Analyze NYSE Data

Project 2
Business Analyst Nanodegree
2 year forecast model
Using NYSE Dataset & Dynamic dashboards
To create forecast models for
IBM and Amazon

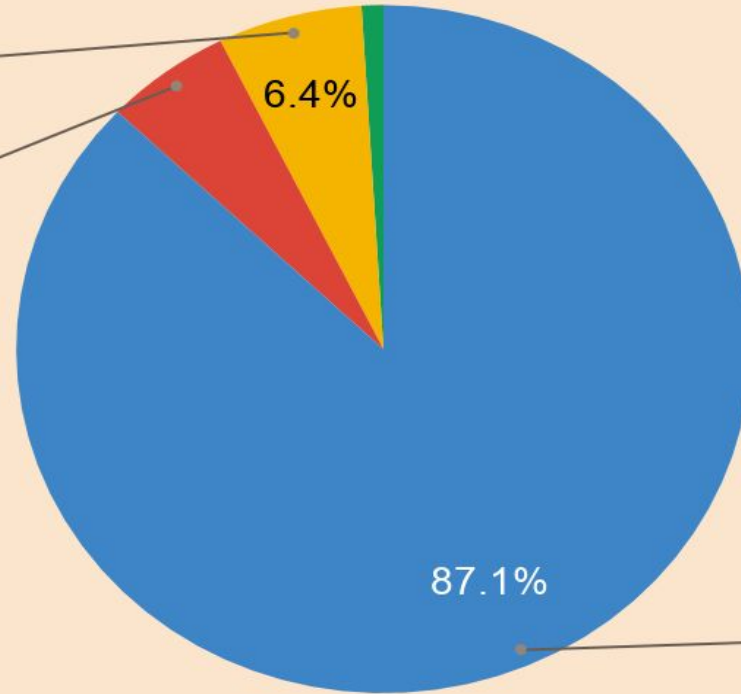Mean_total_revenue of Amazon GICS_sector/sub_industry companies

Consumer Discretionary/Internet & Direct Marketing Retail
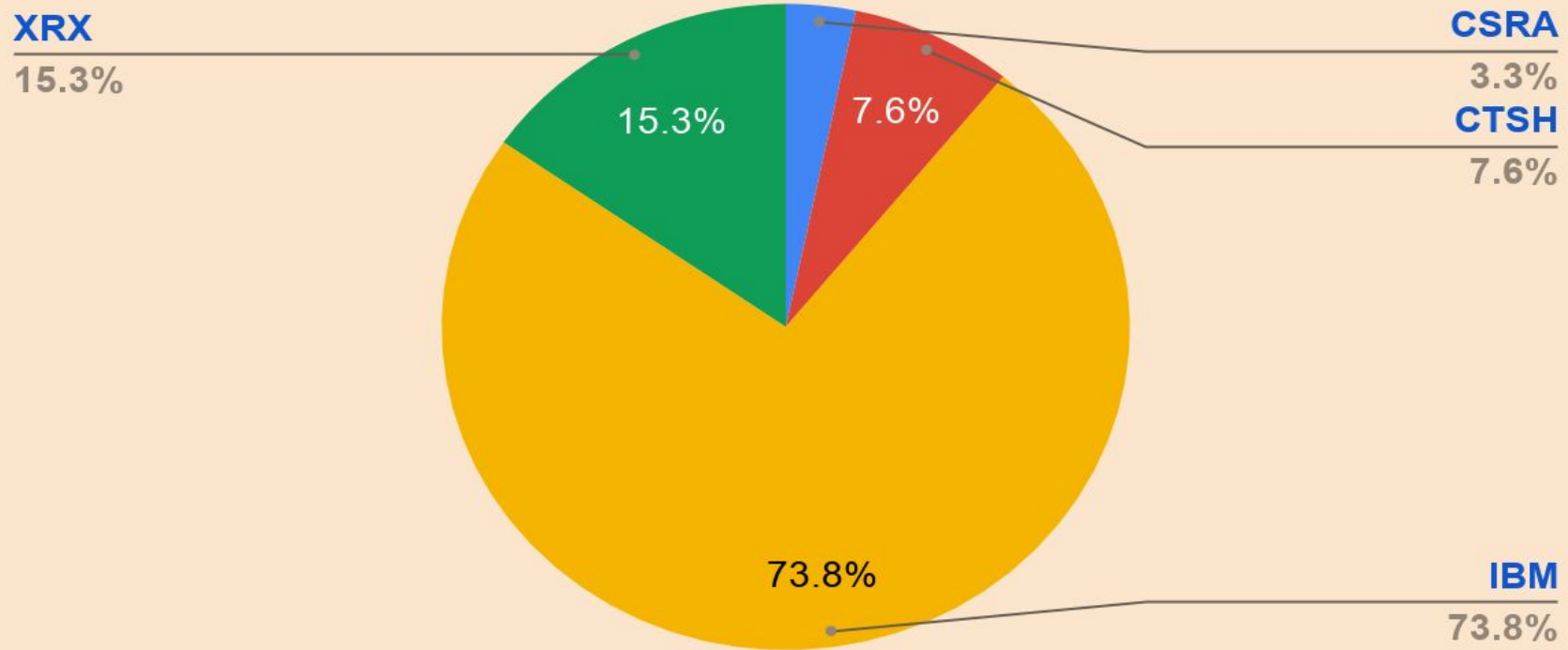
PCLN 6.4%

