May 19, 2023

Company Name Part Company Name Part Company Name Courrent Price Week Range Company Name Revenue Revenue			
Bitcoin BTC \$26,836.00 36% \$520,453 - - - - - 1% Ethereum ETH 1,813.00 35% 218,258 - - - - - 1% DeFi Index (a) DPI 69.30 9% 39 - - - - - - 6% Crypto Investment Platforms Coinbase COIN \$57.12 30% \$11,450 4.2 4.1 0% 0% Galaxy Digital (b) GLXY 4.02 21% 1,402 3.1 11.6 3% 3% Bakkt BKKT 1.41 12% 308 5.6 4.3 32% 18% Coinshares (b) CNSRF 3.31 22% 252 4.1 2.5 3% 3% Sitcoin Network Operators Marathon MARA \$9.24 39% \$1,965 16.8 5.8 187% 4%	1 Month	Jan 2, 2023	Since Inception
Ethereum ETH 1,813.00 35% 218,258 - - - - 1 1% DeFi Index (a) DPI 69.30 9% 39 - - - - - 1% Crypto Investment Platforms Coll Section Section of Coll Section Platforms Colnbase COIN \$57.12 30% \$11,450 4.2 4.1 0% 0% Galaxy Digital (b) GLXY 4.02 21% 1,402 3.1 11.6 3% 3% Bakkt BKKT 1.41 12% 308 5.6 4.3 32% 18% Coinshares (b) CNSRF 3.31 22% 252 4.1 2.5 3% 3% Bitcoin Network Operators Marathon MARA \$9.24 39% \$1,965 16.8 5.8 187% 4% Rict RIOT 11.07 70% 1,680 6.7 4.6 4			
DeFi Index (a) DPI 69.30 9% 39 - - - - - 6%	-8%	62%	
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Coinbase COIN \$57.12 30% \$11,450 4.2 4.1 0% 0% Galaxy Digital (b) GLXY 4.02 21% 1,402 3.1 11.6 3% 3% Bakkt BKKT 1.41 12% 308 5.6 4.3 32% 18% Coinshares (b) CNSRF 3.31 22% 252 4.1 2.5 3% 3% Bitcoin Network Operators Marathon MARA \$9.24 39% \$1,965 16.8 5.8 187% 4% Riot RIOT 11.07 70% 1,680 6.7 4.6 40% 4% Core Scientific CORZQ 0.35 8% 1,079 0.5 1.1 22% -3% Cipher Mining CIFR 2.48 71% 597 76.5 5.8 1221% 18% TeraWulf WULF 1.57 32% 410 9.2 - - -	-15%	20%	122
Coinbase COIN \$57.12 30% \$11,450 4.2 4.1 0% 0% Galaxy Digital (b) GLXY 4.02 21% 1,402 3.1 11.6 3% 3% Bakkt BKKT 1.41 12% 308 5.6 4.3 32% 18% Coinshares (b) CNSRF 3.31 22% 252 4.1 2.5 3% 3% Bitcoin Network Operators Marathon MARA \$9.24 39% \$1,965 16.8 5.8 187% 4% Riot RIOT 11.07 70% 1,680 6.7 4.6 40% 4% Core Scientific CORZQ 0.35 8% 1,079 0.5 1.1 22% -3% Cipher Mining CIFR 2.48 71% 597 76.5 5.8 1221% 18% TeraWulf WULF 1.57 32% 410 9.2 - - -			
Bakkt BKKT 1.41 12% 308 5.6 4.3 32% 18% Coinshares (b) CNSRF 3.31 22% 252 4.1 2.5 3% 3% Bitcoin Network Operators Marathon MARA \$9.24 39% \$1,965 16.8 5.8 187% 4% Riot RIOT 11.07 70% 1,680 6.7 4.6 40% 4% Core Scientific CORZQ 0.35 8% 1,079 0.5 1.1 22% -3% Cipher Mining CIFR 2.48 71% 597 76.5 5.8 1221% 18% TeraWulf WULF 1.57 32% 410 9.2 -2% Bitdeer BTDR 4.75 1% 386 1.2 -15% Canaan CAN 2.47 22% 349 1.1 -49% 2% B	-11%	70%	-83%
Coinshares (b) CNSRF 3.31 22% 252 4.1 2.5 3% 3% Bitcoin Network Operators Bitcoin Network Operators Marathon MARA \$9.24 39% \$1,965 16.8 5.8 187% 4% Riot RIOT 11.07 70% 1,680 6.7 4.6 40% 4% Core Scientific CORZQ 0.35 8% 1,079 0.5 1.1 22% -3% Cipher Mining CIFR 2.48 71% 597 76.5 5.8 1221% 18% TeraWulf WULF 1.57 32% 410 9.2 -2% Bitdeer BTDR 4.75 1% 386 1.2 -15% Canaan CAN 2.47 22% 349 1.1 -49% 2% Bitfarms BITF 1.15 39% 312 5.9 <	5%	36%	331%
Bitcoin Network Operators Marathon MARA \$9.24 39% \$1,965 16.8 5.8 187% 4% Riot RIOT 11.07 70% 1,680 6.7 4.6 40% 4% Core Scientific CORZQ 0.35 8% 1,079 0.5 1.1 22% -3% Cipher Mining CIFR 2.48 71% 597 76.5 5.8 1221% 18% TeraWulf WULF 1.57 32% 410 9.2 -2% Bitdeer BTDR 4.75 1% 386 1.2 -15% Canaan CAN 2.47 22% 349 1.1 -49% 2% Bitfarms BITF 1.15 39% 312 5.9 17% Northern Data NB2 16.49 36% 303 1.1 -45% 0%	3%	22%	-85%
