



shaping tomorrow with you

Belmont, MA

Board Ready Study - Financial Pro Forma Analysis

Summary of Updates



- Reduce mainline trenching to zero; keep drop installation costs
 - Reduce pole make ready expenses to zero
 - Reduce brownfield make ready expenses to zero
 - Reduce ISP functions associated with customer services and billing by 80% (includes staff, tier 1 help desk, OSS/BSS)
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- **Objective:** Initial financial analysis into the viability of a stand-alone broadband business using a standard set of input parameters and provide go-no go decision input to customer board of directors
 - **Disclosure:** The data from this analysis is considered preliminary rough-order-of-magnitude (ROM) until additional field research is completed to better estimate inputs such as take rates and costs
 - **Approach:**
 - Use a standardized financial pro-forma for inputs gathered from the market assessment, customer supplied information and Fujitsu insights from past network deployments
 - Apply a Monte Carlo simulation model to understand a range of expected outcomes for key performance indicators (revenue, EBITDA, cash flow).
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Executive Summary



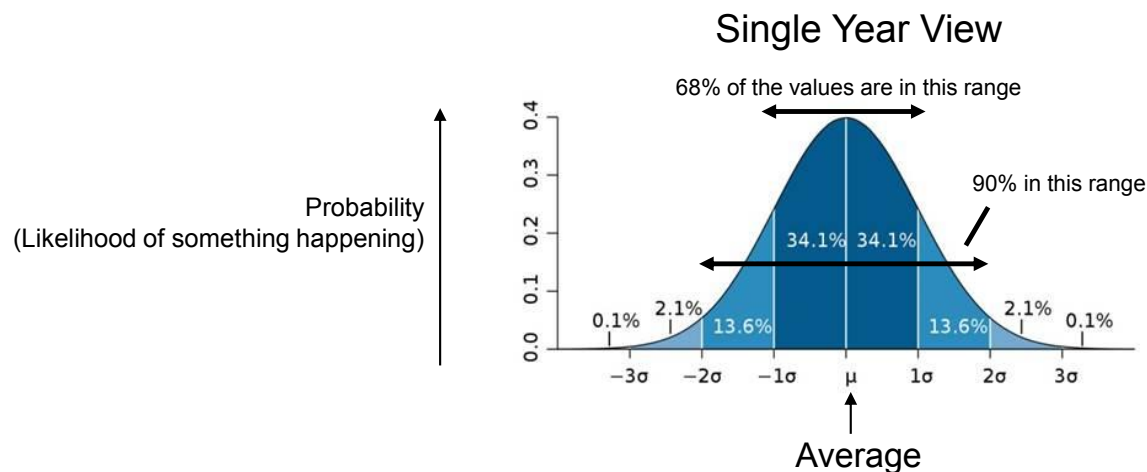
Using the middle take rate scenario (20~40%), post-construction years of operation, 90% confidence interval, Brownfield Data Center

KPI	Annual Value Range	Top Variation Contributors
Revenue	\$3.2M ~ \$4.9M	Residential take rate, tier pricing, customer-tier mix, Business take rate
OPEX	\$1.93M ~ \$2.25M Revised: \$0.88M ~ \$1.4M	Residential take rate, Churn, Business take rate
EBITDA	\$1.26M ~ \$2.68M Revised: \$2.3M ~ \$3.6M	Residential take rate, tier pricing, customer-tier mix
Construction (CAPEX)	\$27.6M ~ \$35.5M (Greenfield: \$27.7M ~ \$35.6M) Revised: \$14.3M ~ \$16.7M	Residential take rate, Business take rate
Cash Flow	-\$2.2M ~ -\$0.56M Revised: \$1.2M ~ \$2.6M	Residential take rate, tier pricing, Churn

Monte Carlo Simulation – Overview

■ What is Monte Carlo simulation?

- It is an estimation/optimization approach using software that allows us to model uncertainty for input variables (cost, price, etc)
- We model uncertainty based on assumed statistical parameters and simulate up to thousands of plausible scenarios to gain insights into the range of possible outcomes for cost, profit, time, etc.
- It is common that the range of values for a KPI appears like a normal distribution curve



- Most possible values occur near the average
- 68% and 90% ranges represent confidence intervals
- 90% is read as you would expect the KPI to fall in this range 90% of the time based on the model
- Depending on appetite for risk, focus on certain confidence interval (90% is most common)

Monte Carlo Simulation – Overview

■ Why is it important to use?

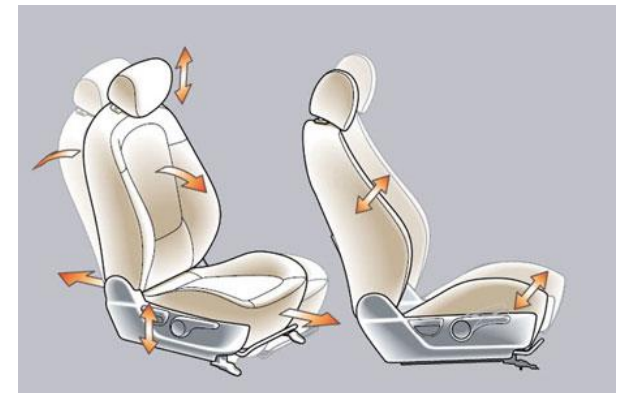
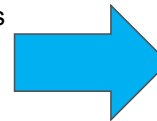
- Using averages as a single representation of a variable risks making a decision based on an unlikely outcome
- Strategically, a range of outcomes helps us to decide the overall attractiveness of a business case
- Tactically, simulation results help us focus on better controlling key variables whose variation that contribute the most to an outcome's variation