EXPE 5.6%

6.4%

87.1%

AMZN 87.1%

Mean_total_revenue of IBM GICS_sector/sub_industry companies for 4 years

Information Technology/IT Consulting & Other Services

XRX 15.3%

CSRA 3.3%

CTSH 7.6%

IBM 73.8%

15.3%

7.6%

73.8%

3

AMZN_strong, AMZN_base and AMZN_weak Scenarios
Total_revenue

AMZN_strong_case ◆ AMZN_base_case ◆ AMZN_weak_case

Standard Deviation
$62,932,426,046
$55,023,967,755
$47,726,977,384
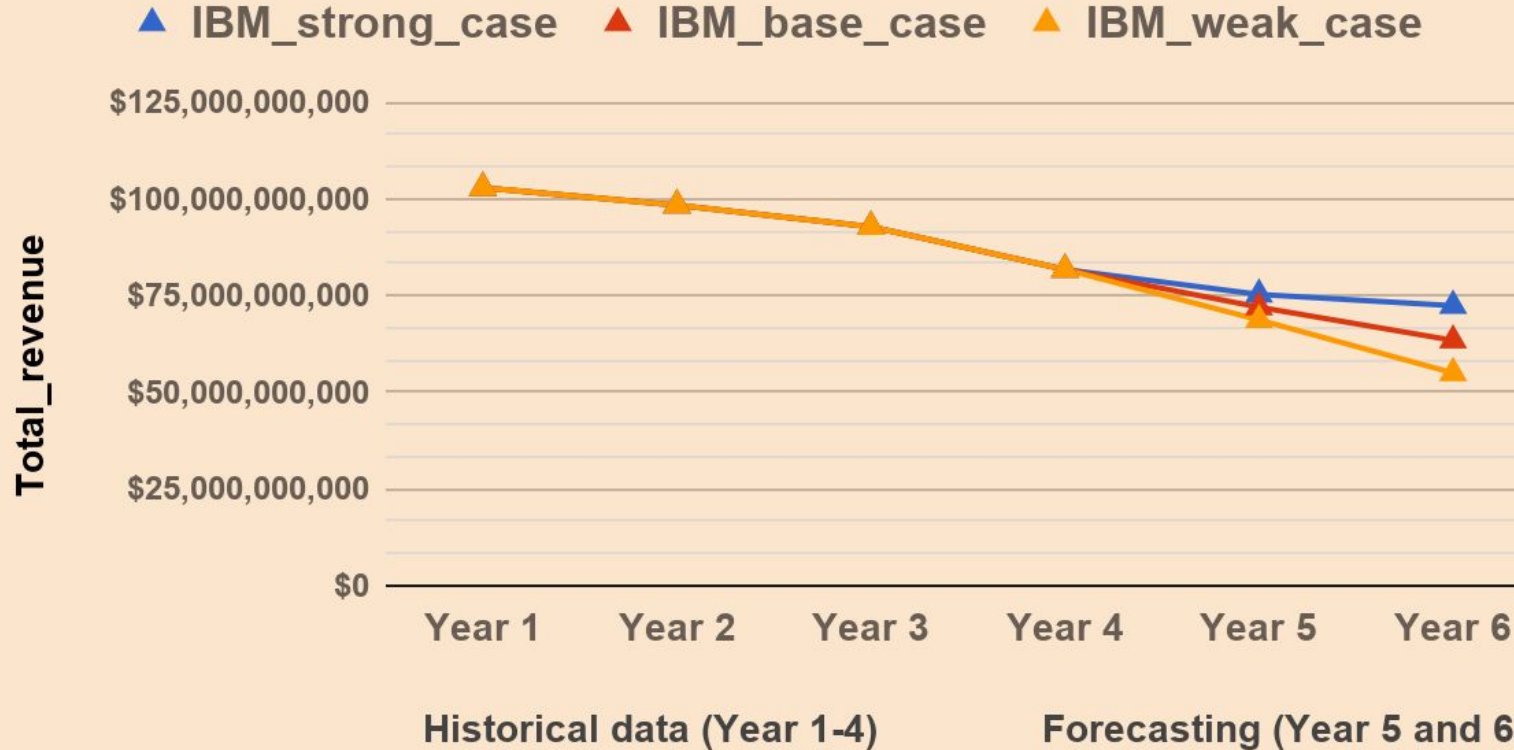
Range
$167,269,508,968
$145,170,038,811
$124,017,031,455

