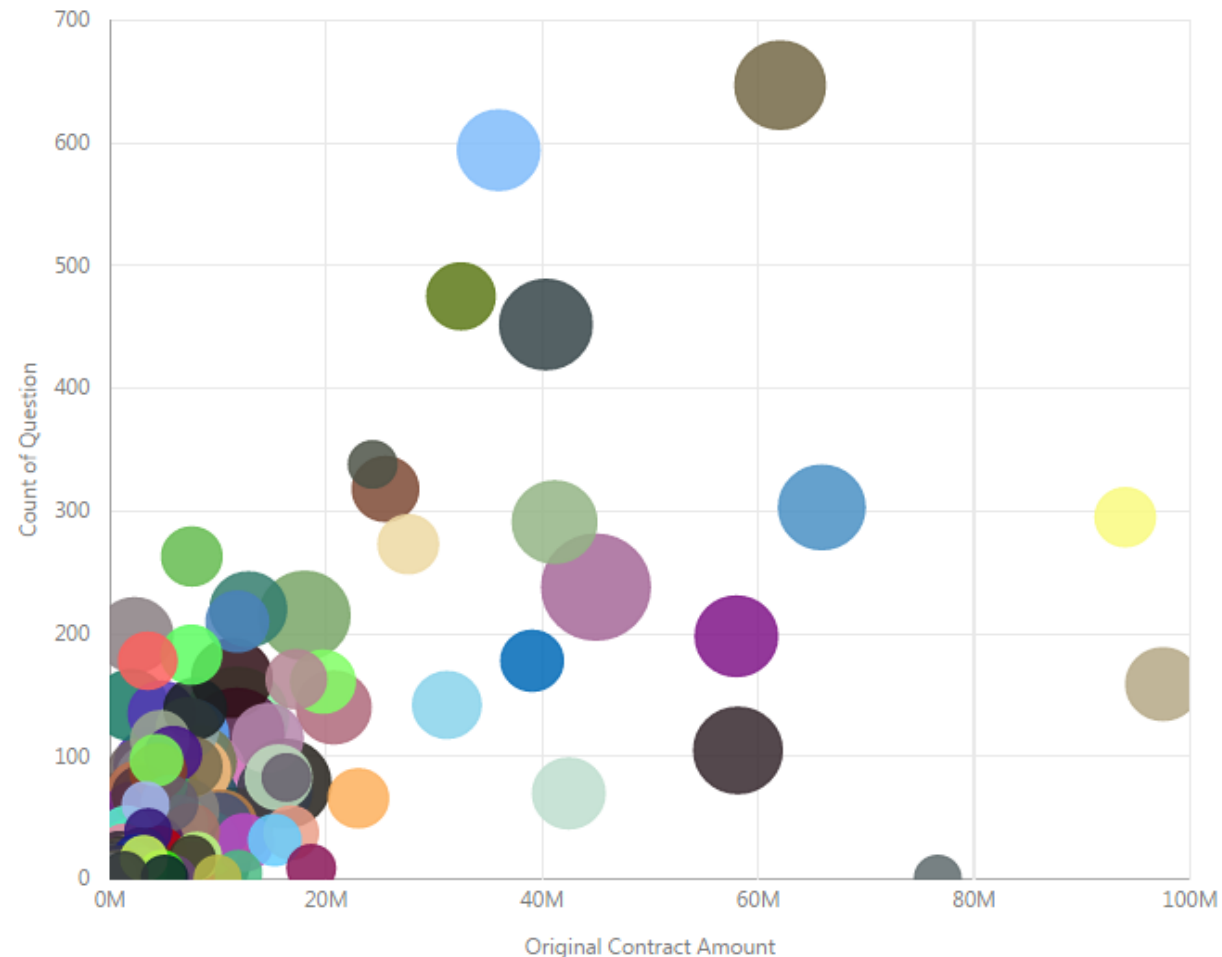
12

Average of DaysOpen

71

Avg RFIs per Project

Original Contract Amount, Count of Question and Average of DaysOpen by Project Name



