

The background is a composite image. It features a city skyline at night with illuminated skyscrapers. In the foreground, a multi-lane highway is shown with light trails from cars, indicating long-exposure photography. Overlaid on this scene is a complex network of white lines connecting various circular nodes. These nodes contain different icons: a cloud, a smartphone, a house, a car, a Wi-Fi symbol, a person, and a bicycle. The right side of the image is partially covered by a large, semi-transparent red triangle.

The Journey of CRE BI & Analytics

29 Sept, 2016

An aerial photograph of a city harbor, likely Hong Kong, showing numerous construction ships and cranes in the water, surrounded by dense high-rise buildings. The text is overlaid in the center in a red, italicized serif font, framed by thin red lines.

The opportunity for real estate to impact the enterprise has never been greater

We regularly hear that companies need more

From data and technology

"Better benchmarking"

"Scenario modeling"

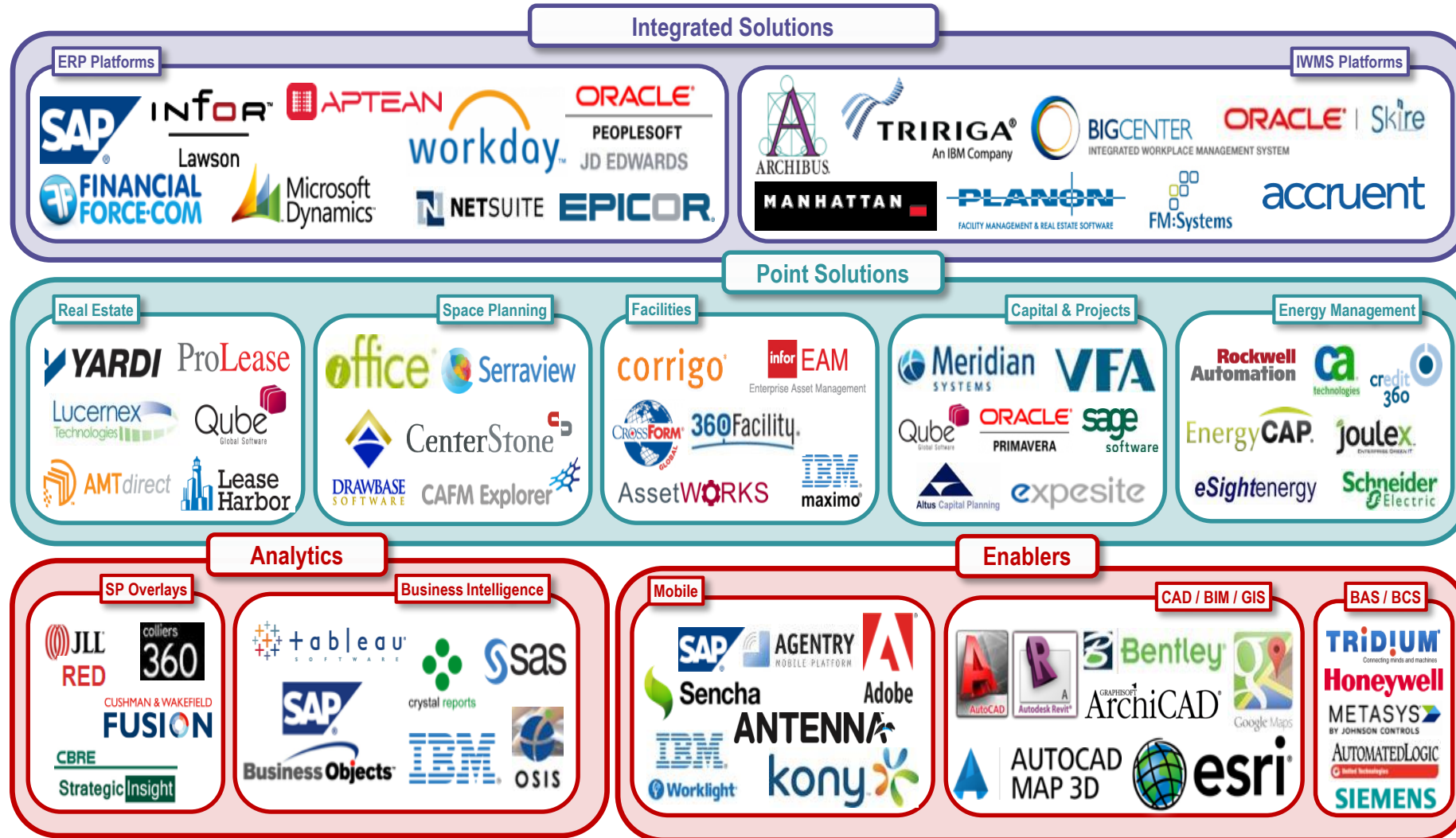
"Data integration"

"Smarter analytics"

"Proactive CRE strategy"