Analogy: Discoveries from Cockpit Design

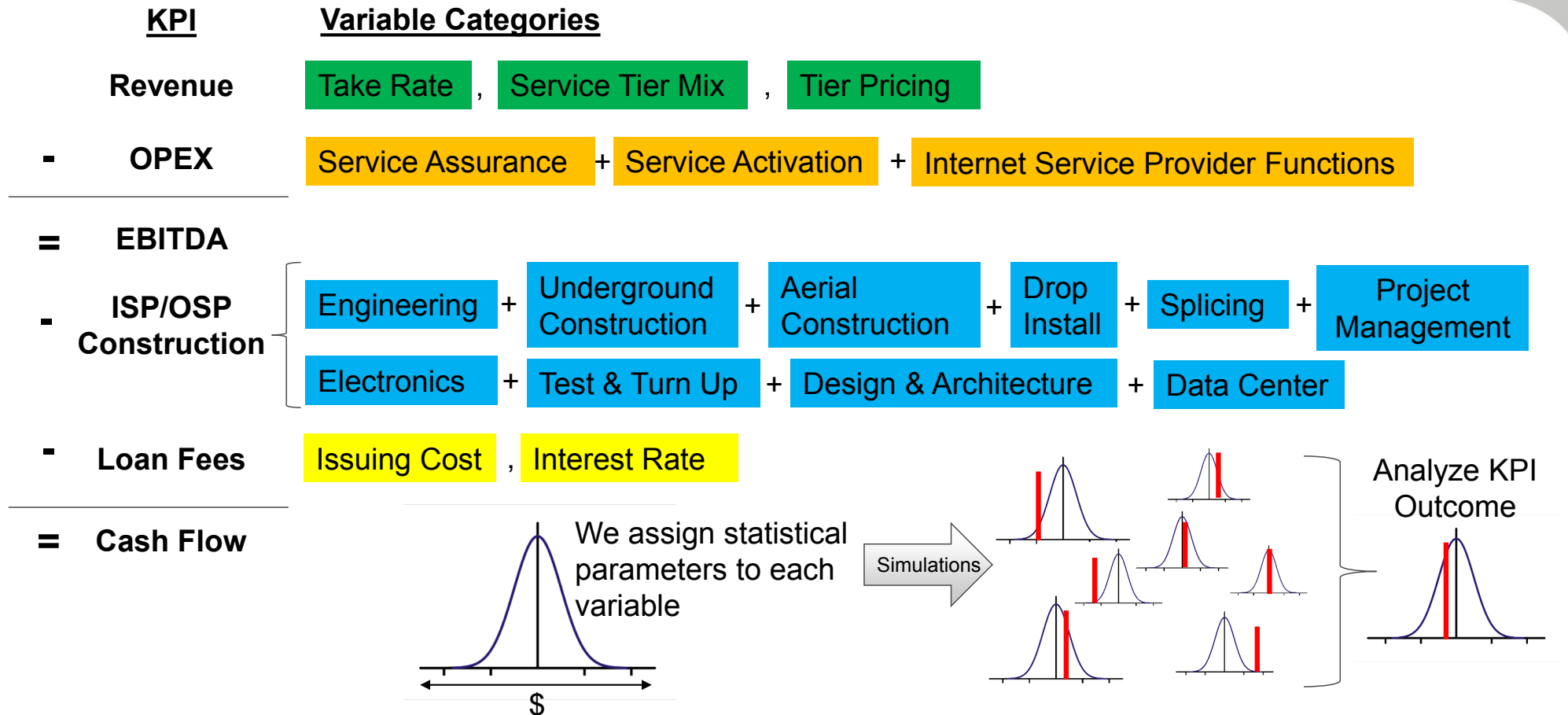


- Average pilot body measurements from 1926 used to design fighter plane cockpits in 1940's-50's
- High incidence rate of pilots crashing
- Studies eventually pointed towards cockpit configuration inadequate for pilots to reach controls
- Dozens of dimensions measured for 4,000 pilots; none fit the average measurement for all dimensions
- Cockpit needed to be suitable for 90% of people on all dimensions

Aircraft manufacturers ordered to design to a range of dimensions



Monte Carlo Simulation – Building Blocks



Scenario Overview



Main Presentation

Appendix

Scenario

1	2	3
Pessimistic	Middle	Optimistic
	Brownfield	

5
Middle
Greenfield

Take Rate Range

Data Center

For comparison vs Brownfield Middle only

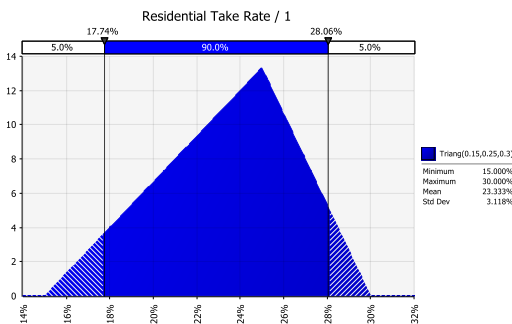
Key Parameters Used for Take Rate

Existing Verizon Fios Fiber Offering Presents Differentiation Challenge to Belmont Market Share



Simulation	Take Rate Scenarios		
	Pessimistic	Middle	Optimistic
	1	2	3
Residential Min	15%	20%	20%
Residential Most Likely	25%	30%	35%
Residential Max	30%	40%	55%