Marathon MARA \$9.24 39% \$1,965 16.8 5.8 187% 4% Riot RIOT 11.07 70% 1,680 6.7 4.6 40% 4% Core Scientific CORZQ 0.35 8% 1,079 0.5 1.1 22% -3% Cipher Mining CIFR 2.48 71% 597 76.5 5.8 1221% 18% TeraWulf WULF 1.57 32% 410 9.2 -2% Bitdeer BTDR 4.75 1% 386 1.2 -15% Canaan CAN 2.47 22% 349 1.1 -49% 2% Bitfarms BITF 1.15 39% 312 5.9 17% Northern Data NB2 16.49 36% 303 1.1 -45% 0% Hut 8 HUT 1.92 39%	-	4%	-66%
Marathon MARA \$9.24 39% \$1,965 16.8 5.8 187% 4% Riot RIOT 11.07 70% 1,680 6.7 4.6 40% 4% Core Scientific CORZQ 0.35 8% 1,079 0.5 1.1 22% -3% Cipher Mining CIFR 2.48 71% 597 76.5 5.8 1221% 18% TeraWulf WULF 1.57 32% 410 9.2 -2% Bitdeer BTDR 4.75 1% 386 1.2 -15% Canaan CAN 2.47 22% 349 1.1 -49% 2% Bitfarms BITF 1.15 39% 312 5.9 17% Northern Data NB2 16.49 36% 303 1.1 -45% 0% Hut 8 HUT 1.92 39%			
Core Scientific CORZQ 0.35 8% 1,079 0.5 1.1 22% -3% Cipher Mining CIFR 2.48 71% 597 76.5 5.8 1221% 18% TeraWulf WULF 1.57 32% 410 9.2 -2% Bitdeer BTDR 4.75 1% 386 1.2 -15% Canaan CAN 2.47 22% 349 1.1 -49% 2% Bitfarms BITF 1.15 39% 312 5.9 1.7% Northern Data NB2 16.49 36% 303 1.1 -45% 0% Hive HIVE 3.09 28% 235 1.7 1.7 1.7 -25% 8% Hut 8 HUT 1.92 39% 224 1.5 1.5 -45% 10%	-13%	172%	-83%
Cipher Mining CIFR 2.48 71% 597 76.5 5.8 1221% 18% TeraWulf WULF 1.57 32% 410 9.2 -2% Bitdeer BTDR 4.75 1% 386 1.2 -15% Canaan CAN 2.47 22% 349 1.1 -49% 2% Bitfarms BITF 1.15 39% 312 5.9 17% Northern Data NB2 16.49 36% 303 1.1 -45% 0% Hive HIVE 3.09 28% 235 1.7 1.7 -25% 8% Hut 8 HUT 1.92 39% 224 1.5 1.5 -45% 10%	-9%	228%	310%
TeraWulf WULF 1.57 32% 410 9.2 -2% Bitdeer BTDR 4.75 1% 386 1.2 -15% Canaan CAN 2.47 22% 349 1.1 -49% 2% Bitfarms BITF 1.15 39% 312 5.9 1.7% Northern Data NB2 16.49 36% 303 1.1 -45% 0% Hive HIVE 3.09 28% 235 1.7 1.7 -25% 8% Hut 8 HUT 1.92 39% 224 1.5 1.5 -45% 10%	-10%	400%	-96%
Bitdeer BTDR 4.75 1% 386 1.2 -15% Canaan CAN 2.47 22% 349 1.1 -49% 2% Bitfarms BITF 1.15 39% 312 5.9 1.7% Northern Data NB2 16.49 36% 303 1.1 -45% 0% Hive HIVE 3.09 28% 235 1.7 1.7 1.7 -25% 8% Hut 8 HUT 1.92 39% 224 1.5 1.5 -45% 10%	1%	288%	-75%
Canaan CAN 2.47 22% 349 1.1 -49% 2% Bitfarms BITF 1.15 39% 312 5.9 17% Northern Data NB2 16.49 36% 303 1.1 -45% 0% Hive HIVE 3.09 28% 235 1.7 1.7 -25% 8% Hut 8 HUT 1.92 39% 224 1.5 1.5 -45% 10%	8%	121%	-84%
Bitfarms BITF 1.15 39% 312 5.9 17% Northern Data NB2 16.49 36% 303 1.1 -45% 0% Hive HIVE 3.09 28% 235 1.7 1.7 -25% 8% Hut 8 HUT 1.92 39% 224 1.5 1.5 -45% 10%	-16%	-44%	-44%
Northern Data NB2 16.49 36% 303 1.1 -45% 0% Hive HIVE 3.09 28% 235 1.7 1.7 -25% 8% Hut 8 HUT 1.92 39% 224 1.5 1.5 -45% 10%	-10%	27%	-73%
Hive HIVE 3.09 28% 235 1.7 1.7 -25% 8% Hut 8 HUT 1.92 39% 224 1.5 1.5 -45% 10%	-2%	167%	22%
Hut 8 HUT 1.92 39% 224 1.5 1.5 -45% 10%	-28%	191%	-12%
	-15%	102%	120%
	159%	134%	-26%
Argo ARBK 1.16 12% 111 1.2 1.6 29% -12%	-20%	0%	-27%
Crypto Influenced			
Block SQ 58.64 17% 34,516 2.0 1.7 14% 6%	-7%	-9%	356%
Microstrategy MSTR 286.18 67% 4,228 8.5 8.3 2% 6%	-9%	97%	174%
Robinhood HOOD 8.49 28% 2,307 1.7 1.2 38% -3%	-14%	5%	-78%

