



Phunware, Inc.

Q4 revenue inline, and 2022 guidance strong. We expect a return to strong growth for its (MaaS) enterprise cloud platform over the next year to be positive for stock. Raising P/T to \$6.25.

COMPANY UPDATE

Rating: BUY

Ticker: PHUN

Price: \$2.74

Target: \$6.25
(from \$6.00)

Q4 revenue inline: Phunware recently (on March 23) reported its fiscal Q4 2021 results. Revenue was \$5.4 million (+168% y-o-y), compared to our and consensus estimates of \$5.0 million. EPS was \$(0.37) (including \$0.31/share in special charges), compared to our and consensus estimates of \$(0.04). Q4 guidance was for revenue of \$5 million.

Q4 still delays: Similar to prior quarters, there were still delays from the pandemic as many companies faced delays with contracts and implementations. However, business overall is slowly recovering and returning to normal. Backlog at Q4 increased to \$8.6 million, from \$6.1 million in Q3. Lyte had \$3.1 million and was 57% of revenues.

Maintained positive 2022 guidance: The company maintained its 2022 revenue guidance of \$25 million. Q1 guidance is for revenue of \$6 million.

Adjusting estimates: We are maintaining our 2022 revenue estimate of \$25 million, but lowering it for EPS to \$(0.19) from \$(0.13).

Focused on mobile applications: Phunware's MaaS software platform enables companies and brands to engage, manage, and monetize their mobile applications. It offers enterprise mobile software, including content management, location-based services, marketing automation, business intelligence and analytics, alerts, notifications and messaging, audience engagement, and audience monetization, as well as vertical solutions, iOS and Android-based mobile application portfolios, solutions, and services.

Lyte acquisition: In October, the company closed the acquisition of privately-held Lyte Technology, Inc., a fast-growing provider of high performance computer systems, for ~\$11 million in cash and stock and earnouts.

PhunToken launch: In May, Phunware launched the PhunToken Purchase Portal to begin selling PhunToken to consumers, developers and brands. PhunToken is designed to promote profitable behavior by rewarding consumers for their activities.

Large holdings of bitcoin: As of today, Phunware holds ~641 bitcoin valued at ~\$31 million. This equates to ~\$0.35 per share.

MEME stock jumps: Due to Phunware's prior work on an app with former President Trump, Phunware's stock benefited as President Trump announced a new social media platform in October. Phunware's stock in October jumped from ~\$1 to ~\$25 and has settled back (by December) to its current ~\$3 levels.

Large market potential: The demand for its services continues to grow fueled by its participation in four rapidly growing and evolving markets: mobile cloud software, media, big data, and cryptonetworking.

Still early but high growth stage: The company expects 2022 to improve significantly y-o-y due to easier comps going forward and as business return to normal post pandemic. The company continues to expect annual revenue growth of 30% or more longer term.

Positive risks versus rewards: We believe the billion dollars market potentials presents high rewards for the risks.

Valuation attractive: We are maintaining our BUY rating, but raising our 12-month price target to \$6.25 from \$6.00, based on a NPV analysis, representing significant upside from the current share price. We believe this valuation appropriately balances out the company's high risks with the company's high growth prospects and large upside opportunities.

Company Description

Based in Austin, TX, Phunware is a software company providing Multiscreen-as-a-Service (MaaS) enterprise cloud platform for mobile devices worldwide.

United States
Technology

March 27, 2022

Edward Woo, CFA
(949) 259-4932
ewoo@ascendant.com

Stock Data

Exchange:	NasdaqGS
52-week Range:	\$0.82 – 24.04
Shares Outstanding (million):	97
Market cap (\$million):	\$266
EV (\$million):	\$248
Debt (\$million):	\$5
Cash (\$million):	\$23
Avg. Daily Trading Vol. (\$million):	\$44
Float (million shares):	92
Short Interest (million shares):	4
Dividend, annual (yield):	\$0 (NA%)

Revenues (US\$ million)

	<u>2022E</u> (Cur.)	<u>2022E</u> (Old)	<u>2023E</u> (Cur.)	<u>2023E</u> (Old)
Q1 Mar	6E	5E	7E	
Q2 Jun	6E		8E	
Q3 Sep	6E		8E	
Q4 Dec	<u>6E</u>	<u>7E</u>	<u>8E</u>	
Total	25E	25E	30E	
EV/Revs	10x		8x	

Earnings per Share (pro forma)

	<u>2022E</u> (Cur.)	<u>2022E</u> (Old)	<u>2023E</u> (Cur.)	<u>2023E</u> (Old)
Q1 Mar	(0.05)E	(0.03)E	(0.04)E	
Q2 Jun	(0.05)E	(0.03)E	(0.04)E	
Q3 Sep	(0.04)E	(0.03)E	(0.03)E	
Q4 Dec	<u>(0.04)E</u>	<u>(0.03)E</u>	<u>(0.02)E</u>	
Total	(0.19)E	(0.13)E	(0.13)E	
P/E	N/A		N/A	

Important Disclosures

Ascendant Capital Markets LLC seeks to do business with companies covered by its research team. Consequently, investors should be aware that the firm may have a conflict of interest that could affect the objectivity of this report. Investors should consider this report as only a single factor in making an investment decision.

For analyst certification and other important disclosures, refer to the Disclosure Section, located at the end of this report, beginning on page 14.

OVERVIEW

- Phunware recently (on March 23) reported its fiscal Q4 2021 (ending December) results.
- Revenue was \$5.4 million (+168% y-o-y), compared to our and consensus estimates of \$5.0 million.
- EPS was \$(0.37) (including \$0.31/share in special charges and other non-recurring losses including crypto currency revaluations), compared to our and consensus estimates of \$(0.04).
- Q4 guidance was for revenue of \$5 million.
- The company maintained 2022 revenue guidance of \$25 million.
- The company provided initial Q1 revenue guidance of \$6 million.
- Longer term, the company continues to expect annual revenue growth of 30% or more.
- We are maintaining our 2022 revenue estimate of \$25 million, but lowering it for EPS to \$(0.19) from \$(0.13).
- We are initiating our 2023 estimates for revenue of \$30 million, and for EPS of \$(0.13).

