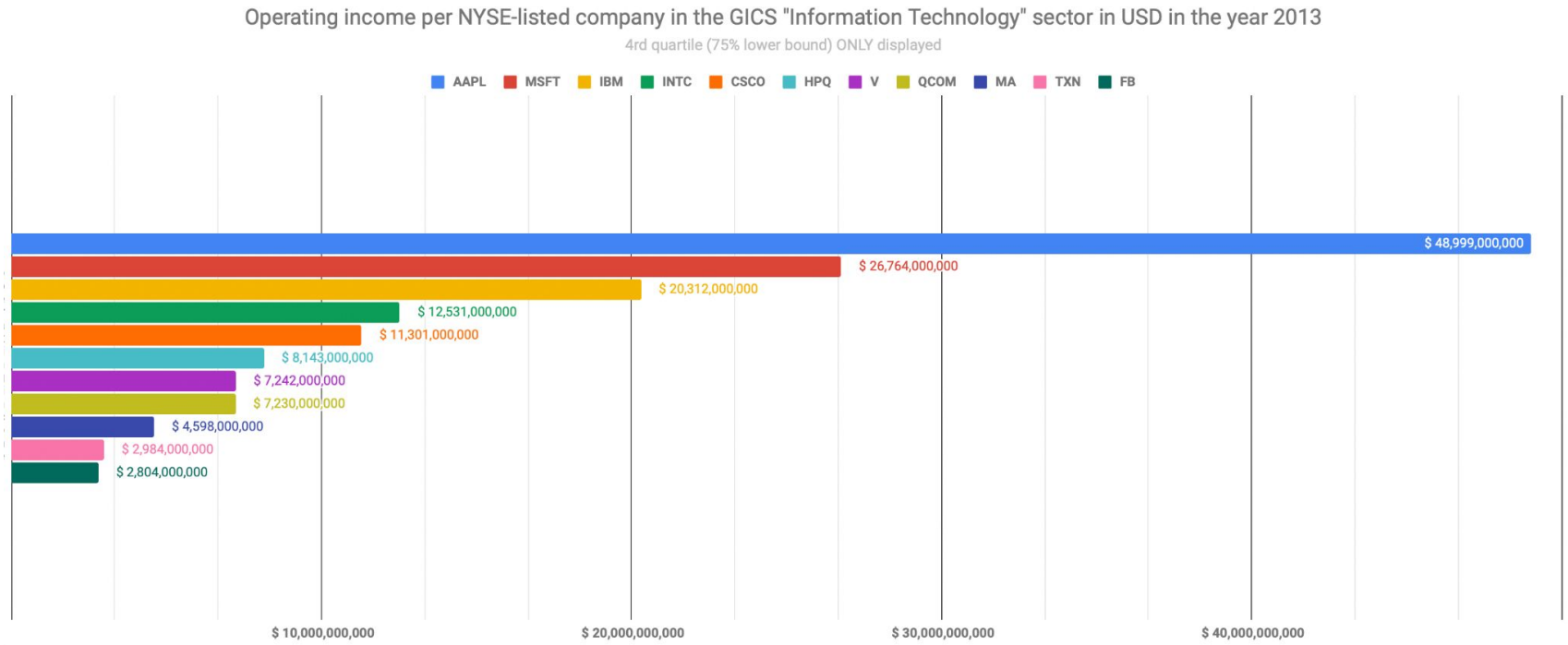
Research question

Which companies in the GICS "Information Technology" sector were in the third quartile (75% *lower* bound) of the operating income in 2013 and what is their relative contribution to the total operating income?