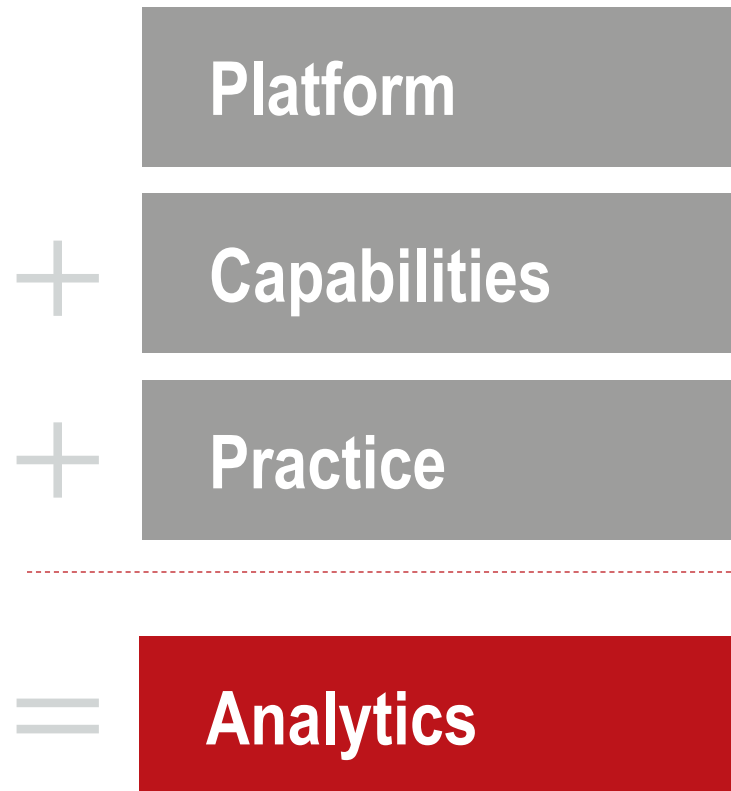
"Mobile-friendly apps"

But we operate in a somewhat complicated landscape....

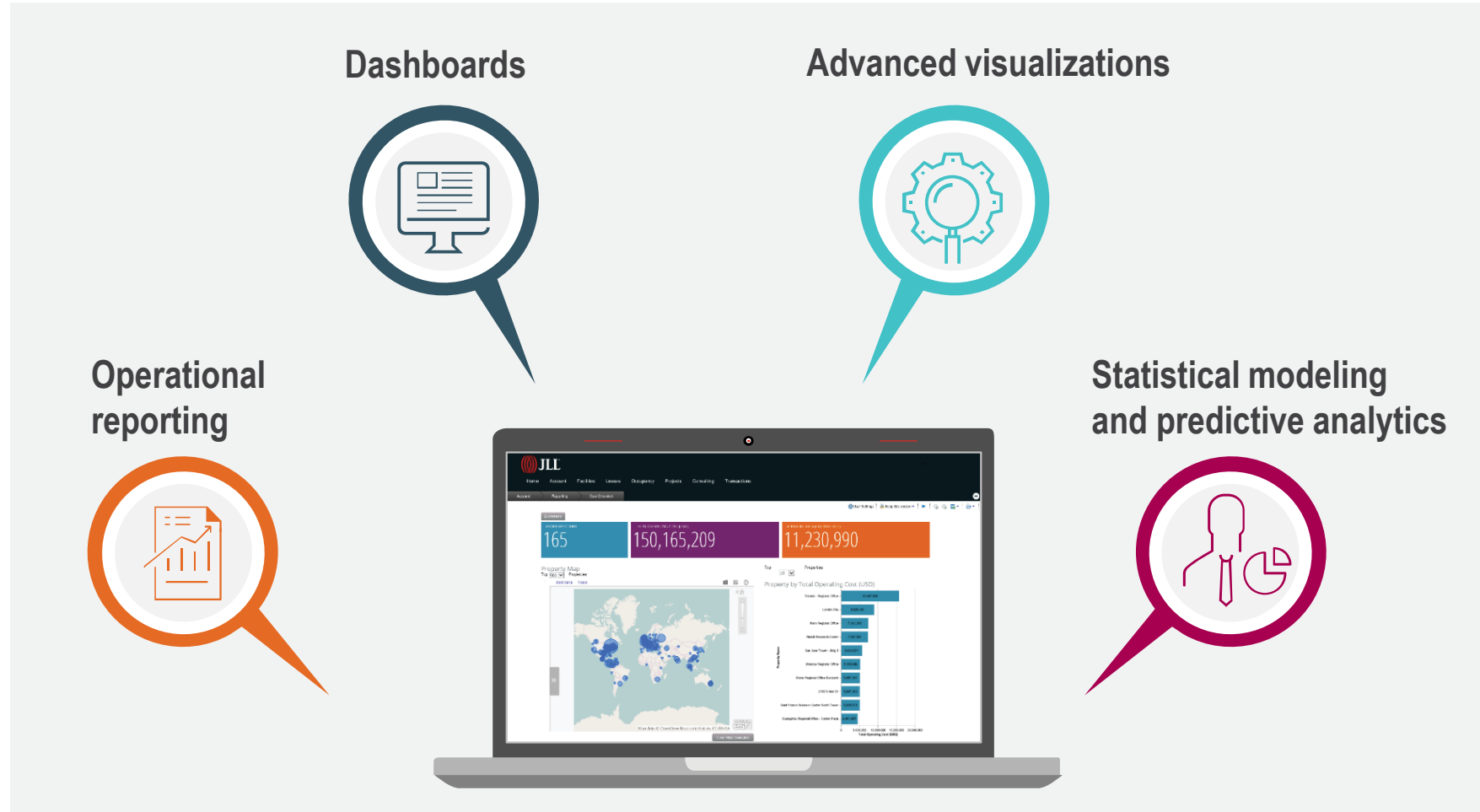


What do we need to get there?