ADDITIONAL DETAILS

- Gross profit for the quarter was \$1.2 million, compared with our estimate of \$3.0 million.
- Gross margin for the quarter was 22%, versus our expectation of 60% and 70% last year.
- Operating expenses were \$6 million, versus our expectation of \$7 million.
- Operating loss was \$5.2 million, versus our expectation of a loss of \$3.5 million.
- Net loss was \$33 million (including \$28 million in special charges and other non-recurring losses including crypto currency revaluations), versus our expectation of a loss of \$3.5 million.
- Q4 backlog was \$8.6 million, up from \$6.1 million in Q3.

The company's balance sheet had \$23 million in cash and \$5 million in debt, compared with \$1 million in cash and \$1 million in debt at the end of September. In Q4, due to a huge run up in its share price the company raised ~\$65 million from its ATM. The company currently has an estimated 641 Bitcoin and 1,217 ETH, valued at ~\$31 million at today's trading prices (\$0.35/share).

Exhibit 1: Phunware Product Overview

Products and Solutions



SOLUTIONS




- Advocacy
- Aviation
- Healthcare
- Hospitality
- Media and Entertainment
- Residential
- Retail
- Smart City
- Smart Campus
- Smart Workplace

PRODUCTS

- Analytics**
Analyze real-time mobile app data
- Audience Monetization**
Auction mobile app content with ads
- Content Management**
Manage and distribute mobile app content
- Developer Tools**
Build native mobile apps with SDKs
- Location Based Services**
Real-time indoor blue-dot positioning and navigation
- Mobile Engagement**
Location-aware mobile app notifications
- Audiences**
Target mobile media at scale globally
- Targeted Media**
Work with our team to develop and launch targeted mobile campaigns
- Data Exchange**
Share data, build audiences and reward ecosystem stakeholders with digital assets
- Datasets**
Mobile data for analytics and data science
- PhunWallet**
Manage personal data and digital assets (planned for release in 2020-H2)

How We Work with Customers



For brands without an existing mobile app	For brands with an existing mobile app	For brands wanting advanced features and/or custom user interface
		
<p>INDUSTRY-SPECIFIC APP TEMPLATES</p> <p>Customizable and packed with features out-of-the box</p>	<p>A-LA-CARTE PHUNWARE MODULES</p> <p>Can be easily integrated into existing apps</p>	<p>CUSTOM SOLUTIONS</p> <p>Can be created by Phunware's Professional Services team</p>

Source: Company reports.

Exhibit 2: Phunware Customers and Deals

Top-Tier Customers



Customers by Industry			
Healthcare	Media & Entertainment	Retail	Campus
Baptist Health South Florida Mount Sinai Cedars Sinai MD Anderson Cancer Center Cook Children's Health Care System NYU Langone Health Dignity Health PARKVIEW HEALTH HOUSTON Methodist WEST HOSPITAL MAYO CLINIC KAISER PERMANENTE MIAMI CHILDREN'S HOSPITAL	TRUMP PENCE WARNER BROS. AMC CW NBC Sports LIVE NATION CBS Interactive NBC UNIVERSAL iOnline. NASCAR AT&T STADIUM UNIVISION	LOWE'S KOHL'S Caruso Aviation Toronto Pearson YYC CALGARY INTERNATIONAL AIRPORT MIA	intel pwc Hospitality ATLANTIS PARADISE ISLAND BAHAMAS Wynn LAS VEGAS NCL NORWEGIAN CRUISE LINE

Typical SaaS Software Deal Structure

	Brands without Mobile Application Portfolios	Brands with Mobile Application Portfolios
MaaS Licenses	\$300K - \$600K	\$800K - \$1,000K
MaaS Services	\$50K - \$150K	\$100K - \$500K
MaaS Deal Range	1 - 5 Years	1 - 5 Years
Average Deal Size	\$350K - \$750K	\$900K - \$1,500K

Source: Company reports.

Exhibit 3: PhunToken and PhunCoin

PhunCoin + Phun



Phunware’s blockchain-enabled data exchange and mobile loyalty ecosystem are powered by two unique digital assets that help eliminate untrustworthy intermediaries and directly connect brands with consumer audiences of interest that have voluntarily opted in with their personal data and information in exchange for a benefit.

Brands

Dramatically increase brand and consumer protection while achieving substantially higher ROI on auditable media spend with consumers that have voluntarily opted in to engage through open and transparent 1:1 interactions.

Consumers

Regain complete control of their identities, including their personal data and information, through an open, transparent and auditable ecosystem that they have opted in to at their own selection in return for compensation.

What is it?

PhunCoin is a security token that is empowering consumers to take control of and be compensated for their data.

What can I do with it?

Profitable Data: Monetize your digital identity by sharing data with brands.

Give me an example!

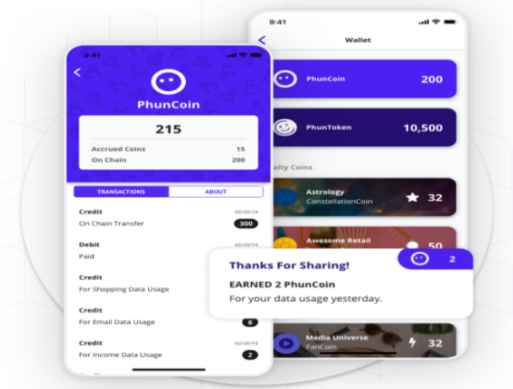
Earn PhunCoin for the value of data you provide in a survey or for completing KYC / AML.

Why should I want it?

Invest in the value of Phunware’s blockchain-enabled data exchange and receive a PhunCoin dividend (i.e. the “gold mine”).

How do I get some?

Available to accredited investors via Reg D.



940M monthly active devices worldwide

5B transactions processed daily

5TB of data generated daily

\$120M+ in private financing

62 employees

3 office locations

CONSUMERS receive PhunToken in return for profitable behavior such as completing surveys, watching videos or checking into specific locations to participate in marketing campaigns.

BRANDS can customize user interfaces to rebrand PhunToken within their existing mobile applications to avoid changing consumer behavior and maintain brand awareness. Brands also receive direct, real-time access to deterministic and intent-based data for their target consumers and can reward the right consumers for their engagement.

BRANDED MARKETPLACES will give consumers the ability to spend PhunToken on valuable goods, services and offers.

CONSUMERS will be encouraged to hold PhunToken as brands unlock more valuable tiers of rewards for consumers with an auditable record of engaging in profitable behavior.

© 2009-PRESENT PHUNWARE, INC. (NASDAQ: PHUN)

Source: Company reports.