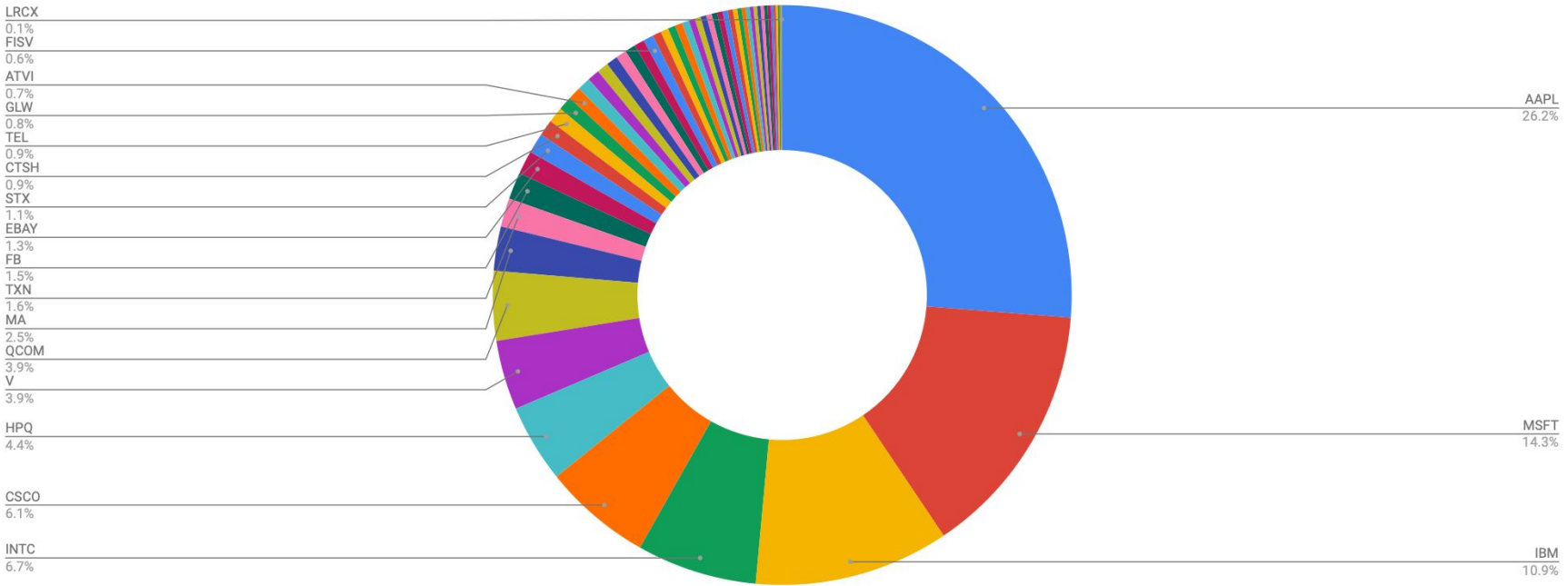


All NYSE-listed companies with an **operating income** >= **$ 2,712,400,000**

In descending order:

Apple, Microsoft, IBM, Intel, Cisco, HP, Visa, Qualcomm, Mastercard, Texas Instruments, Facebook

Donut chart of operating income per company in the GICS "Information Technology" sector



Total operating income 2013 (relative contribution per company):

- **Highest performing company in IT**: Apple **26.2%**
- **Top 3 performing companies in IT**: Apple, Microsoft, IBM **51.4%**
- **4rd quartile**: 11 companies (see previous slide) **82.0%**

Analysis of pivot table and preceding figures

As can be derived from previous charts, the **Information Technology** sector's operating income for the year **2013** follows a negatively skewed distribution with a high mean/median discrepancy. From these results a very simple conclusion can be drawn:

- The IT sector has an oligarchic nature:
  - This dataset contains data on 55 different companies.
  - Over 25% of the calculated operating income is made by 1 company.
  - 3 companies make over 50% of the operating income.
  - The 4rd quartile (the 11 biggest companies) make over 80% of the total operating income.
- This is most easily illustrated by comparing the **mean** ($ 3,392,518,454 or **3.3 billion USD**) with the **median** ($ 782,923,000 or **782 million USD**)) operating income of the IT sector.

Operating income GICS IT sector, 2013: Summary statistics			
	SUM	$	186,588,515,000
Measures of Center	AVERAGE	$	3,392,518,455
	MEDIAN	$	782,923,000
	MODE		#N/A
Measures of Spread	MIN VALUE	$	(110,710,000)
	MAX VALUE	$	48,999,000,000
	RANGE	$	49,109,710,000
	INTERQUARTILE RANGE	$	1,226,135,500
	STANDARD DEVIATION	$	7,968,769,868
	COEFFICIENT OF VARIATION		234.89%

Measures of Center/Spread analysis

The implications of these measures indicate a **right- or positively skewed** dataset with a **wide dispersion**, especially in the upper end of the spectrum. In other words, there are a few companies on the higher end of the spectrum that either dominate the majority of the market, have an above-average gross profit margin, or below-average operating expenses. An alternative explanation for this phenomenon is that these companies have a **Veblen status**: the demand for their products increase with a price increase and decrease with a price decrease; a reversal of the conventional supply & demand dogma in which price and demand are negatively correlated. Due to the quantitative nature and lack of classification and/or categorization a mode does not exist in this dataset. Additionally, from the fact that the **RANGE** and **MAX** value are almost identical is another indicator that most values data points lie closer to the **MIN** than the **MAX** value; positive skewness. The extremity of these outliers can also be seen when comparing the **STDEV** with other values: over six times the **interquartile range**, or the fact that the difference between the **AVG** and **MIN** is **less than half** a **STDEV**. Considering that according to Gaussian distribution states that one STDEV from the MEAN contains 34.1%, approximately 17% of all data points are below the **MEDIUM** and around 83% of all data points are above the **MEDIAN**.