A comprehensive view of what analytics is



Spectrum of capabilities



Change management and the practice around BI is often overlooked



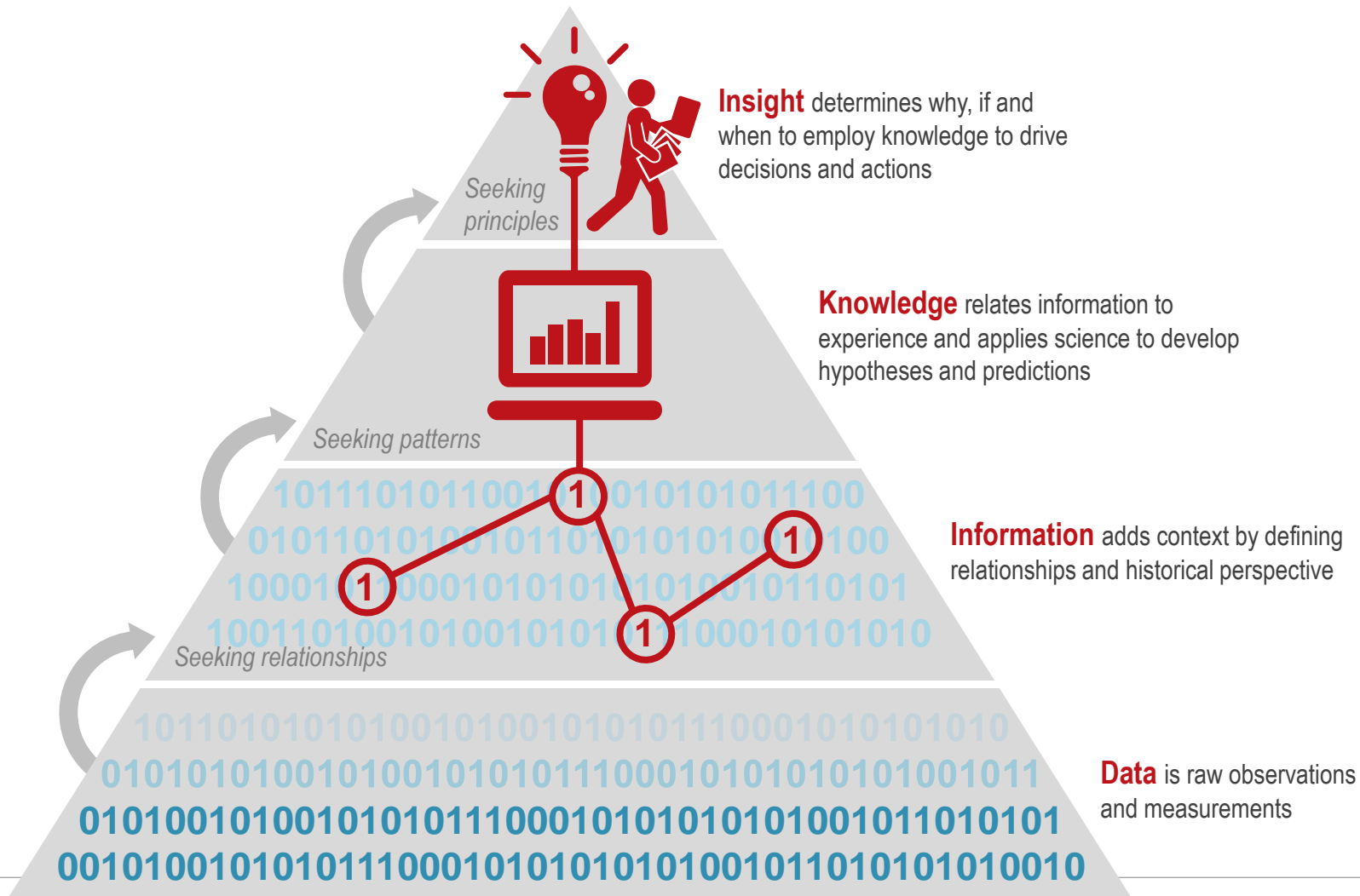
Data Governance is difficult but necessary

Data Management & Governance

- ➔ Getting the data right first time
- ➔ Accelerating time to value
- ➔ Data Governance where it adds value
- ➔ Delivering a sustainable business solution

What does progress look like?

Maturity View

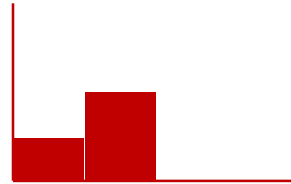


Data View



Service
data

Expiring leases, FM service & cost performance....

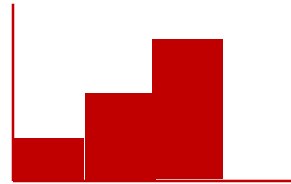


Service
data

+

Market data

FM costs v market, Market rent comparisons....



Service
data

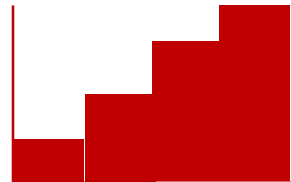
+

Market data

+

External
data

FM costs adjusted for labor rates, location v skills availability...



Service
data

+

Market data

+

External
data

+

Client
Business data

Impact of RE strategy on Business performance....