Exhibit 4: Phunware Recent Highlights

Recent Business Highlights

- Notable Corporate Developments:
 - [Provided 2022 Revenue Guidance & Revises Investment Policy for Cash Management](#)
 - [Phunware Acquired Additional Bitcoin](#)
 - [Launched New Resource for Shareholders to Restrict Short Selling](#)
- Notable Customer and Partner Wins:
 - [Announced Partnership with PrimusTech to Integrate Mobile Smart Solutions in Asia](#)
 - [Announced Two Strategic Supplier Relationships and Optimized PC Series for CES](#)
 - [Announced Strategic Political Partnership with Campaign Nucleus](#)
- Notable Product Updates:
 - [PhunCoin by Phunware to Begin Trading](#)
 - [Phunware Multiscreen-as-a-Service \(MaaS\) Platform for Digital Transformation Now Available in AWS Marketplace](#)
 - [Announced PhunToken Uniswap Liquidity Pool Rewards Program](#)
 - [Received Notice of Allowance for United States Patent for Monitoring Outdoor and Indoor Environments with Mobile Devices](#)

Source: Company reports.

Exhibit 5: Phunware Long Term Financial Plan

Target Operating Model



30%+

Year-over-Year
Net Revenues Growth

75%+

Gross Margin

Positive

Adjusted EBITDA

Source: Company reports.

Exhibit 6: Phunware's Cryptocurrency Strategy (as of 11/18/21, 11/22/21, 12/9/21)

AUSTIN, Texas, Nov. 18, 2021 (GLOBE NEWSWIRE)

As part of the updated corporate cash management policy, Phunware may save and/or invest cash reserves in certain specified alternative reserve assets to include, but not limited to:

- **Bitcoin.** Phunware currently holds approximately 127 bitcoin, which were acquired at an aggregate purchase price of approximately \$7.75 million and an average purchase price of approximately \$61,238 per bitcoin, inclusive of fees and expenses. The Company expects to add to its bitcoin total as a routine part of corporate operations and treasury management for the foreseeable future.
- **Stablecoins.** Phunware expects to use reserve-backed stablecoins, including stablecoin collateral loops, to maximize its savings yields in digital US dollar equivalents that can be far more attractive than traditional legacy banking yields in Annual Percentage Yield (APY) terms. The Company will not use Tether (USDT) stablecoins as any part of this strategy and fully expects to concentrate its stablecoin exposure on assets such as [US Dollar Coin \(USDC\)](#) and [Gemini Dollar \(GUSD\)](#) amongst other equivalents.
- **Alternative cryptocurrencies.** Phunware expects to initiate numerous diversified DeFi positions and techniques to generate financial returns consistent with financial lending, borrowing, market making, yield farming, collateralized looping, swapping, staking, bridging, wrapping, pooling and pairing. The Company will maintain its DeFi strategies, positions and techniques as both confidential and proprietary information.

AUSTIN, Texas, Nov. 22, 2021 (GLOBE NEWSWIRE) -- [Phunware, Inc. \(NASDAQ: PHUN\)](#) (the "Company"), a fully-integrated [enterprise cloud platform](#) for mobile that provides products, solutions, data and services for brands worldwide, announced today it has purchased an additional 398 bitcoin for approximately \$23.8 million in cash at an average price of approximately \$59,917 per bitcoin, inclusive of fees and expenses.

As of November 22, 2021, Phunware holds an aggregate of approximately 529 bitcoin, which were acquired at an aggregate purchase price of approximately \$31.8 million and an average purchase price of approximately \$60,191 per bitcoin, inclusive of fees and expenses.

AUSTIN, Texas, Dec. 09, 2021 (GLOBE NEWSWIRE) -- [Phunware, Inc. \(NASDAQ: PHUN\)](#) (the "Company"), a fully-integrated [enterprise cloud platform](#) for mobile that provides products, solutions, data and services for brands worldwide, announced today it has purchased an additional 100 bitcoin for approximately \$4,975,000 in cash at an average price of approximately \$49,750 per bitcoin, inclusive of fees and expenses.

As of December 9, 2021, Phunware holds an aggregate of approximately 630 bitcoin, which were acquired at an aggregate purchase price of approximately \$36.8 million and an average purchase price of approximately \$58,513 per bitcoin, inclusive of fees and expenses.

Source: Company reports.

Exhibit 7: Bitcoin Price Chart (2-years)

Bitcoin to USD Chart



Source: <https://coinmarketcap.com/>

Exhibit 8: Phunware, Inc. Stock Price (6-months)



Source: <https://bigcharts.marketwatch.com/>

Exhibit 9: Acquisition of Lyte Technology

Phunware Closes Acquisition of High Performance Computer Provider Lyte Technology

Revenue Guidance for Fourth Quarter Fiscal 2021 Expected to Exceed \$5M

AUSTIN, Texas, Oct. 19, 2021 (GLOBE NEWSWIRE) -- [Phunware, Inc. \(NASDAQ: PHUN\)](#) (the "Company"), a fully-integrated [enterprise cloud platform](#) for mobile that provides products, solutions, data and services for brands worldwide, announced today it has formally closed the acquisition of privately-held [Lyte Technology, Inc. \("Lyte"\)](#), a fast-growing provider of high performance computer systems. The Company financed the closing consideration of \$3.32 million with cash on-hand and unsecured, non-dilutive debt.