Historical data (Year 1-4)   (Forecasting Year 5 and 6)

4

IBM_strong, IBM_base and IBM_weak Scenarios

Total_revenue

▲ IBM_strong_case   ▲ IBM_base_case   ▲ IBM_weak_case

Standard Deviation
$12,588,207,038
$15,514,021,278
$18,529,332,458

Range
$30,479,373,359
$39,444,774,574
$47,879,795,182

Historical data (Year 1-4)   Forecasting (Year 5 and 6

5

5 point summary

Amazon & IBM

	AMZN_stdev	IBM_stdev
	$55,023,967,755	$15,514,021,278
	AMZN_mean	**IBM_mean**
	$133,145,352,678	$85,201,593,459
	AMZN_median	**IBM_median**
	$121,496,500,000	$87,267,000,000
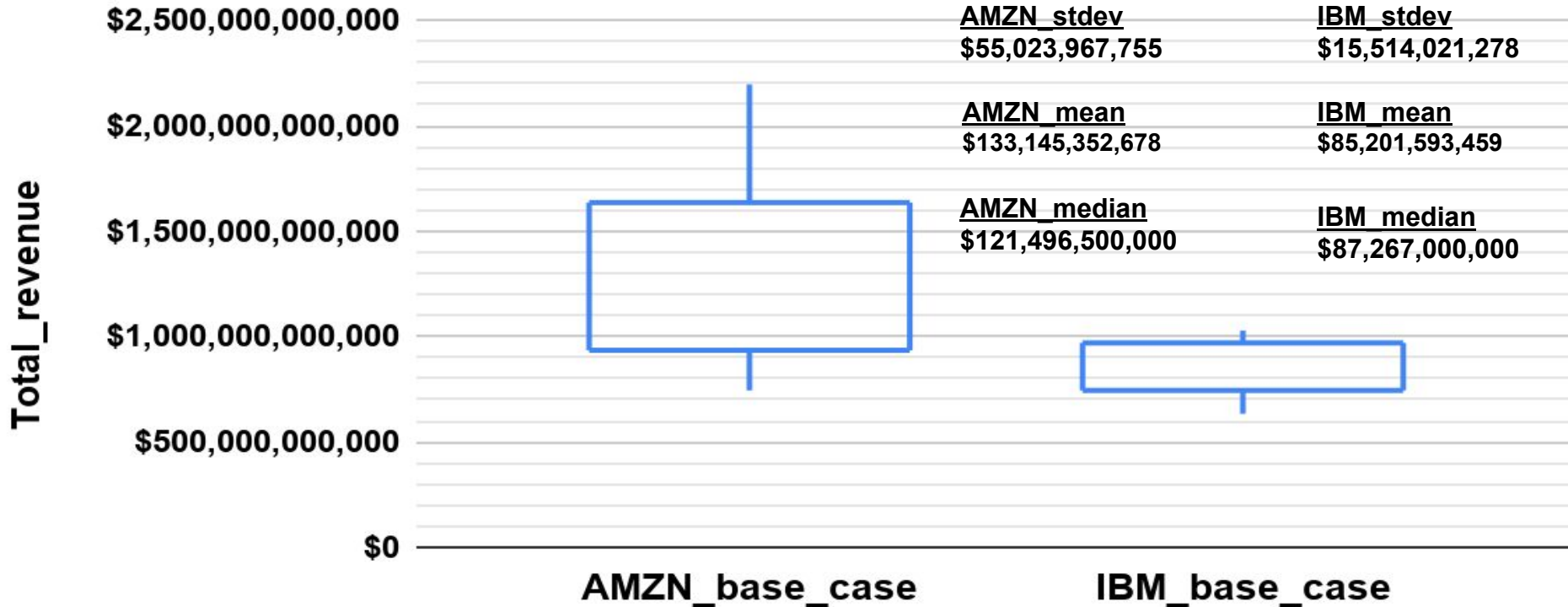
5 point summary for the 3 forecast scenarios