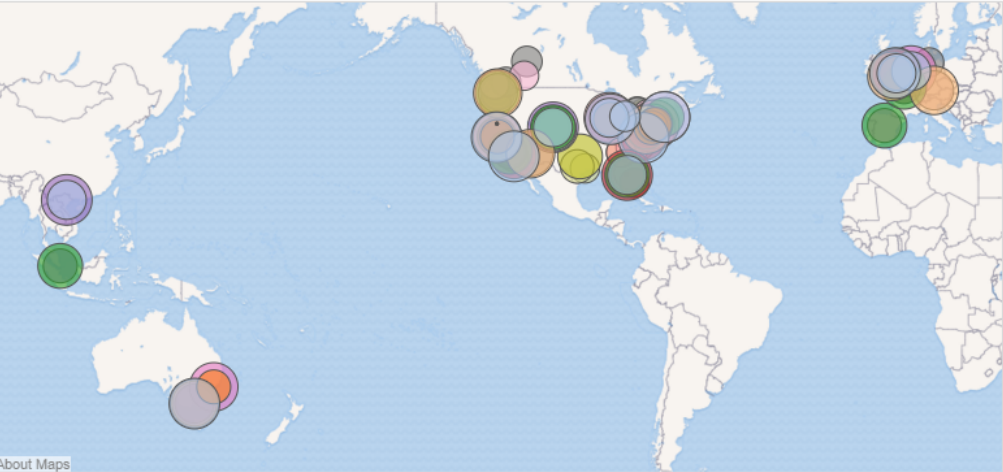
Functional View



————— What can we do once we get there? —————

Portfolio Opportunity Analysis

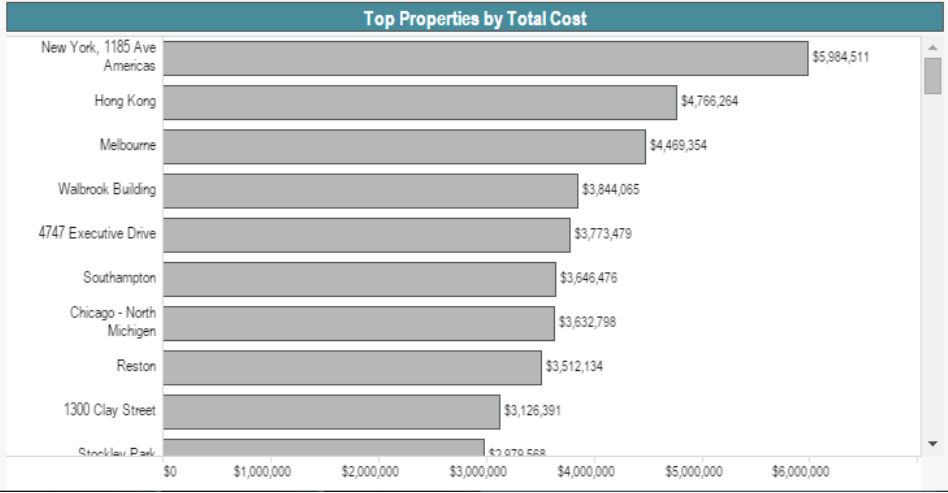
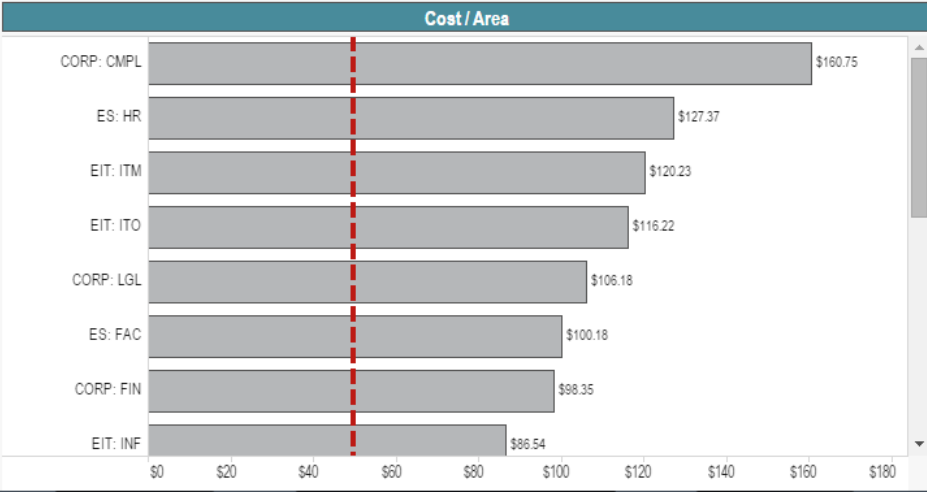
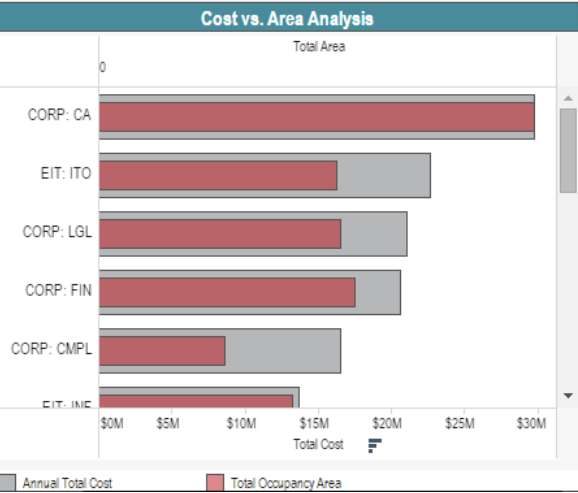
# Properties	Annual Total Cost	Total Occupancy Area	Cost / Area
98	\$120.46M	2.43M	\$49.61



About Maps

Null CORP: CA CORP: CMPL CORP: FIN CORP: LGL CORP: PROC EIT: ITM

Summary				
Dimension	# Properties	Annual Total Cost	Total Occupancy Area	Cost / Area
CORP: CA	14	\$29,795,672	356,166	\$83.66
CORP: FIN	7	\$20,633,491	209,790	\$98.35
CORP: LGL	8	\$21,025,333	198,024	\$106.18
EIT: ITO	8	\$22,653,777	194,916	\$116.22
RET: RMGT	14	\$12,128,681	190,472	\$63.68
RET: AR	14	\$12,091,490	169,298	\$71.42
ES: OFF	7	\$13,614,340	167,602	\$81.23
EIT: INF	7	\$13,719,318	158,534	\$86.54
RET: STRA	13	\$6,920,853	152,042	\$45.52
RET: SUPL	11	\$6,556,559	118,440	\$55.36
RET: RSPT	11	\$6,537,841	117,124	\$55.82
CORP: CMPL	7	\$16,486,923	102,564	\$160.75
ES: FAC	4	\$7,670,240	76,564	\$100.18
EIT: ITM	3	\$8,860,428	73,696	\$120.23