Lyte Technology Overview

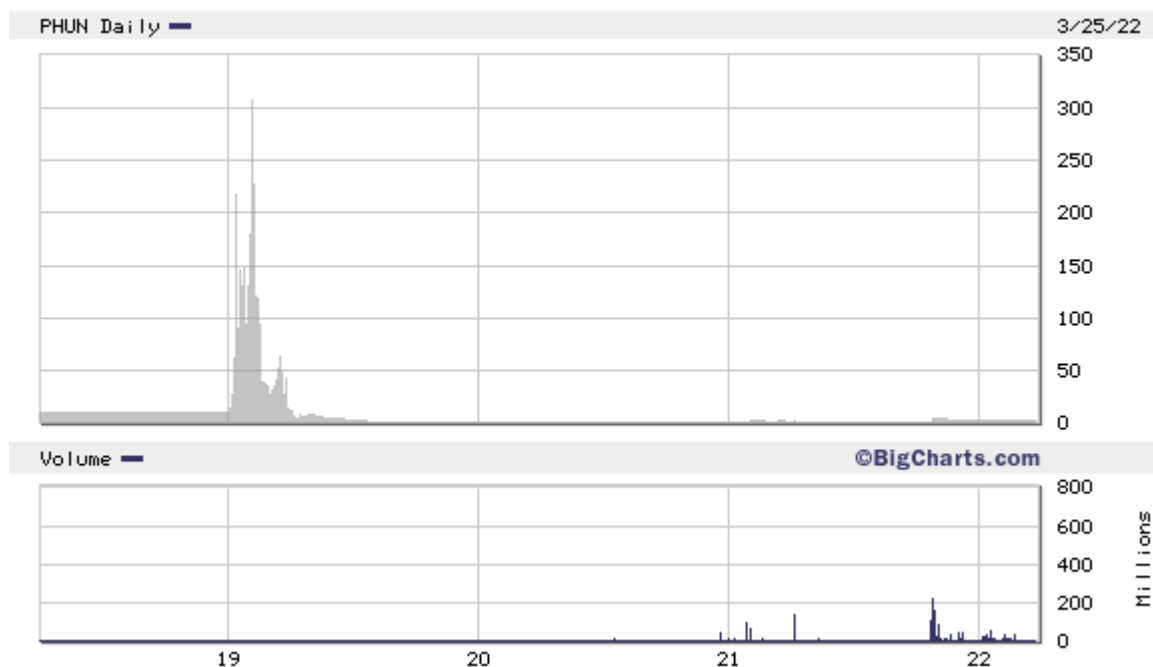
Founded in 2018, Lyte is a profitable, rapidly-growing system integrator that specializes in marketing and distributing custom, high-end computer systems off-the-shelf with advanced graphic processing units for gaming, streaming and cryptocurrency mining. Currently located in Illinois, Lyte employs over 25 people and ships thousands of computer systems per quarter to a unique customer network that has largely grown through word-of-mouth.

Acquisition Summary and Rationale (Unaudited)

- The total consideration for the acquisition consisted of cash and Company common stock valued at up to approximately \$10.98 million, a portion of which is characterized as an earn-out payment contingent upon Lyte generating at least \$12.00 million in net revenues for the one-year period post-closing.
- No Company common stock was issued at closing.
- Lyte enables Phunware to enter the high performance personal computer market, which [JPR](#) estimates is a \$32 billion USD market that is expected to grow at a 20.4% CAGR over the next five years.
- Complementary and synergistic go-to-market strategies exist, with no overlap in the companies' relevant partner or customer bases.
- Lyte's customers represent gamers, developers, content creators and crypto enthusiasts who will support the adoption, scale and infrastructure required for Phunware to deploy its decentralized data economy powered by [PhunCoin](#) and [PhunToken](#).
- For the fourth quarter of fiscal 2021, Phunware expects to report net revenues exceeding \$5.00 million.

Source: Company reports.

Exhibit 10: Phunware, Inc. Stock Price (4-years since IPO December 2018)



Source: <https://bigcharts.marketwatch.com/>

Exhibit 11: Consensus Expectations (as of March 23, 2022)

	Revenue (mils)			EPS	
	2021E	2022E		2021E	2022E
Q1 Mar	\$2A	\$5E	Q1 Mar	\$(0.19)A	\$(0.04)E
Q2 Jun	\$1A		Q2 Jun	\$(0.12)A	
Q3 Sep	\$2A		Q3 Sep	\$0.01A	
Q4 Dec	\$5E		Q4 Dec	\$(0.04)E	
Total	\$10E	\$25E	Total	\$(0.33)E	\$(0.13)E

*Quarterly estimates may not add to annual estimates due to variations in contributing estimates and rounding.

Source: Company report, Refinitiv, and Ascendant Capital Markets estimates

FINANCIAL MODEL

Phunware, Inc.