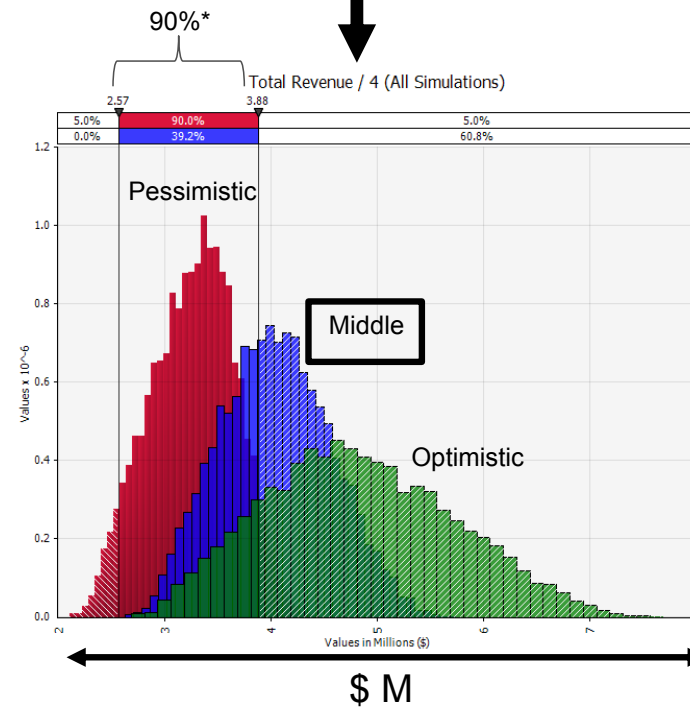
Cited in Executive Summary



(Left): Using minimum, most likely and maximum parameters, we can apply a probability distribution of take rate values. The pessimistic scenario values are shown

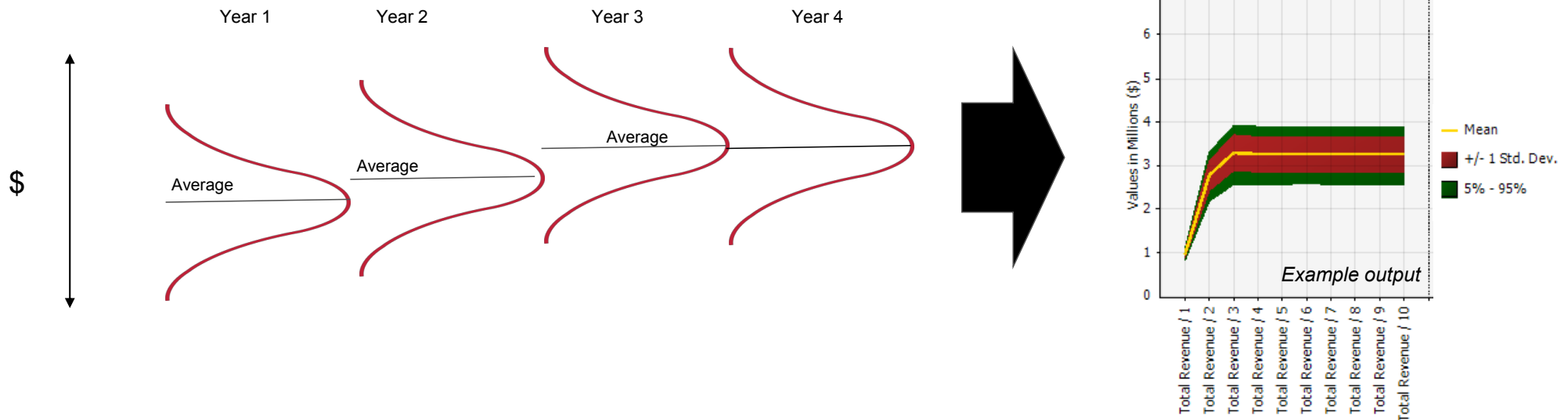
Key Takeaways

- Each scenario has a different min, most likely, max take rate profile to demonstrate the different risk profiles to total revenue
- Simulation pictured on right shows revenue results for year 4, the first full year of operations following completed construction
- The pessimistic scenario has a small range for revenue at a 90% confidence interval due to a smaller range between the min and max take rate
- Within each scenario, there is a list of several other key assumptions/parameters that will be applied consistently towards 10,000 simulations to gain insight into the range of outcomes



Probability Use confidence intervals* to capture range of outcomes

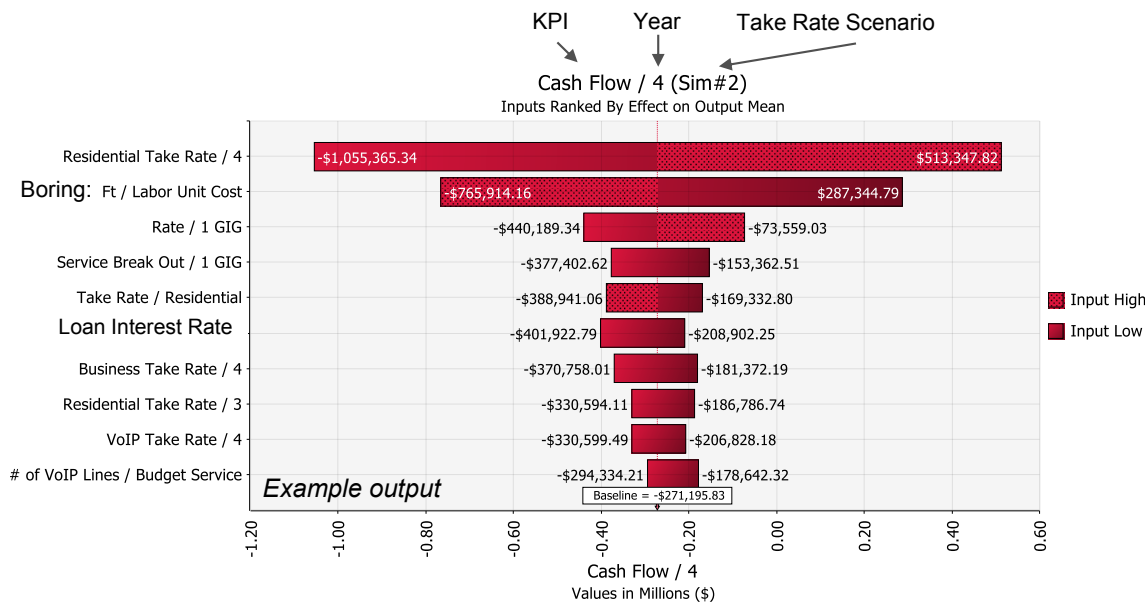
Output Analysis for a KPI



- This chart combines several probability curves into a time series
- The average value is less important to know than the range of values surrounding the average
- While the curves are centered on their mean value, use the 1 standard deviation range to understand where the expected value will be 68% of the time
- Use the 2 standard deviation range to understand where the expected value will be 90% of the time