⁽a) DeFi Pulse Index (includes top 14 DeFi tokens)

PERSPECTIVES by Eric F. Risley

It's time to change. Bitcoin Miners should be referred to as Bitcoin Network Operators.

Today the Bitcoin network is comprised of 16,866 reachable nodes, has been in existence for fourteen years, has validated and stored over 839 billion transactions, and has achieved an overall uptime of 99.9882659% since inception and a perfect 100% since 2013. Impressive indeed.

The issuance of Bitcoin, built into the protocol code as an economic reward, has created the necessary economic incentive for node operators to build today's network. Architect Partners estimates that roughly \$31 billion has been invested just in the necessary data centers and specialized computers. This electricity expenditures, which today totals roughly \$6 billion per year.

This is an extraordinary phenomenon where an incentive, created by an idea, and a collective buy-in to that idea, has translated into a physical manifestation costing \$10s of billions. However, this Bitcoin incentive (commonly analogized as a mining reward) is declining and will eventually stop.

Transaction fees are also explicitly featured in the Bitcoin Whitepaper. "Once a predetermined number of coins have entered circulation, the incentive can transition entirely to transaction fees and (Bitcoin can) be completely inflation free".

Historically, transaction fees have been a very small proportion of the total compensation received by operators of nodes. This has begun to change, particularly during periods of high demand for transaction validation. In fact, last week, transaction fees represented 36% of total rewards (in Q1 2023, the average was 7.9%) to node operators.

Our thesis is that transaction fees will become the dominant component of node operator compensation as the Bitcoin network matures. Why continue to call those that run this network "miners" when mining rewards are gradually declining and will eventually be eliminated?

⁽b) Due to disproportionate cash balances, we are displaying market cap as a substitute for enterprise value

⁽c) Announced IPO with pricing details, IPO has been postponed

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