Income Statement (\$ mils)	Mar-20	Jun-20	Sep-20	Dec-20	2020	Mar-21	Jun-21	Sep-21	Dec-21	2021	Mar-22	Jun-22	Sep-22	Dec-22	2022	Mar-23	Jun-23	Sep-23	Dec-23	2023
Fiscal Year End: December 31	Q1A	Q2A	Q3A	Q4A	FY-A	Q1A	Q2A	Q3A	Q4A	FY-A	Q1E	Q2E	Q3E	Q4E	FY-E	Q1E	Q2E	Q3E	Q4E	FY-E
Total Revenue	2.6	2.2	3.1	2.0	10.0	1.6	1.4	2.2	5.4	10.6	6.0	6.3	6.4	6.4	25.0	7.2	7.5	7.6	7.6	30.0
Cost of Revenues	1.1	0.8	0.9	0.6	3.4	0.7	1.1	1.0	4.2	7.0	3.6	3.8	3.5	3.5	14.4	3.6	3.8	3.4	3.4	14.2
Gross Profit	1.5	1.4	2.2	1.4	6.6	1.0	0.3	1.1	1.2	3.6	2.4	2.5	2.9	2.9	10.7	3.6	3.8	4.2	4.2	15.8
Sales and marketing	0.6	0.3	0.4	0.4	1.7	0.6	0.6	0.7	1.1	3.0	1.3	1.3	1.3	1.3	5.1	1.2	1.3	1.3	1.3	5.1
General and administrative	3.9	3.8	4.3	3.4	15.4	2.8	3.0	3.3	4.2	13.3	4.8	4.7	4.4	4.2	18.1	5.1	4.9	4.2	3.8	18.0
Research and development	0.9	0.4	0.6	0.8	2.6	1.1	0.8	1.2	1.1	4.2	1.3	1.3	1.3	1.3	5.3	1.3	1.4	1.4	1.4	5.4
Restructuring and other			4.5		4.5					0.0					0.0					0.0
Total operating expenses	5.4	4.4	9.7	4.6	24.1	4.4	4.5	5.2	6.4	20.5	7.4	7.3	7.1	6.8	28.5	7.6	7.5	6.9	6.5	28.5
Operating income (loss)	(3.9)	(3.0)	(7.5)	(3.2)	(17.5)	(3.4)	(4.2)	(4.0)	(5.2)	(16.8)	(4.9)	(4.8)	(4.2)	(3.9)	(17.9)	(4.0)	(3.8)	(2.7)	(2.3)	(12.7)
Interest income (expense)	(0.1)	(0.5)	(1.4)	(1.5)	(3.4)	(2.2)	(1.8)	0.0	(0.4)	(4.5)	(0.1)	(0.1)	(0.1)	(0.1)	(0.4)	(0.1)	(0.1)	(0.1)	(0.1)	(0.4)
Other income (expense)	(0.1)	(0.1)	0.3	(1.5)	(1.3)	(6.7)	(2.3)	4.4	(28.0)	(32.6)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Income before income taxes	(4.0)	(3.5)	(8.6)	(6.2)	(22.2)	(12.4)	(8.3)	0.4	(33.7)	(53.9)	(5.0)	(4.9)	(4.3)	(4.0)	(18.3)	(4.1)	(3.9)	(2.8)	(2.4)	(13.1)
Income taxes				0.0	0.0				(0.4)	(0.4)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Net income (loss)	(4.0)	(3.5)	(8.6)	(6.2)	(22.2)	(12.4)	(8.3)	0.4	(33.2)	(53.5)	(5.0)	(4.9)	(4.3)	(4.0)	(18.3)	(4.1)	(3.9)	(2.8)	(2.4)	(13.1)
Nonrecurring/noncash adjustments			4.5		4.5					0.0					0.0					0.0
Net income (pro forma)	(4.0)	(3.5)	(4.1)	(6.2)	(17.7)	(12.4)	(8.3)	0.4	(33.2)	(53.5)	(5.0)	(4.9)	(4.3)	(4.0)	(18.3)	(4.1)	(3.9)	(2.8)	(2.4)	(13.1)
EBITDA	(3.2)	(1.8)	(1.3)	(2.1)	(8.4)	(2.4)	(2.7)	(2.5)	(4.0)	(11.7)	(3.9)	(3.8)	(3.2)	(2.9)	(13.8)	(3.0)	(2.8)	(1.7)	(1.3)	(8.7)
Shares, Basic	40.1	41.9	44.3	51.0	44.3	64.6	71.6	74.3	91.0	75.4	97.0	97.3	97.6	97.9	97.5	98.2	98.5	98.8	99.1	98.7
Shares, Diluted	41.0	41.9	44.3	51.0	44.3	64.6	71.6	74.3	91.0	75.4	97.0	97.3	97.6	97.9	97.5	98.2	98.5	98.8	99.1	98.7
EPS Basic (pro forma)	(\$0.10)	(\$0.08)	(\$0.09)	(\$0.12)	(\$0.40)	(\$0.19)	(\$0.12)	\$0.01	(\$0.37)	(\$0.71)	(\$0.05)	(\$0.05)	(\$0.04)	(\$0.04)	(\$0.19)	(\$0.04)	(\$0.04)	(\$0.03)	(\$0.02)	(\$0.13)
EPS Diluted (pro forma)	(\$0.10)	(\$0.08)	(\$0.09)	(\$0.12)	(\$0.40)	(\$0.19)	(\$0.12)	\$0.01	(\$0.37)	(\$0.71)	(\$0.05)	(\$0.05)	(\$0.04)	(\$0.04)	(\$0.19)	(\$0.04)	(\$0.04)	(\$0.03)	(\$0.02)	(\$0.13)
Margins																				
Gross margin	59%	65%	71%	70%	66%	58%	22%	53%	22%	34%	40%	40%	45%	45%	43%	50%	50%	55%	55%	53%
Sales and marketing	23%	13%	12%	19%	17%	34%	44%	33%	21%	28%	21%	21%	20%	20%	20%	17%	17%	17%	17%	17%
General and administrative	149%	170%	137%	167%	154%	168%	210%	153%	77%	125%	80%	75%	70%	65%	72%	70%	65%	55%	50%	60%
Research and development	33%	17%	18%	40%	26%	64%	59%	54%	21%	39%	21%	21%	21%	21%	21%	18%	18%	18%	18%	18%
Operating margin	-146%	-134%	-240%	-157%	-175%	-207%	-292%	-187%	-96%	-158%	-82%	-77%	-66%	-61%	-71%	-55%	-50%	-35%	-30%	-42%
Tax rate, GAAP	0%	0%	0%	0%	0%	0%	0%	0%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Net margin	-150%	-159%	-274%	-305%	-222%	-751%	-578%	17%	-615%	-503%	-84%	-79%	-68%	-63%	-73%	-56%	-51%	-36%	-31%	-44%
YY % change																				
Total Revenue	-50%	-60%	-44%	-25%	-48%	-38%	-35%	-31%	168%	6%	266%	336%	194%	18%	135%	20%	20%	20%	19%	20%
Gross margin	-43%	-48%	-31%	0%	-34%	-38%	-78%	-49%	-14%	-46%	153%	704%	152%	137%	195%	50%	50%	47%	46%	48%
Sales and marketing	-16%	-58%	-46%	-37%	-39%	-8%	131%	87%	187%	83%	128%	106%	78%	15%	70%	-3%	-3%	2%	2%	-1%
General and administrative	-1%	-5%	14%	-9%	0%	-30%	-20%	-23%	24%	-14%	75%	56%	35%	-1%	37%	5%	4%	-6%	-8%	-1%
Research and development	-34%	-65%	-46%	-9%	-39%	22%	124%	103%	37%	59%	20%	56%	15%	20%	26%	3%	3%	3%	2%	3%
Operating income (loss)	17%	2%	227%	-16%	42%	-12%	41%	-46%	64%	-4%	45%	15%	4%	-25%	6%	-20%	-22%	-36%	-41%	-29%
Net income (loss)	13%	14%	253%	59%	72%	212%	136%	-104%	440%	141%	-59%	-41%	-1254%	-88%	-66%	-19%	-22%	-36%	-40%	-28%
EPS Diluted (pro forma)	-16%	6%	48%	22%	15%	98%	38%	-105%	202%	77%	-73%	-56%	-979%	-89%	-74%	-20%	-23%	-36%	-41%	-29%

Source: Company reports and Ascendant Capital Markets estimates.

Phunware, Inc.