Variation Contribution Analysis for a KPI

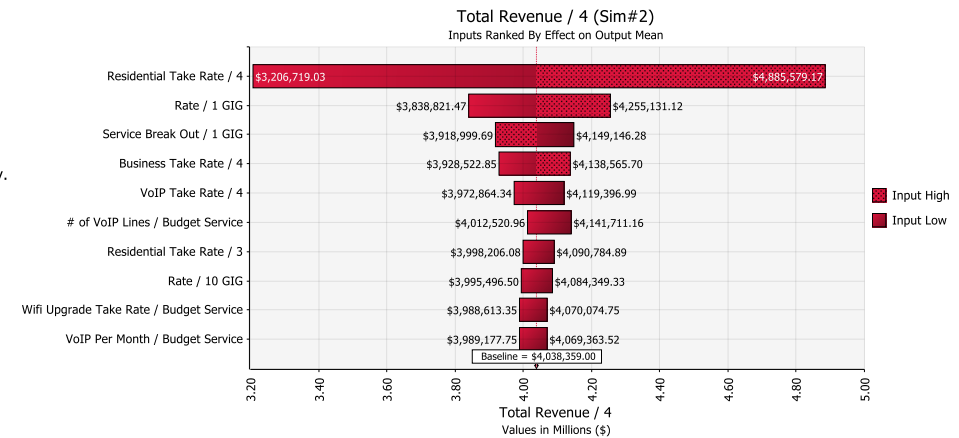
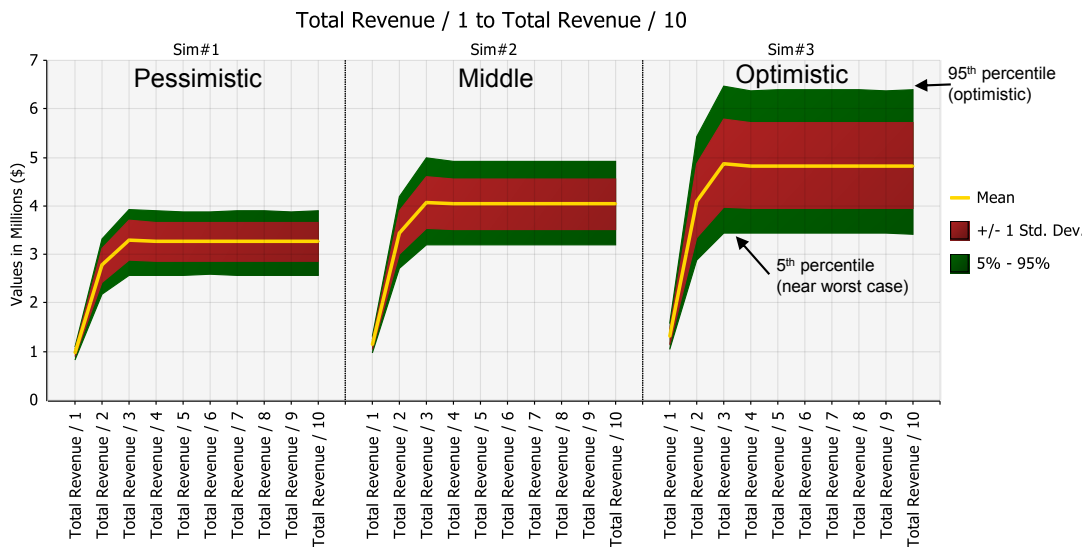
Introducing Tornado Charts



- High values for revenue-impacting variables push KPI to the right (opposite for cost-impacting variables)
- Low values for revenue-impacting variables push KPI to the left
- Focus on controlling and fine-tuning most impactful variables in further estimations and during execution

Fine-tuning the impacting variables involves high-level engineering design, site visits, vendor quotations, etc.

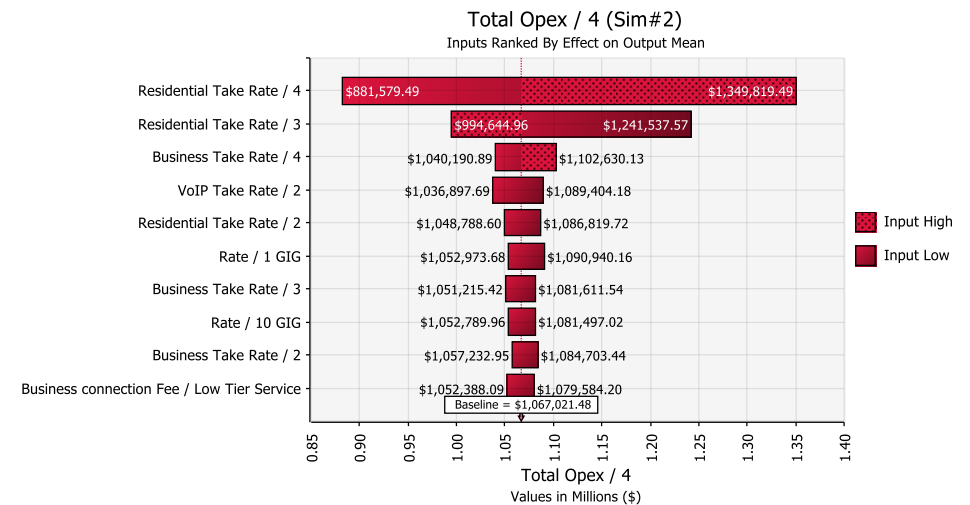
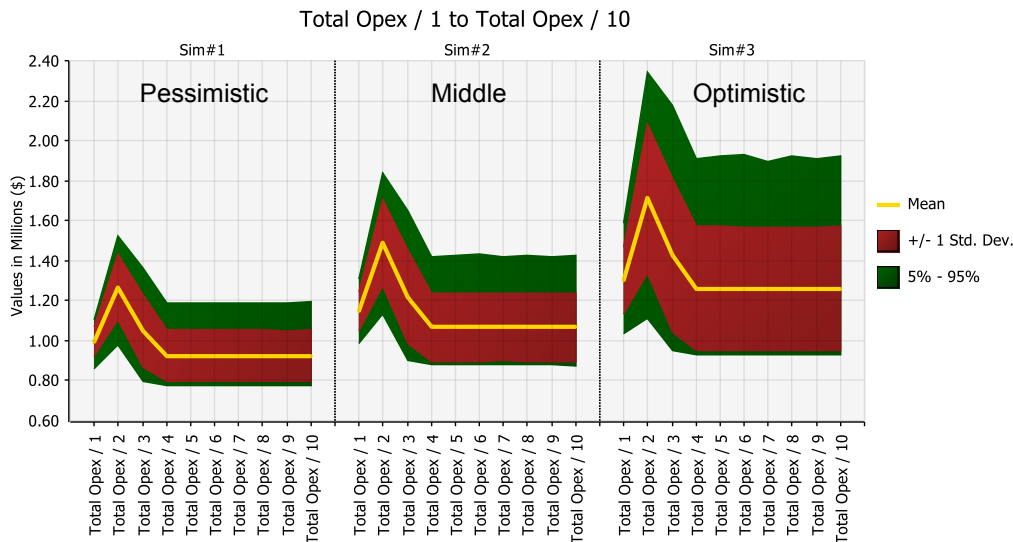
Revenue Overview – Years 1 through 10