Cost and Vacancy

99

Properties

\$286,968,791

Annual Total Cost

9,030,661

Total Portfolio Area

\$31.78

Cost / SF

17 %

Vacancy

8 %

Target Vacancy

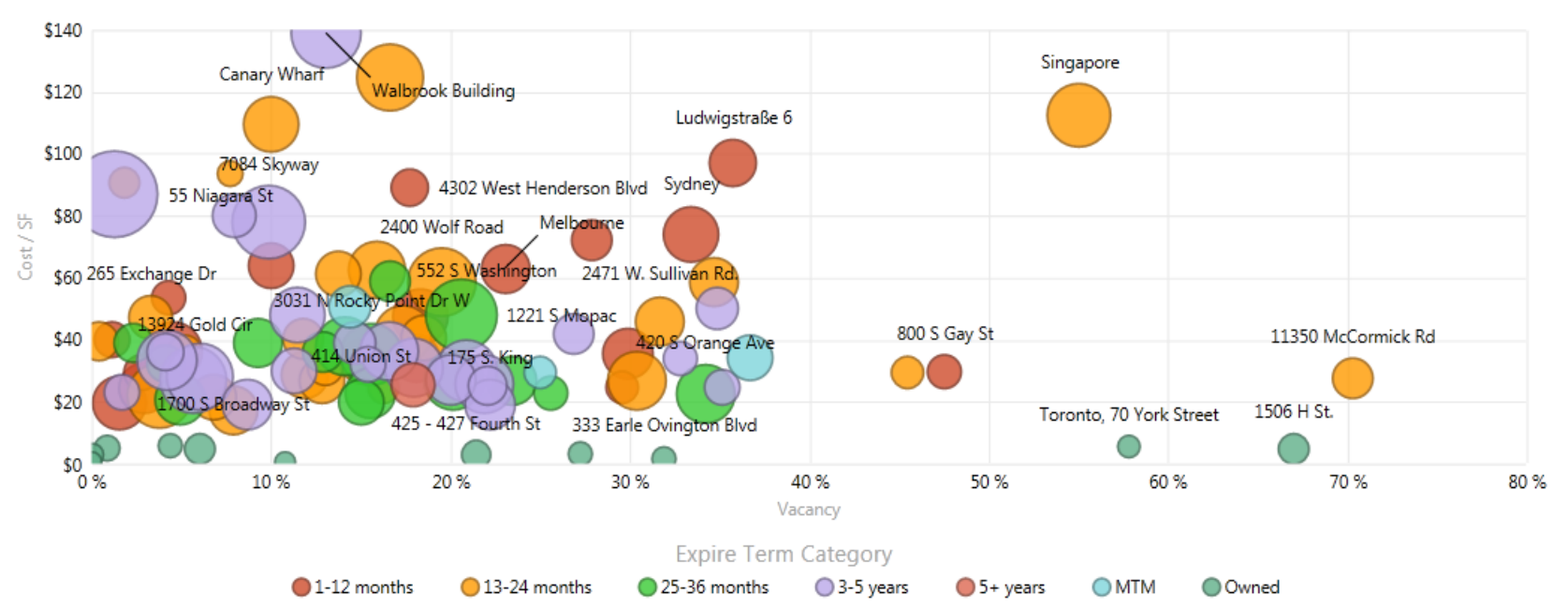
Click 'Yes' above to filter page to sites above portfolio Cost/SF and Target Vacancy

Cost and Vacancy Opportunity

No

Yes

Vacancy % vs. Cost/SF and Total Annual Cost



Site Details

Property Name	City, State	Country	Property SF	Cost / SF	Vacancy	Annual Cost of Excess Vacancy ▼	Annual Cost of Excess Vacancy %	SF / Workspace
Singapore	Singapore, Singapore	Singapore	51,948	\$112.50	55 %	\$2,985,598	51 %	519
11350 McCormick Rd	Hunt Valley, MD	USA	72,073	\$27.63	70 %	\$1,348,198	68 %	302
420 S Orange Ave	Orlando, FL	USA	204,711	\$22.80	34 %	\$1,329,194	28 %	279
Sydney	Sydney, Australia	Australia	58,164	\$74.00	33 %	\$1,185,197	28 %	646
330 W College Ave	Appleton, WI	USA	170,278	\$27.26	30 %	\$1,127,548	24 %	191

Filters

VIEW

Business

(All)

City Detail

(All)

Expire Term Category

(All)

Expire Year

(All)

Property SF

(All)

Property Vacancy

(All)

Region

(All)