Balance Sheet (\$ mils)	Mar-20	Jun-20	Sep-20	Dec-20	Mar-21	Jun-21	Sep-21	Dec-21	Mar-22	Jun-22	Sep-22	Dec-22	Mar-23	Jun-23	Sep-23	Dec-23
Fiscal Year End: December 31	Q1A	Q2A	Q3A	Q4A	Q1A	Q2A	Q3A	Q4A	Q1E	Q2E	Q3E	Q4E	Q1E	Q2E	Q3E	Q4E
Assets																
Cash and cash equivalents	0.8	0.2	1.1	3.9	23.5	2.7	0.9	23.1	22.1	18.9	15.9	13.0	12.4	10.4	9.0	7.6
Short term investments									0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Accounts receivable, net	0.9	0.9	1.2	0.7	0.9	0.7	1.2	1.0	2.1	2.2	2.2	2.2	2.5	2.6	2.6	2.6
Inventory								2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Deferred income taxes									0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Digital currencies					1.1	0.8	0.8	32.6	32.6	32.6	32.6	32.6	32.6	32.6	32.6	32.6
Prepaid expenses and other	0.5	0.6	0.5	0.3	0.8	1.6	0.7	0.7	1.1	1.1	1.1	1.2	1.3	1.4	1.4	1.4
Total current assets	2.2	1.6	2.8	4.9	26.3	5.7	3.6	60.0	60.5	57.4	54.4	51.5	51.4	49.6	48.2	46.8
Property and equipment, net	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Intangibles, net	26.0	26.0	26.0	26.0	26.0	26.0	25.9	36.5	36.5	36.5	36.5	36.5	36.5	36.5	36.5	36.5
Deferred income tax	0.2	0.2	0.2	0.5	0.5	0.5	0.5	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
Restricted cash	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other	0.3	0.3	0.3	0.3	2.0	1.9	1.8	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Total assets	28.8	28.2	29.4	31.8	54.9	34.2	32.0	99.3	99.7	96.7	93.7	90.8	90.7	88.9	87.5	86.1
Liabilities and stockholders' equity																
Accounts payable	10.7	9.7	9.1	8.5	7.8	7.0	7.1	6.6	12.1	12.5	12.7	12.8	14.5	15.0	15.3	15.3
Accrued expenses	4.4	4.4	10.1	8.4	6.7	4.0	2.9	10.0	9.0	9.4	9.5	9.6	10.8	11.3	11.4	11.5
Deferred revenue	3.1	3.0	3.2	2.4	2.2	2.0	1.8	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
PhunCoin deposits	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
Deferred income tax									0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Warrant liabilities			1.2	1.6	2.5	1.8	1.8	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
Factored receivables payable	0.5	0.4	0.4						0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Short term debt	1.2	1.3	1.7	4.4	10.0	0.1	0.1	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9
Total current liabilities	21.1	20.0	26.9	26.5	30.4	16.2	14.9	30.3	34.8	35.6	35.9	36.0	39.0	40.0	40.4	40.4
Deferred income taxes	0.2	0.2	0.2		0.5	0.5	0.5	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
Warrant liabilities									0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other long term liabilities	0.1	0.2	0.2	0.7	1.4	1.3	1.2	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
Deferred revenue	3.2	2.9	2.0	2.7	2.1	1.8	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
Long term debt	2.9	4.4	4.8	4.0	3.9	3.9	1.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total other liabilities	6.4	7.7	7.2	7.4	8.0	7.6	4.1	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
Preferred stock																
Common stock	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	2.0	3.0	4.0	5.1	6.1	7.1	8.1
Additional paid-in capital	129.4	132.0	135.2	144.2	175.0	177.3	180.9	264.9	264.9	264.9	264.9	264.9	264.9	264.9	264.9	264.9
Retained earnings	(127.6)	(131.1)	(139.6)	(145.8)	(158.2)	(166.5)	(167.5)	(199.3)	(204.4)	(209.3)	(213.6)	(217.6)	(221.7)	(225.5)	(228.3)	(230.7)
Accumulated other comprehensive income	(0.5)	(0.5)	(0.4)	(0.3)	(0.3)	(0.3)	(0.4)	(0.4)	(0.4)	(0.4)	(0.4)	(0.4)	(0.4)	(0.4)	(0.4)	(0.4)
Non-controlling interest									0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total stockholders' equity	1.4	0.5	(4.8)	(2.0)	16.6	10.5	13.0	65.3	61.2	57.3	54.0	51.1	48.0	45.1	43.4	42.0
Total stockholders' equity and liabilities	28.8	28.2	29.4	31.8	54.9	34.2	32.0	99.3	99.7	96.7	93.7	90.8	90.7	88.9	87.5	86.1

Balance Sheet Drivers

	Mar-20	Jun-20	Sep-20	Dec-20	Mar-21	Jun-21	Sep-21	Dec-21	Mar-22	Jun-22	Sep-22	Dec-22	Mar-23	Jun-23	Sep-23	Dec-23
	Q1A	Q2A	Q3A	Q4A	Q1A	Q2A	Q3A	Q4A	Q1E	Q2E	Q3E	Q4E	Q1E	Q2E	Q3E	Q4E
Prepaid as % of total rev	18%	25%	15%	15%	48%	110%	34%	13%	18%	18%	18%	18%	18%	18%	18%	18%
Accounts payable as % of total rev	404%	440%	290%	419%	473%	490%	328%	122%	200%	200%	200%	200%	200%	200%	200%	200%
Accrued expenses as % of total rev	167%	200%	321%	414%	408%	278%	134%	186%	150%	150%	150%	150%	150%	150%	150%	150%
Activity Ratios																
A/R Days Sales Outstanding	31	38	33	30	51	41	51	16	31	31	31	31	31	31	31	31
Book & Cash Value (per share)																
Book Value per Share (diluted)	\$0.03	\$0.01	-\$0.11	-\$0.04	\$0.26	\$0.15	\$0.18	\$0.72	\$0.63	\$0.59	\$0.55	\$0.52	\$0.49	\$0.46	\$0.44	\$0.42
Cash per Share (diluted)	\$0.02	\$0.00	\$0.03	\$0.08	\$0.36	\$0.04	\$0.01	\$0.25	\$0.23	\$0.19	\$0.16	\$0.13	\$0.13	\$0.11	\$0.09	\$0.08
Net cash per Share (diluted)	-\$0.08	-\$0.13	-\$0.12	-\$0.09	\$0.15	-\$0.02	\$0.00	\$0.20	\$0.18	\$0.14	\$0.11	\$0.08	\$0.08	\$0.06	\$0.04	\$0.03

Source: Company reports and Ascendant Capital Markets estimates



Phunware, Inc.