Project Metrics

RFIs on Project

71

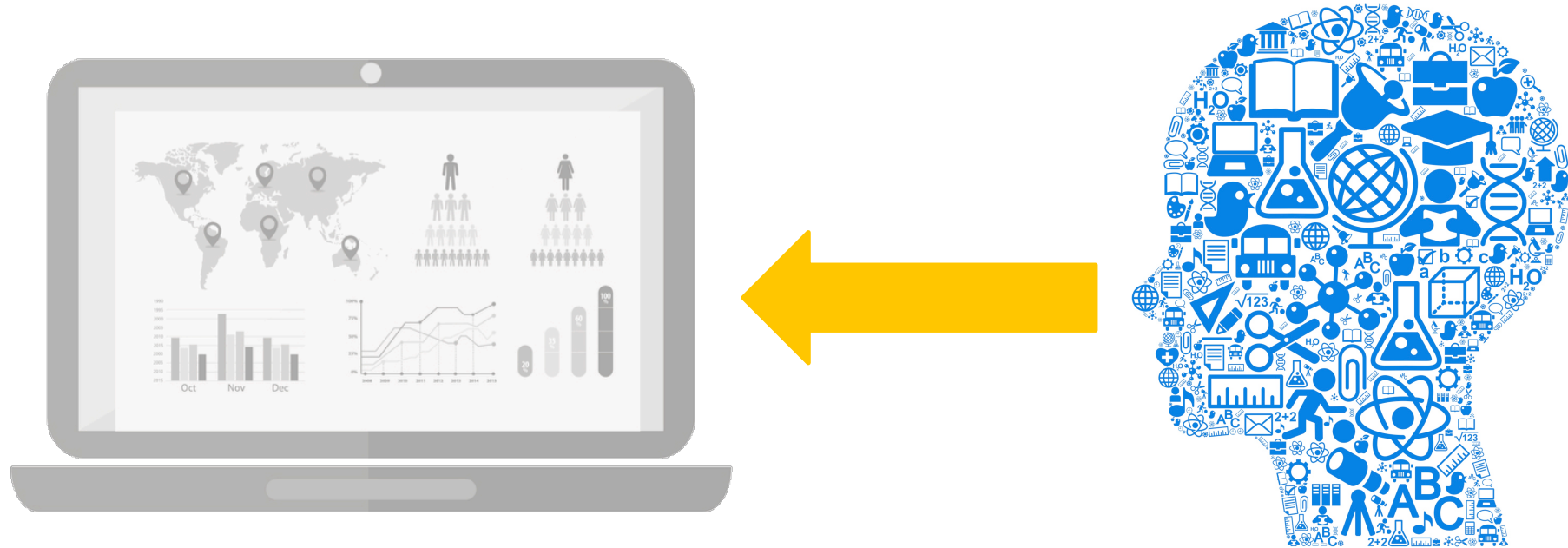
17.82%

Perc Unanswered

12

Average of DaysOpen

Identifying Key Performance Indicators



Current Fee Percentage

6.16%

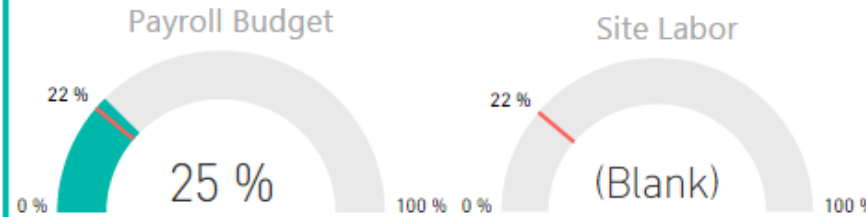
Project List

(Blank)