Vacancy and Density



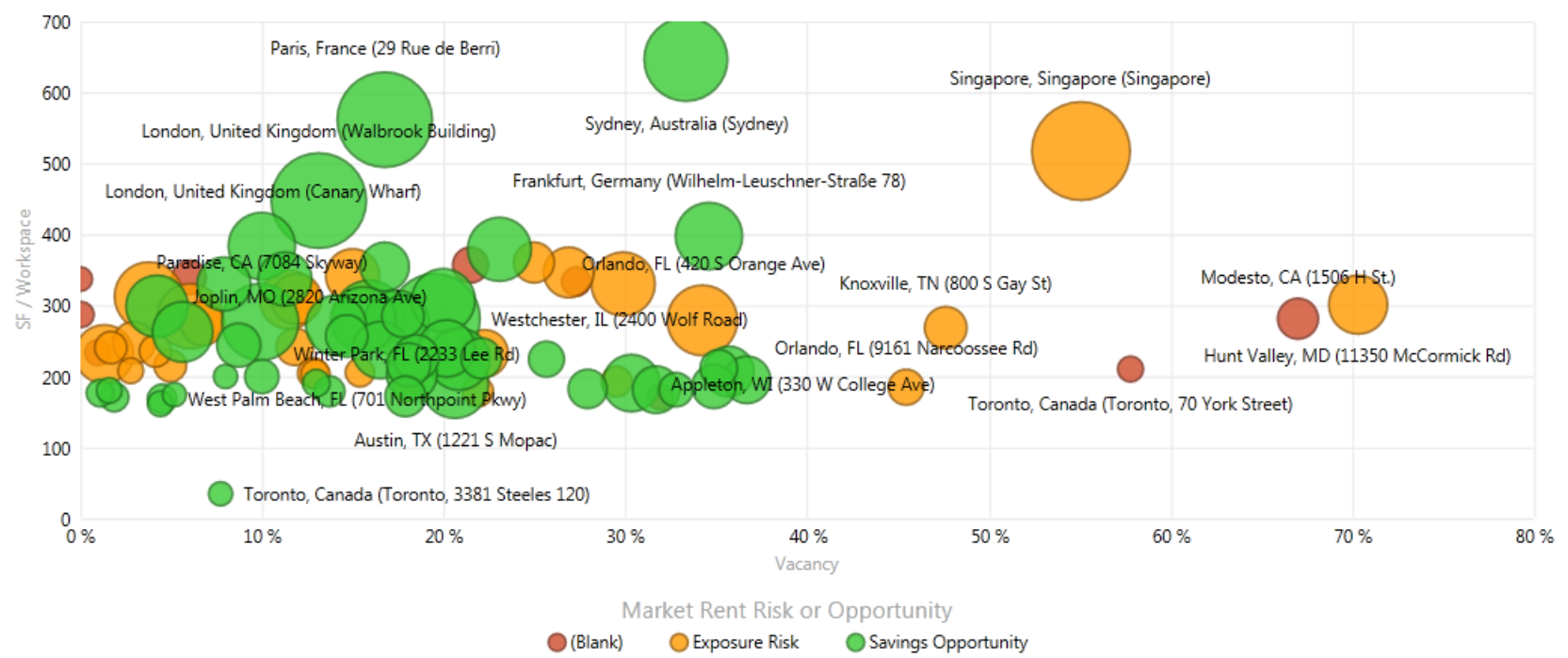
Filters

VIEW

- City Detail (All)
- Expire Term Category (All)
- Expire Year (All)
- Property SF (All)
- Region (All)

Combined Opportunity

\$90,268,892 Combined Savings Opportunity 31 % Total Savings Opportunity (%) 2,429,261 Excess Portfolio Area (Vacancy & Density) 27 % Excess Portfolio Area (%)



Savings Opportunity Detail *(expand at right)*

Property	Annual Total Cost	Expire Date	Combined Savings Opportunity ▼	Workspace Density Savings	Annual Cost of Excess Vacancy	Market Rent Opportunity ▲
Singapore, Singapore (Singapore)	\$5,844,150	3/27/2017	\$4,743,607	\$3,594,150	\$2,985,598	
Paris, France (29 Rue de Berri)	\$6,297,708	3/27/2017	\$4,430,860	\$4,056,708	\$593,262	
London, United Kingdom (Walbrook Building)	\$7,176,014	10/27/2018	\$4,371,666	\$3,979,014	\$393,392	