Cash Flow Statement (\$ mils)	Mar-20	Jun-20	Sep-20	Dec-20	2020	Mar-21	Jun-21	Sep-21	Dec-21	2021	Mar-22	Jun-22	Sep-22	Dec-22	2022	Mar-23	Jun-23	Sep-23	Dec-23	2023	
Fiscal Year End: December 31	Q1A	Q2A	Q3A	Q4A	FY-A	Q1A	Q2A	Q3A	Q4A	FY-A	Q1E	Q2E	Q3E	Q4E	FY-E	Q1E	Q2E	Q3E	Q4E	FY-E	
Cash flow from operating activities																					
Net income	(4.0)	(3.5)	(8.6)	(6.2)	(22.2)	(12.4)	(8.3)	(1.1)	(31.8)	(53.5)	(5.0)	(4.9)	(4.3)	(4.0)	(18.3)	(4.1)	(3.9)	(2.8)	(2.4)	(13.1)	
Depreciation	0.0	0.0	0.0	0.0	0.0	0.0	(0.0)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Amortization	0.0	0.0	0.0	0.0	0.1	0.1	(0.1)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Debt related amortization expen	0.0	0.3	2.0	(0.1)	2.2	1.6	1.1	0.0	0.2	2.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Stock comp	0.6	1.1	1.7	1.0	4.5	1.1	1.4	1.5	1.0	4.9	1.0	1.0	1.0	1.0	4.0	1.0	1.0	1.0	1.0	4.0	
Deferred rent					0.0					0.0					0.0					0.0	
A/R reserves	(0.0)	(0.0)	0.0	0.2	0.2	(0.2)	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Deferred income taxes					0.0					0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Change in fair value of warrant liability			(1.2)	0.4	(0.9)	0.9	(0.7)	(0.1)	18.0	18.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Writedowns and impairments		0.1	(0.1)	2.2	2.2	0.1	0.7		(0.8)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Other gains/losses				(0.5)	(0.5)	5.8	2.2	(2.9)	9.4	14.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Other					0.0		0.1	0.2	(0.8)	(0.5)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Changes in operating assets and liabilities:																					
Accounts receivable	0.8	0.0	(0.3)	0.2	0.8	(0.0)	0.3	(0.5)	0.3	(0.0)	(1.1)	(0.1)	(0.0)	(0.0)	(1.2)	(0.3)	(0.1)	(0.0)	(0.0)	(0.4)	
Inventory					0.0				(0.9)	(0.9)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Prepaid expenses & other curre	(0.1)	(0.1)	0.1	0.2	0.1	(0.5)	0.1	0.1	(0.0)	(0.4)	(0.4)	(0.0)	(0.0)	(0.0)	(0.5)	(0.2)	(0.1)	(0.0)	(0.0)	(0.2)	
Income tax					0.0					0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Other assets					0.0					0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Accounts payable	0.9	(0.5)	0.2	(0.1)	0.4	(0.7)	(0.6)	0.0	(0.3)	(1.6)	5.5	0.5	0.2	0.1	6.2	1.7	0.6	0.2	0.0	2.5	
Accrued expenses	0.6	0.2	0.5	(0.3)	1.1	(2.3)	(2.5)	1.9	(1.2)	(4.1)	(1.0)	0.4	0.1	0.1	(0.4)	1.3	0.4	0.2	0.0	1.9	
Deferred revenue	(0.8)	(0.5)	(0.6)	(0.1)	(2.0)	(0.8)	(0.4)	(0.7)	0.8	(1.2)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Other liabilities			4.5	(1.5)	3.0	0.1	(0.5)	(3.2)	2.9	(0.8)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Net cash (used in) provided by	(1.9)	(2.8)	(1.8)	(4.5)	(11.0)	(7.3)	(7.1)	(4.7)	(3.4)	(22.5)	(1.1)	(3.2)	(3.0)	(2.9)	(10.2)	(0.6)	(2.0)	(1.5)	(1.4)	(5.4)	
Cash flow from investing activities																					
Purchases of property and equipment					0.0					0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Purchases of short-term investments					0.0				(41.3)	(41.3)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Acquisitions					0.0	(1.1)	(0.4)		(3.6)	(5.1)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Other					0.0					0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Net cash used in investing activ	0.0	0.0	0.0	0.0	0.0	(1.1)	(0.4)	0.0	(44.9)	(46.4)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Cash flow from financing activities																					
Issuance of debt	3.2	2.8	4.8	4.6	15.4	10.0		(0.0)	4.7	14.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Repayment of debt	(0.6)	(0.7)	(3.4)	(5.3)	(10.1)	(11.8)	(13.3)	(0.0)	(1.1)	(26.2)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Issuance of stock			1.3	7.8	9.2	29.7	(0.0)	2.9	62.1	94.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Proceeds from stock option exe	0.0	0.1	0.0	0.0	0.1	0.1	0.0	0.0	4.7	4.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Other					0.0					0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Dividends and distributions					0.0					0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Cash provided by (used in) fina	2.5	2.2	2.7	7.2	14.6	27.9	(13.3)	2.9	70.5	88.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Effect of exchange rate on cash	(0.1)	(0.0)	0.0	0.1	0.0	0.0	0.0	(0.0)	0.0	(0.0)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Net increase (decrease) in cash	0.6	(0.7)	1.0	2.8	3.7	19.5	(20.8)	(1.8)	22.2	19.1	(1.1)	(3.2)	(3.0)	(2.9)	(10.2)	(0.6)	(2.0)	(1.5)	(1.4)	(5.4)	
Beginning cash and equivalents	0.4	0.9	0.2	1.2	0.4	4.0	23.6	2.8	1.0	4.0	23.1	22.1	18.9	15.9	23.1	13.0	12.4	10.4	9.0	13.0	
Ending cash and equivalents	0.9	0.2	1.2	4.0	4.0	23.6	2.8	1.0	23.1	23.1	22.1	18.9	15.9	13.0	13.0	12.4	10.4	9.0	7.6	7.6	

Source: Company reports and Ascendant Capital Markets estimates

ANALYST CERTIFICATION

Each analyst hereby certifies that the views expressed in this report reflect the analyst’s personal views about the subject securities or issuers. Each analyst also certifies that no part of the analyst’s compensation was, is, or will be, directly or indirectly, related to the specific recommendations or views expressed in this report. The analyst who prepared this report is compensated based upon the overall profitability of Ascendant Capital Markets, LLC, which may, from time to time, include the provision of investment banking, financial advisory and consulting services. Compensation for research is based on effectiveness in generating new ideas for clients, performance of recommendations, accuracy of earnings estimates, and service to clients.

Phunware, Inc.