- Following construction years (years 1~3), annual revenue can vary between \$2.7M and \$6.5M (90% confidence interval), depending on the take rate scenario analyzed.
- Middle scenario of 20~40% take rate results in a range of \$3.2M and \$4.9M

- Years 4 and beyond share a similar tornado chart pattern for which variables contribute to the greatest variation in annual revenue
- Holding all other variables constant, the residential take rate variation in the year of study can impact total revenue by \$1.7M using \$4M as baseline
 - Upside: \$4.9M (40% take rate)
 - Downside: \$3.2M (20% take rate)

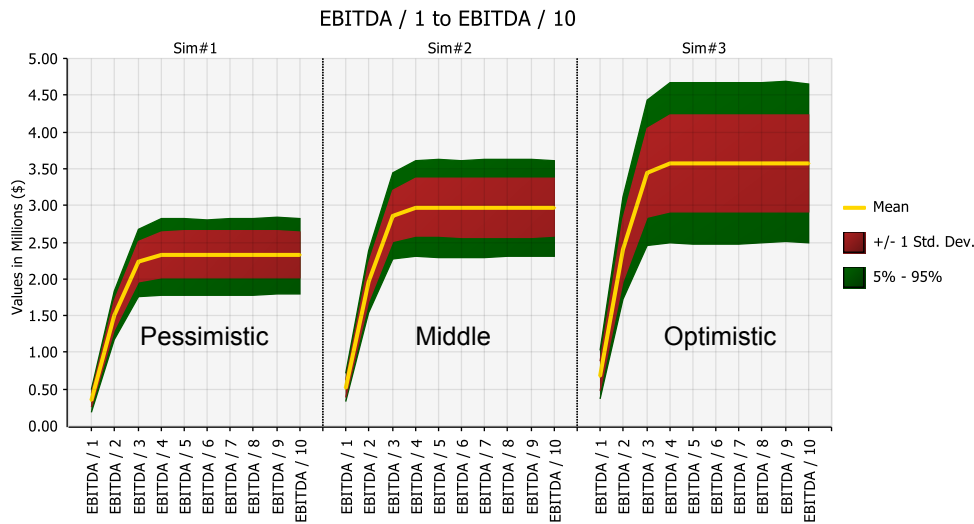
OPEX Overview – Years 1 through 10



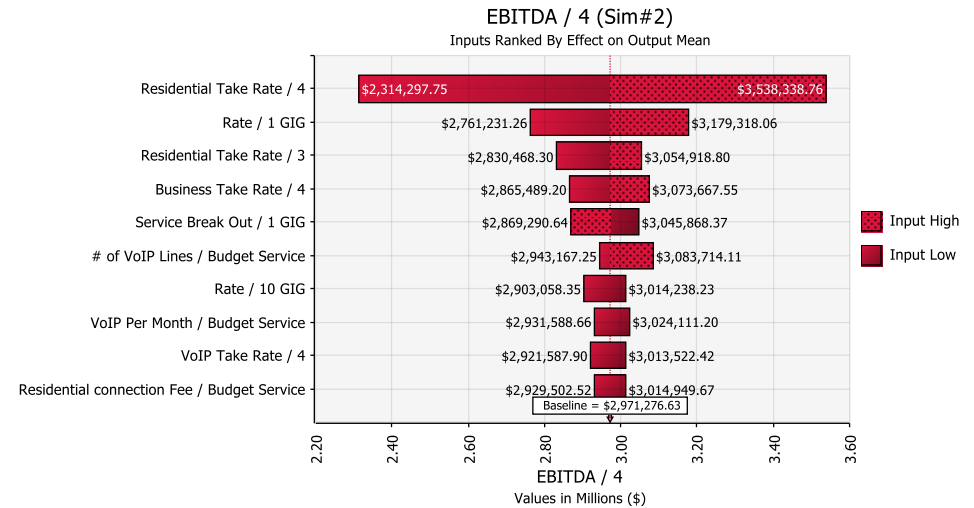
- Pattern update: Connection costs incurred heavily during initial customer activation in years 1-3, then settling down to steady state years 4 and later
- Middle scenario: \$0.88M ~ \$1.42M per year

