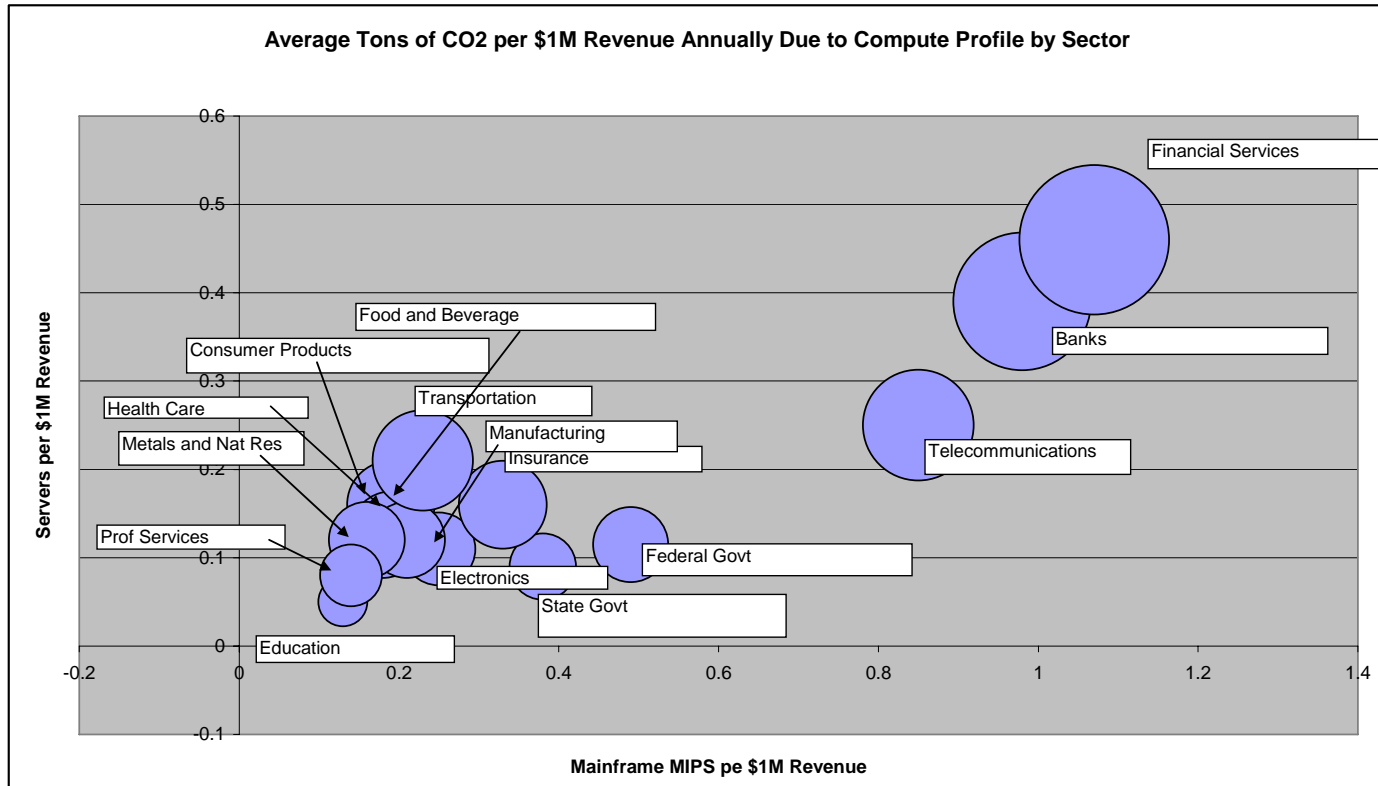


A First View of the Climate Change Impact of Information Technology

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CO2 Impact of Compute Power of Selected Sectors



“Compute power” is the Mainframe and Server capacity only of Information Technology. It is the computing power required for processing with storage, data communication, and other considerations.

Example:

CO2 Profile of Select Financial Services Companies

Financial Services Company	MIPS per \$1M Rev	Servers per \$1M Rev	Tons of CO2 per Year per \$1M Revenue Processed	Tons of CO2 Per Year Due to Compute Power for Enterprise Revenue Level	EPA Family of 2 equivalents
A	3.23	0.13	0.86	16,822	0.37
B	0.74	0.49	2.68	187,493	4.17
C	1.46	0.42	2.35	78,595	1.75
D	1.20	0.47	2.61	233,817	5.20
E	0.90	0.43	2.38	155,220	3.45
F	0.93	0.52	2.88	210,055	4.67
G	1.12	0.73	4.04	248,162	5.51
H	2.27	0.19	1.16	16,522	0.37
I	0.23	0.71	3.89	54,528	1.21
J	0.37	0.38	2.11	82,287	1.83
K	0.70	0.64	3.50	76,902	1.71
L	0.40	0.17	0.95	33,333	0.74
M	0.83	0.50	2.76	33,129	0.74
N	0.81	0.37	2.03	54,943	1.22
O	0.00	1.26	6.84	88,887	1.98

Assumptions

Server consumption averages 257 watts

MF consumption averages 1.2 watts per MIPS

Conversion from watts to carbon dioxide based on EPA Model

Average home (EPA) produces 16,290 tons based on electric consumption alone for family of 2

Average family total is 41,500 tons per year

Example: CO2 Profile of Selected Banking Transactions

	Average Lbs of CO2	Maximum Lbs of CO2	Minimum Lbs of CO2
Credit Card Transaction	0.059	0.23	0.04
Loan Origination	0.281	0.38	0.14
\$1M Deposits Processed and Maintained	187	103	709

The Economic Cost of Low CO2 Footprint Solutions

Low cost compute power appears to have the highest carbon footprint. Virtualization will likely invert this model.