IBM & Amazon

AMZN_Stdev
$62,932,426,046 Strong
$55,023,967,755 Base
$47,726,977,384 Weak

AMZN_median
$121,496,500,000

IBM_Stdev
$12,588,207,038 Strong
$15,514,021,278 Base
$18,529,332,458 Weak

IBM_median
$87,267,000,000

Ranges
$30,479,373,359 $39,444,774,574 $47,879,795,182

Ranges
$167,269,508,968 $145,170,038,811 $124,017,031,455

Total_revenue axis: $0, $50,000,000,000, $100,000,000,000, $150,000,000,000, $200,000,000,000, $250,000,000,000

Categories: IBM_strong_cas, IBM_base_case, IBM_weak_case, AMZN_strong_c, AMZN_base_ca, AMZN_weak_ca

Companies IBM & Amazon

Conclusions:

- **Slides 2 & 3:** _**Pie Charts**_ Both **IBM** and **Amazon** have the largest share of their GICS_sector and GICS_sub-industry market categories. **IBM** **75%** of _**Information Technology/IT Consulting & Other Services.**_ **Amazon** **87.1%** of _**Consumer Discretionary/Internet & Direct Marketing Retail**_.
- I used the base scenario historical data to calculate the _standard deviation_ for the Revenue_growth, Gross_margin and Operating_margin for the two companies. Then added one _standard deviation_ to the base scenario for the strong_case and subtracting one _standard deviation_ for the weak_case scenarios. Repeated for the next year.
- **Slides 4 & 5:** _**Line Charts**_ The data analysis from the NYSE dataset shows a general downward trend in **IBM** for all 3 scenarios. It also shows an upward trend for **Amazon** in all 3 scenarios. The forecast for **Amazon** tends to show the same doubling of revenue trend every 2 years. While a halving of revenue for **IBM** over 6 years.
- **Slides 6 & 7:** _**Candlestick Charts**_ _Slide 6,_ shows that **Amazon** has much higher _Standard deviation_ (**$55,023,967,755**) than **IBM** (**$15,514,021,278**). This could indicate higher investment risk while **IBM** may be more stable. **Amazon's** total_revenue_mean is greater than its median indicating _Right skewness_. **IBM's** mean is less than its median indicating _Left skewness_.
- _Slide 7,_ all 3 scenarios shows **AMZN** growing & **IBM** total revenue declining over 6 years. The forecast trend shows increase spread, _Standard deviation_, for **Amazon** from weak to strong scenario. **IBM** shows decrease spread, _Standard deviation_, from weak to strong scenario. The total _Range_ for each scenario shows Amazon strong case having the greatest range at **$167,269,508,968** of total_revenue as it increases from a weak case range of **$124,017,031,455**. While **IBM** has the lowest range of total revenue for the strong case **$30,479,373,359** case increasing to **$47,879,795,182** for the the weak case.
- Overall **Amazon** is a higher risk investment but it has potential for huge returns. **IBM** is more stable for long term.