- Years 4 and beyond share a similar tornado chart pattern for which variables contribute to the greatest variation in annual OPEX
- Holding all other variables constant, the residential take rate variation in the year of study can impact total OPEX by ~\$400K
 - Because we are modeling a minimum amount of customer churn year to year (regardless of whether total customer counts increase or decrease), the change in take rate between year 4 and previous years impacts customer activation costs

EBITDA Overview – Years 1 through 10



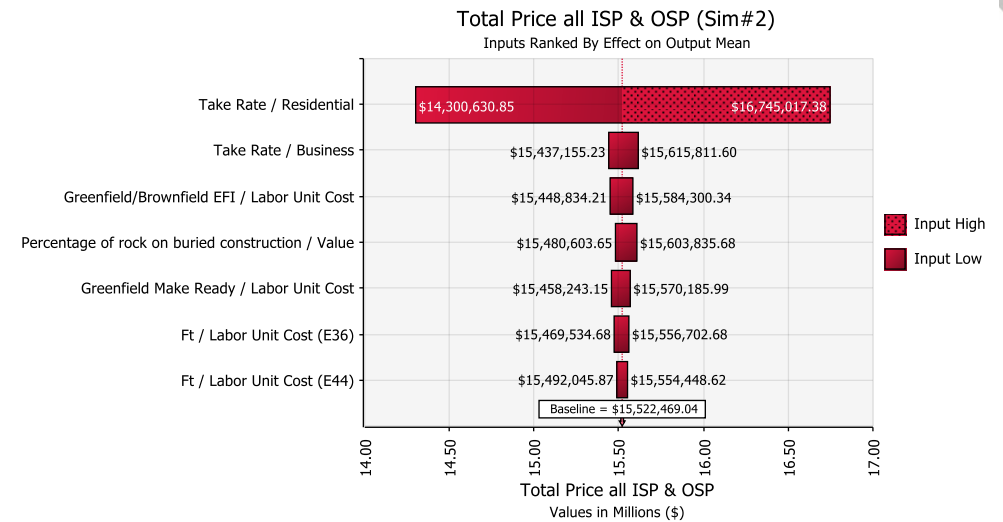
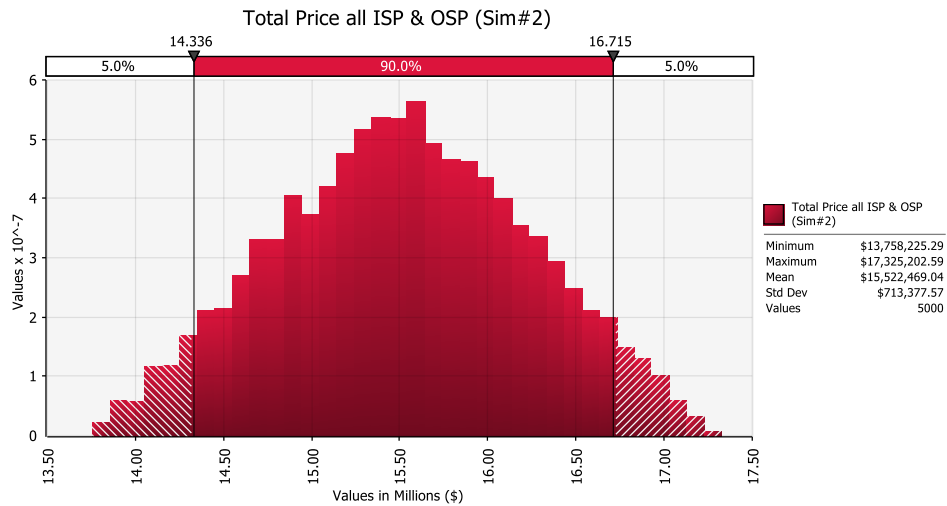
- Middle scenario: \$2.3M ~ \$3.6M per year



- Years 4 and beyond share a similar tornado chart pattern for which variables contribute to the greatest variation in annual EBITDA
- Holding all other variables constant, the residential take rate variation in the year of study can impact total revenue by \$1.2M
- The 1Gig monthly price and residential churn are the second- and third-most impactful to EBITDA variation