Cross Portfolio Analytics

UNDERSTAND THE STATE OF THE PORTFOLIO

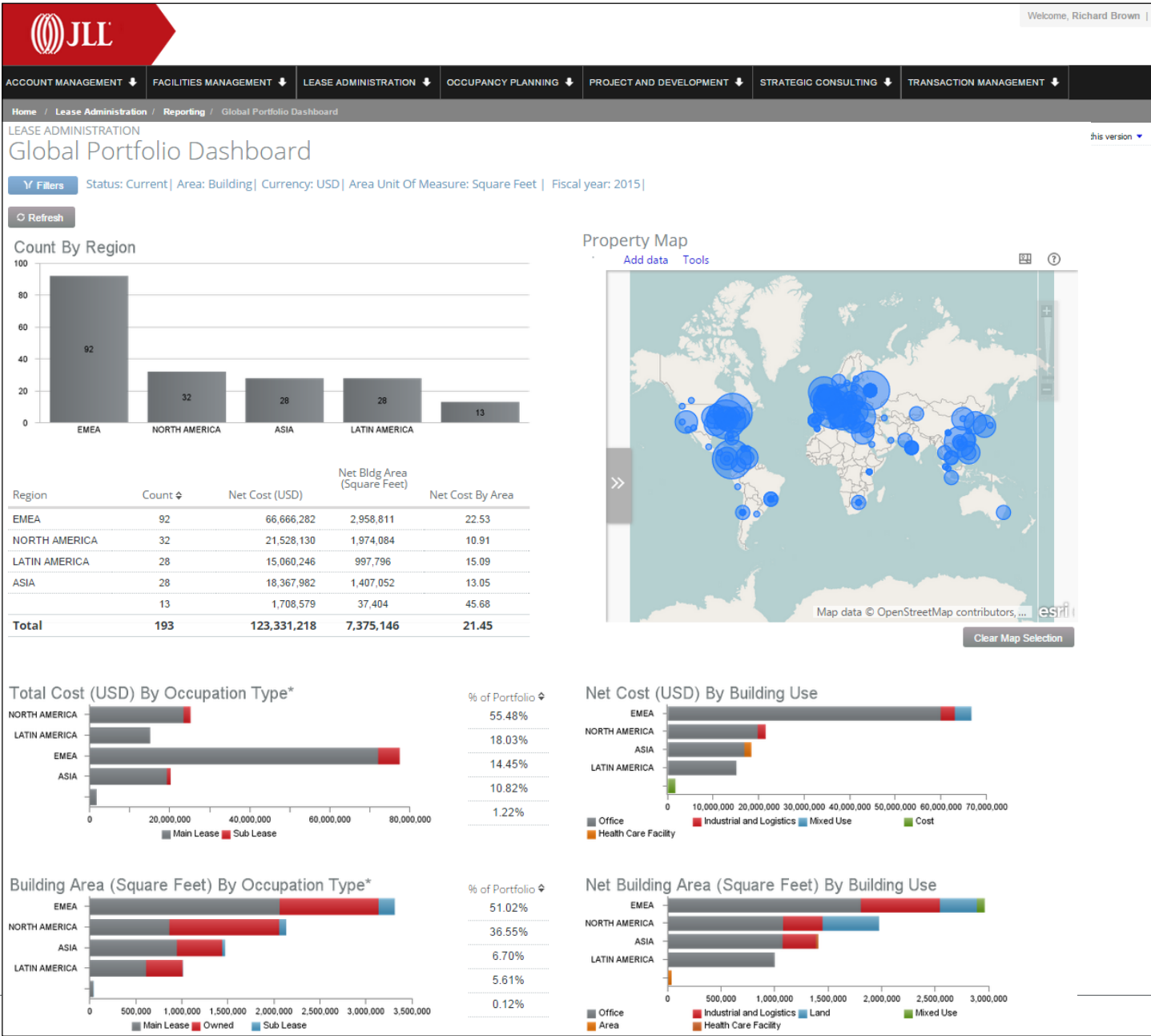
What do I have? Where is it? How much does it cost me?

SURFACE OPPORTUNITIES AND INSIGHTS

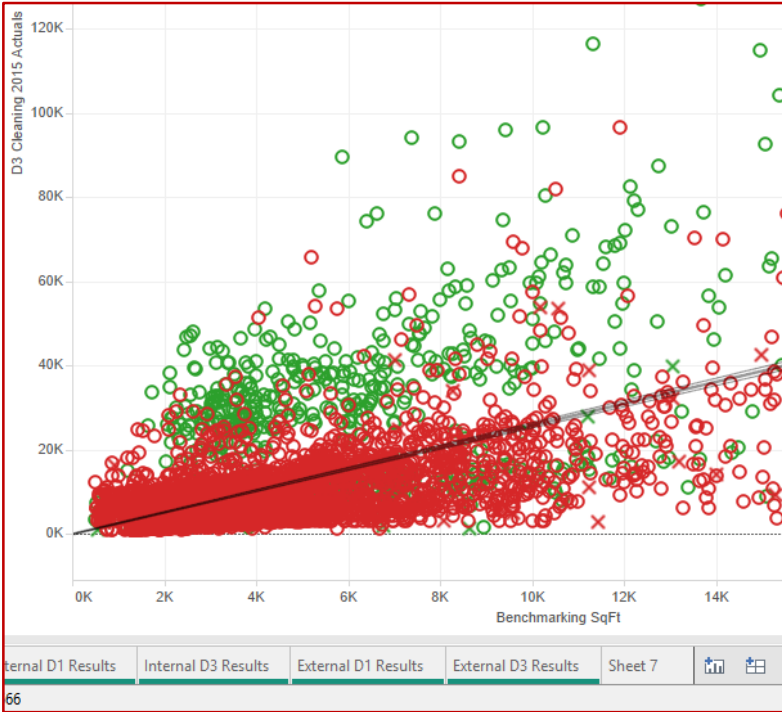
Which sites have high cost and high vacancy? Where is the portfolio performing below average? Where is productivity and engagement low?

INTEGRATED WITH RESEARCH DATA

Where do I have above or below market opportunities? Where are leases expiring in markets that are trending towards landlord favorability?



Benchmarking



Identified savings opportunities by benchmarking against site peer groups

Regression model to score actuals vs. peers and identify large unexplained variance

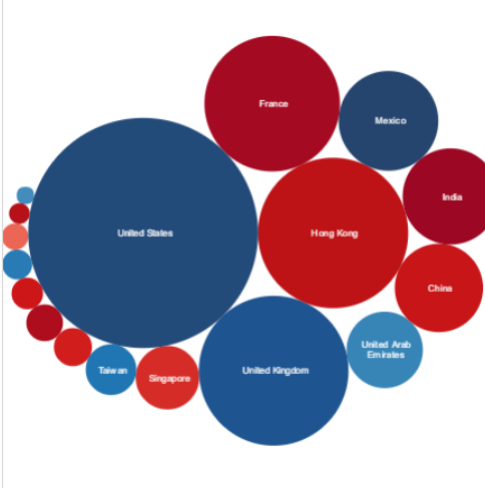
Addressing sites with high variances saved \$17+ million in first year