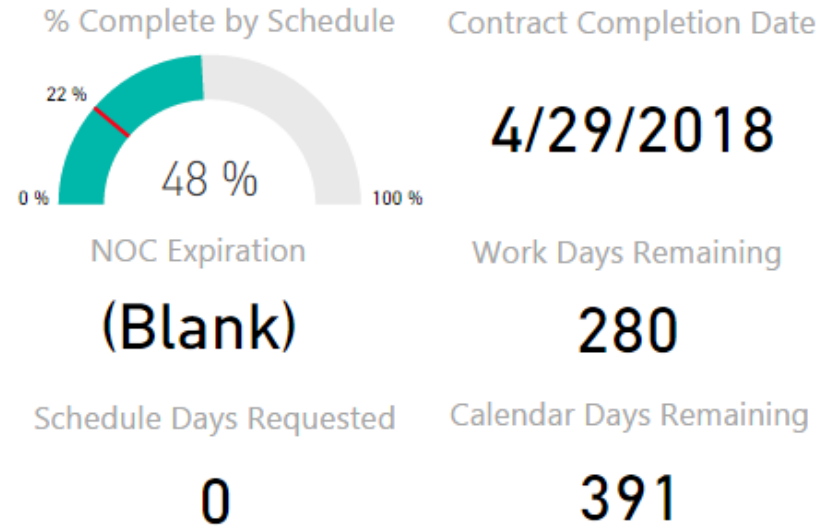
Test Project PX Dashboard

<http://app.procore.com/234390/project/home>

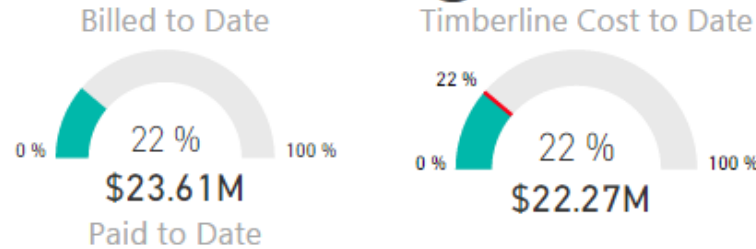
Staffing



Schedule



Billing



\$19.66M

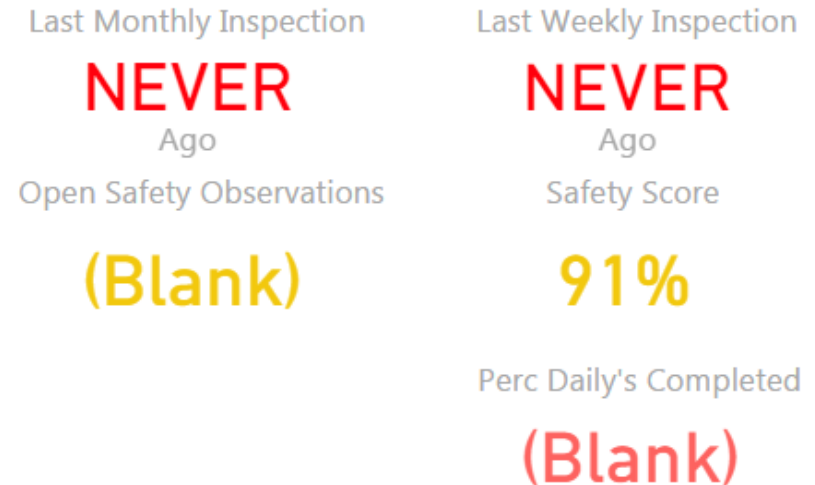
Date of Last Billing

2/20/2017

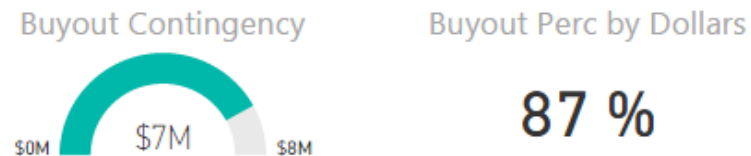
Cost Last Month

83.63K

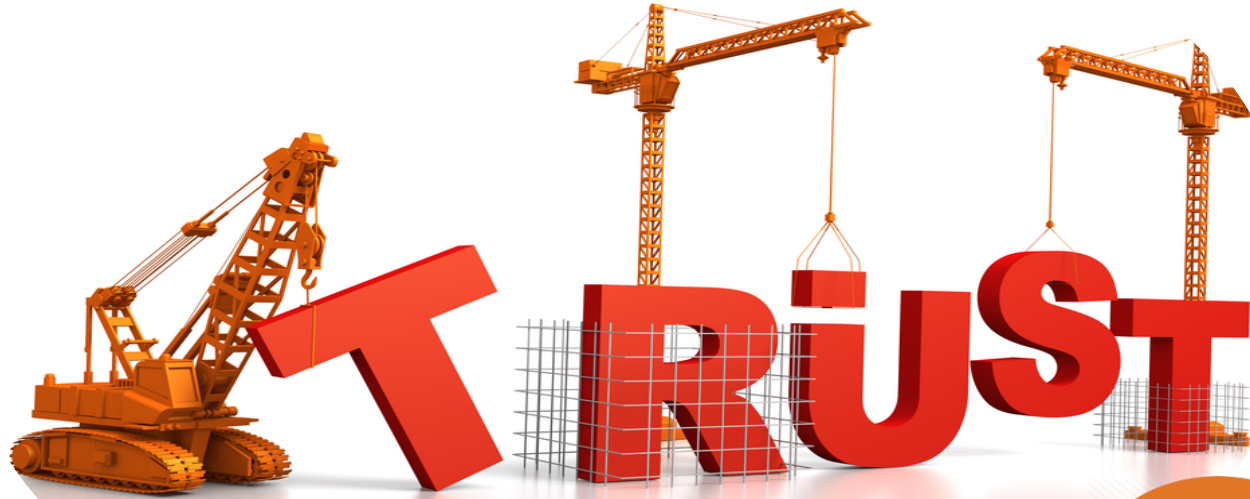
Safety



Buyout



Transforming the Process



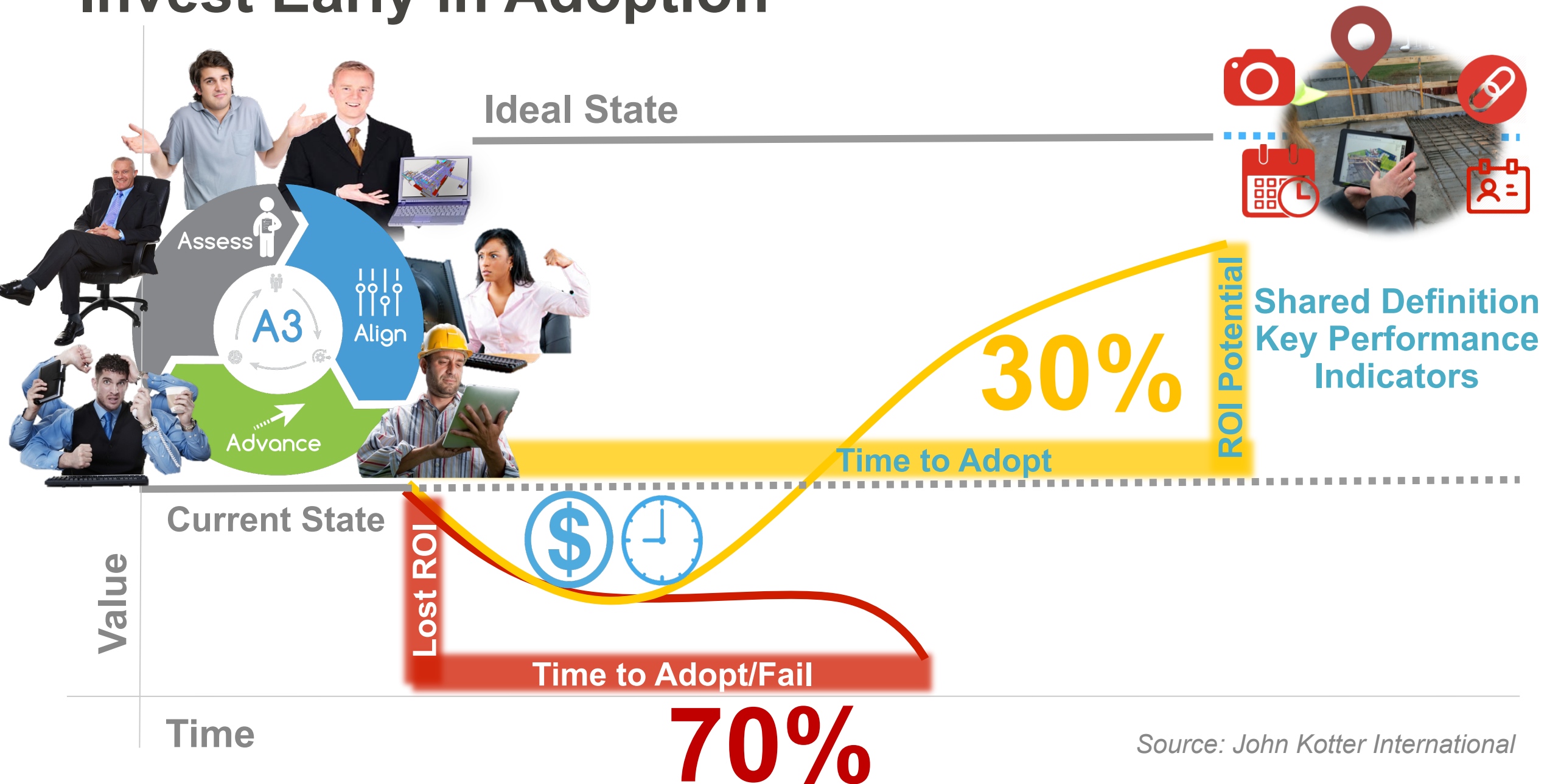
What Gets Measured Gets Done



Using Key Performance Indicators



Invest Early in Adoption



Source: John Kotter International

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Questions?

Have a question for today's presenters? Type your question into the chat feature or send a tweet later!

Kris Lengieza

 **@gieza0527**

*Director of VDC
Stiles Corporation*

Nathan Wood

 **@nathancwood**

*Founder & CEO
SpectrumAEC*

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