Construction Cost Overview

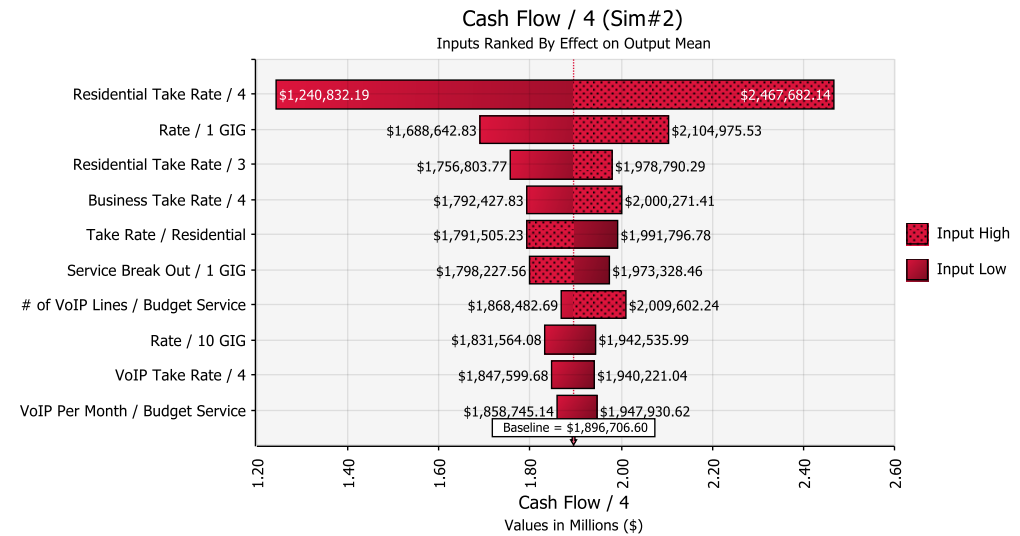
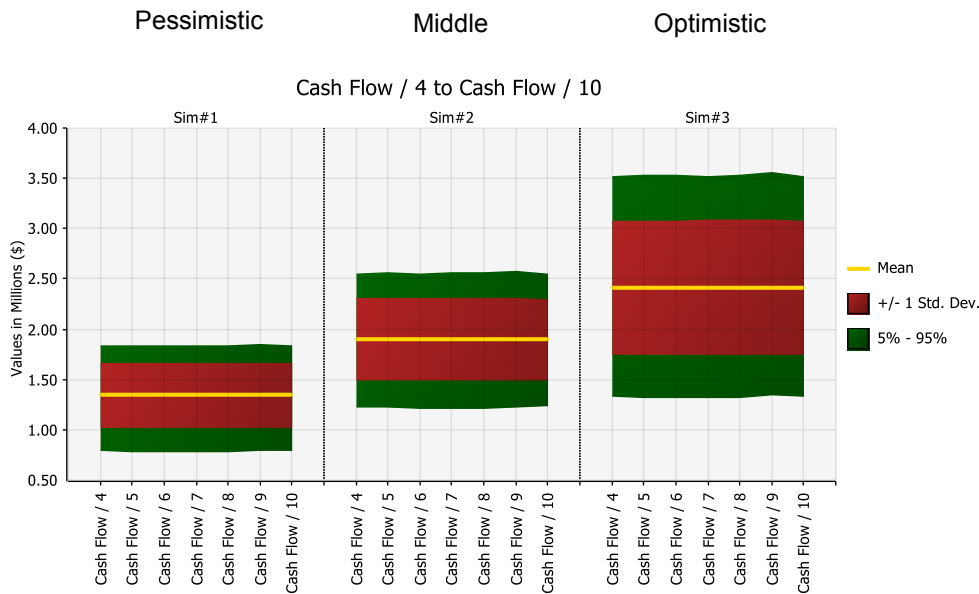
With Brownfield Data Center



- Based on the given assumptions, construction costs for inside and outside plant will be between:
 - \$14.3M and \$16.7M (90% confidence interval)
 - \$14.7M and \$16.3M (68% confidence interval)
- Most likely, costs will occur within the 68% CI, however due to cost uncertainty, we study the tornado graph for variation contribution

- After reducing the need for trenching/boring/rock adder significantly, those cost inputs contribute to minimal variation
- Residential and business take rates are now the main driver to construction cost variation, followed by Data Center EFI (Engineer/Furnish/Install)

Cash Flow Overview – Years 4 through 10



- Middle take rate scenario ranges from \$1.2M ~ \$2.55M per year
- Updated assumptions to OPEX and CAPEX now result in 100% likelihood positive cash flow in years 4 and later

- Years 4 and beyond share a similar tornado chart pattern for which variables contribute to the greatest variation in annual cash flow
- Holding all other variables constant, the residential take rate variation in the year of study can impact total revenue by \$1.3M
- 1 Gbps pricing and residential churn contribute the next largest amount of variation to cash flow.

- Detailed assumptions & parameters
 - Current competitor pricing for new customers
 - Greenfield Data Center Construction Cost Results
-

Detailed Assumptions & Parameters



Take Rates* & Churn

Take Rate:		Minimum	Most Likely	Maximum
Residential	Business	20%	30%	40%
	Business	25%	35%	45%
	VoIP	15%	25%	35%
Wifi Upgrade Take Rate		40%	45%	50%

VoIP Lines per Residential (80% = 1; 20% = 2)
VoIP Lines per Business (80% = 2; 20% = 3)

Churn: Take rate varies year to year according to parameters stated above. Estimate 5% of customer count every year represent new customers (requires service activation & connection fee).

*Note: Middle take rate scenario displayed for residential

Service Tiers and Pricing

Residential Service:		Minimum	Most Likely	Maximum
Data Services Rate				
Budget Service		\$45	\$50	\$55
1 GIG		\$70	\$80	\$90
10 GIG		\$120	\$130	\$140
Service Breakout				
Budget Service		5%		
1 GIG		75%	80%	90%
10 GIG		8%		
Connection Fee				
		\$90	\$100	\$110
Wifi Upgrade Fee				
		\$4.50	\$5	\$5.50
Wifi Upgrade Take Rate				
		40%	45%	50%
VoIP Price per Month				
		\$12.00	\$15.00	\$18.00
# of VoIP Lines per Customer				
		1.0		2.0

Business Service:		Minimum	Most Likely	Maximum
Data Services Rate				
Low Tier Service		\$80	\$90	\$100
1 GIG		\$120	\$130	\$140
10 GIG		\$160	\$170	\$180
Service Breakout				
Low Tier Service		5%		
1 GIG		75%	80%	90%
10 GIG		0%		
Connection Fee				
		\$100	\$150	\$200
Wifi Upgrade Fee				
		\$4.50	\$5	\$5.50
Wifi Upgrade Take Rate				
		40%	45%	50%
VoIP Price per Month				
		\$22.50	\$25.00	\$28.00
# of VoIP Lines per Customer				
		2.0		3.0

Loan Terms

Loan:		Minimum	Most Likely	Maximum
Interest Rate		2.38%	2.64%	3.25%

Most Likely rate is 30 year treasury rate
Loan is paid off in 20 years
Issuing cost is 1% of loan value

Infrastructure Context

The total number of addresses with in the Project area	11324			
Combined Take Rate	40%			
	Feet	Miles		
Total number of feet to be designed for the project	889,787	168.52		
	% OH	Aerial	Underground	% UG
Percentage OH/UG and quantity of feet to be constructed OH/UG	62%	548,775	341,012	38%
	Value			
Number of Utility Poles	4713			
Average span distance between poles	116			
% Poles requiring Communication space make ready	0%			
% Poles requiring light power make ready	0%			
% Poles requiring change outs or heavy make ready in power space	0%			
Average span distance between vaults	172			
Percentage of rock on buried construction	45%			