Internal	External	D1 Internal Unexplained Variance	D1 Internal R ²	D1 External Unexplained Variance	D1 External R ²	D1 2016 Projection Confirmation Rating	D3 Internal Unexplained Variance	D3 Internal R ²	D3 External Unexplained Variance	D3 External R ²	D3 2016 Projection Confirmation Rating
Yes		\$ 2,392,718.57	0.986553			Better +	\$ (112,711.25)	0.98872			Worse +
Yes	Yes	\$ 2,213,720.48	0.730089	\$ 2,853,053.77	0.837796	Worse +					Data Concerns 2015 Annual
Yes	Yes	\$ 1,898,905.46	0.784879	\$ 2,074,360.76	0.868727	Better +	\$ 106,288.09	0.913829	\$ 130,781.54	0.967307	Better +
Yes	Yes	\$ 1,681,852.07	0.730089	\$ 3,476,767.08	0.837796	Better +	\$ 271,606.59	0.83747	\$ (3,675,722.18)	0.732521	Worse +
Yes		\$ 883,872.89	0.930619			Better +	\$ (198,356.36)	0.908766			Better +
Yes	Yes	\$ 736,167.47	0.730089	\$ 1,015,668.14	0.837796	Worse +	\$ (6,917.39)	0.83747	\$ (621,587.76)	0.732521	Better +
Yes		\$ 692,905.18	0.97651			Better +	\$ (8,707.57)	0.933517			Better +
Yes	Yes	\$ 588,376.72	0.952453	\$ 334,126.27	0.773399	Worse +	\$ 242,020.57	0.92371	\$ 47,590.35	0.987876	Better +
Yes	Yes	\$ 574,139.83	0.730089	\$ 748,900.80	0.837796	Better +	\$ (10,424.91)	0.83747	\$ (394,754.54)	0.732521	Worse
Yes		\$ 547,980.21	0.97651			Better +	\$ 192,723.89	0.933517			Better +
Yes	Yes	\$ 405,021.90	0.838228	\$ 518,363.94	0.983251	Better +	\$ (21,134.12)	0.973605	\$ (714,389.18)	0.948343	Worse +
Yes		\$ 377,373.04	0.930619			Better +	\$ 435,640.35	0.908766			Better +
Yes	Yes	\$ 298,720.12	0.952453	\$ 316,556.97	0.691519	Better +	\$ 106,204.71	0.92371	\$ 107,847.89	0.842276	Worse +
Yes	Yes	\$ 292,555.95	0.80512	\$ 210,744.60	0.691519	Better +	\$ 164,314.87	0.792761	\$ 128,934.04	0.842276	Worse +
Yes	Yes	\$ 284,384.64	0.784879	\$ 513,788.65	0.913496	Better +	\$ 219,569.86	0.913829	\$ 294,540.55	0.948139	Worse +
Yes	Yes	\$ 252,175.37	0.784879	\$ 429,480.44	0.946421	Better +	\$ (3,151.47)	0.913829	\$ 68,023.76	0.790532	Better +
Yes		\$ 242,240.90	0.821939			Better +	\$ 285,829.78	0.859362			Better +
Yes		\$ 227,909.56	0.986553			Better +	\$ 25,164.89	0.98872			Worse +
Yes		\$ 185,482.74	0.97651			Better +	\$ (9,565.67)	0.933517			Worse
Yes	Yes	\$ 174,697.61	0.80512	\$ 174,629.64	0.813103	Better +	\$ 169,618.73	0.792761	\$ 169,631.90	0.97107	Worse +
Yes		\$ 168,295.35	0.986553			Better +	\$ 72,025.82	0.98872			Worse +
Yes		\$ 155,370.93	0.838228			Data Concerns 2016 Q1	\$ 10,544.55	0.973605			Data Concerns 2016 Q1
Yes	Yes	\$ 143,816.37	0.82412	\$ 107,458.83	0.91197	Worse +	\$ 94,758.94	0.87849	\$ 59,978.94	0.972186	Better +
Yes		\$ 143,050.57	0.986553			Better +	\$ 273,480.86	0.98872			Worse +
Yes	Yes	\$ 136,553.37	0.82412	\$ 100,062.07	0.832598	Worse +	\$ 72,305.96	0.87849	\$ 47,159.40	0.883246	Worse +
Yes	Yes	\$ 132,242.73	0.82412	\$ 104,615.80	0.832598	Worse +	\$ (10,989.68)	0.87849	\$ (30,027.70)	0.883246	Worse +
Yes	Yes	\$ 122,241.15	0.80512	\$ 107,475.22	0.691519	Better +	\$ 169,480.47	0.792761	\$ 163,094.67	0.842276	Worse +
Yes		\$ 106,837.10	0.885259			Better +	\$ 27,849.68	0.961576			Worse +
Yes	Yes	\$ 100,744.83	0.80512	\$ 84,624.49	0.691519	Worse +	\$ (31,170.40)	0.792761	\$ (38,141.94)	0.842276	Data Concerns 2015 Q1
Yes	Yes	\$ 93,049.29	0.952453	\$ (185.65)	0.773399	Better +	\$ 81,949.70	0.92371	\$ 10,651.14	0.987876	Better +
Yes	Yes	\$ 92,038.24	0.952453	\$ (1,096,922.53)	0.773399	Worse +	\$ 715,483.31	0.92371	\$ (193,737.93)	0.987876	Worse +
Yes		\$ 90,611.62	0.783569			Better +	\$ 30,570.39	0.936766			Better +
Yes		\$ 85,485.48	0.946676			Data Concerns 2016 Q1	\$ 16,672.88	0.937723			About the same

Summary



Country - Hover for detail, click country to filter data, click again to remove filter.



Detail - Hover on country and click + to see sites, hover on sites, click + to see Cost Categories. Minus sign to go back. Hover on bar to see more details e.g. sites IDs.