Total residential and business customers reported to EIA

Removed all mainline; Kept drop installation

Minimum: 20%
Most Likely: 40%
Maximum: 75%

Removed

Construction completion rate

- Year 1 = 38%
- Year 2 = 44%
- Year 3 = 18%

Business Model

- The Broadband business has its own dedicated staff, fleet, phones, legal entity, operations/business systems etc.
- No pole attachments
- Reduced staff, customer service & billing expenses by 80%**
- Marketing budget is assumed to be 3% of annual revenue

	Minimum	Most Likely	Maximum
Pole Attachment Fees	\$8.30	\$14.50	\$22.00
Boring Price per Foot	\$25.00	\$38.00	\$57.00
Rock Adder Price per Foot	\$10.00	\$12.00	\$15.00
Greenfield Structure	\$10,000	\$10,000	\$10,000
Brownfield Make Ready	\$38,000	\$63,000	\$95,000
Brownfield/Greenfield EPI	\$214,000	\$252,000	\$290,000
Greenfield Make Ready	\$31,000	\$44,000	\$63,000

Competitor Broadband-Only Monthly Pricing



Competitor Pricing / Download Speed	60 Mbps	100	150	250	300	400	1000	2000
Verizon Fios		\$40			\$60		\$80	
Comcast Xfinity (1st year)	\$30 ~ 35		\$45	\$55		\$65	\$75	\$300
Comcast Xfinity (after 1st year)	\$75		\$90	\$95		\$100	\$105	\$300

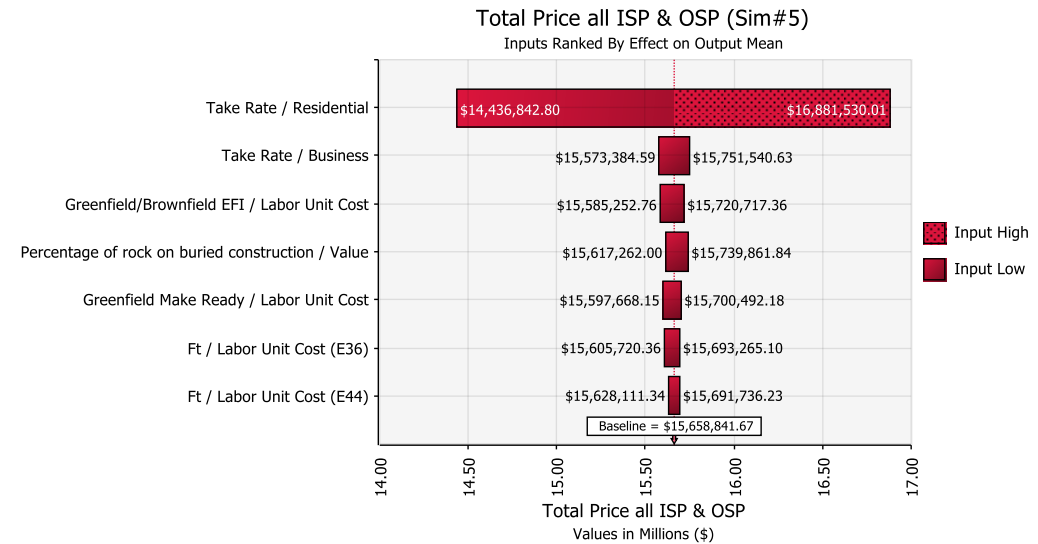
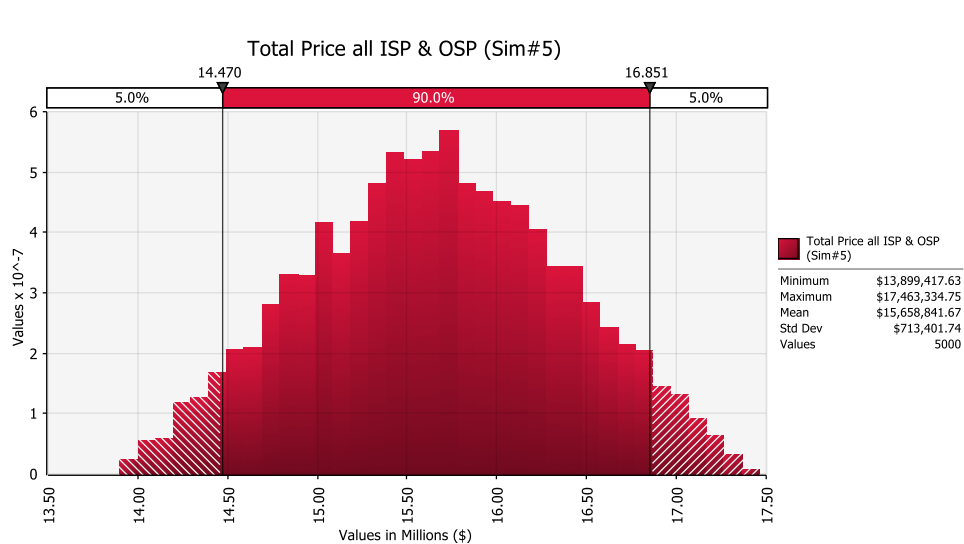
*Note: For new customers only; does not include rates for current customers or promotional campaign discounts

Verizon Fios 1,000 Mbps price guaranteed for 3 years

Comcast Xfinity 2,000 Mbps 2-year price lock possible

Construction Cost Overview

With Greenfield Data Center Scenario



- Based on the given assumptions, construction costs for inside and outside plant will be between:
 - \$14.5M and \$16.9M (90% confidence interval)
 - \$14.9M and \$16.4M (68% confidence interval)
- Most likely, costs will occur within the 68% CI, however due to cost uncertainty, we study the tornado graph for variation contribution

- Like that of the brownfield data center scenario, residential and business take rates are responsible for the majority of possible variation in construction costs, followed by data center EFI costs