Source: <https://bigcharts.marketwatch.com/>

Report	Date	Rating	Price Target
1	6/16/2020	Buy	4.00
2	8/17/2020	Buy	4.25
3	11/10/2020	Buy	4.50
4	4/4/2021	Buy	4.75
5	5/19/2021	Buy	5.00
6	8/23/2021	Buy	4.50
7	12/5/2021	Buy	6.00

- Ascendant Capital Markets, LLC has received compensation for advisory or investment banking services from the company in the past 12 months.

IMPORTANT DISCLOSURES

This report has been distributed by Ascendant Capital Markets, LLC and is for the sole use of our clients. This report is based on current public information that we consider reliable, but we do not represent it is accurate or complete, and it should not be relied on as such. This report contains information from various sources, including United States government publications, The Wall Street Journal and other periodicals, Yahoo! Finance and other sources, and is for informational purposes only and is not a recommendation to trade in the securities of the companies mentioned within the report. We seek to update our research and recommendations as appropriate, but the large majority of reports are published at irregular intervals as we consider appropriate and, in some cases, as constrained by industry regulations.

We may have a business relationship with companies covered in this report. Ascendant Capital Markets, LLC may make a market in the securities of the subject company. We and our affiliates, officers, directors, and employees will from time to time have long or short positions in, act as principal in, and buy or sell, the securities or derivatives (including options and warrants) thereof of covered companies referred to in this report. This report is not an offer to sell or the solicitation of an offer to buy any security in any jurisdiction where such an offer or solicitation would be illegal. It does not constitute a personal recommendation or take into account the particular investment objectives, financial situations, or needs of individual clients. Clients should consider whether any information in this report is suitable for their particular circumstances and, if appropriate, seek professional advice, including tax advice. The price and value of the investments referred to in this report may fluctuate.

Following are some general risks that can adversely impact future operational and financial performance and share price valuation: (1) industry fundamentals with respect to legislation, mandates, incentives, customer demand, or product pricing; (2) issues relating

to competing companies or products; (3) unforeseen developments with respect to management, financial condition or accounting policies or practices; or (4) external factors that affect the interest rates, currency, the economy or major segments of the economy. Past performance is not a guide to future performance, future returns are not guaranteed, and loss of original capital may occur. Certain transactions, including those involving futures, options, and other derivatives, give rise to substantial risk and are not suitable for all investors. Our report is disseminated primarily electronically, and, in some cases, in printed form. The information contained in this report is not incorporated into the contents of our website and should be read independently thereof. Copyright Ascendant Capital Markets, LLC. No part of this material may be copied, photocopied or duplicated by any means or redistributed without the prior written consent of Ascendant Capital Markets, LLC.

Risks & Considerations

Risks to attainment of our share price target include balance sheet/liquidity risks, changes and demand for mobile technologies, investor sentiment for investing in technology stocks, and consumer sentiment and industry growth for mobile technology companies, competition, changing macroeconomic factors, and changes in government regulations.

Ascendant Capital Markets, LLC Rating System

BUY: We expect the stock to provide a total return of 15% or more within a 12-month period.

HOLD: We expect the stock to provide a total return of negative 15% to positive 15% within a 12-month period.

SELL: We expect the stock to have a negative total return of more than 15% within a 12-month period.

Total return is defined as price appreciation plus dividend yield.

Ascendant Capital Markets, LLC Rating System

Prior to January 31, 2014, ASCM used the following rating system:

Strong Buy: We expect the stock to provide a total return of 30% or more within a 12-month period.

Buy: We expect the stock to provide a total return of between 10% and 30% within a 12-month period.

Neutral: We expect the stock to provide a total return of between minus 10% and plus 10% within a 12-month period.

Sell: We expect the stock to provide a total return of minus 10% or worse within a 12-month period.

Speculative Buy: This rating is reserved for companies we believe have tremendous potential, but whose stocks are illiquid or whose equity market capitalizations are very small, often in the definition of a nano cap (below \$50 million in market cap). In general, for stocks ranked in this category, we expect the stock to provide a total return of 50% or more within a 12-month period. However, because of the illiquid nature of the stock's trading and/or the nano cap nature of the investment, we caution that these investments may not be suitable for all parties.

Total return is defined as price appreciation plus dividend yield.

Ascendant Capital Markets, LLC Distribution of Investment Ratings (as of January 15, 2022)

Rating	Count	Percent	Investment Banking Services Past 12 months	
			Count	Percent
Buy	40	98%	16	40%
Hold	0	0%	0	0%
Sell	1	2%	0	0%
Total	41	100%	16	39%

Other Important Disclosures

Our analysts use various valuation methodologies including discounted cash flow, price/earnings (P/E), enterprise value/EBITDAS, and P/E to growth rate, among others. Risks to our price targets include failure to achieve financial results, product risk, regulatory risk, general market conditions, and the risk of a change in economic conditions.

Dissemination of Research

Ascendant Capital Markets, LLC research is distributed electronically via the Thomson Reuters platforms, Bloomberg, Capital IQ and FactSet. Please contact your investment advisor or institutional salesperson for more information.

General Disclaimer

The information and opinions in this report were prepared by Ascendant Capital Markets, LLC. This information is not intended to be used as the primary basis of investment decisions and because of individual client objectives it should not be construed as advice designed to meet the particular investment needs of any investor. This material is for information purposes only and is not an offer or solicitation with respect to the purchase or sale of any security. The reader should assume that Ascendant Capital Markets, LLC may have a conflict of interest and should not rely solely on this report in evaluating whether or not to buy or sell securities of issuers discussed herein. The opinions, estimates, and projections contained in this report are those of Ascendant Capital Markets, LLC as of the date of this report and are subject to change without notice. Ascendant Capital Markets, LLC endeavors to ensure that the contents have been compiled or derived from sources that we believe are reliable and contain information and opinions that are accurate and complete. However, Ascendant Capital Markets, LLC makes no representation or warranty, express or implied, in respect thereof, takes no responsibility for any errors and omissions contained herein, and accepts no liability whatsoever for any loss arising from any use of, or reliance on, this report or its contents. Information may be available to Ascendant Capital Markets, LLC, or its affiliates that is not reflected in this report. This report is not to be construed as an offer or solicitation to buy or sell any security.

Additional Disclosures

Ascendant Capital Markets, LLC is a broker-dealer registered with the United States Securities and Exchange Commission (SEC) and a member of the FINRA and SIPC. Ascendant Capital Markets, LLC is not a Registered Investment Advisor nor is it an investment advisor registered with the Securities and Exchange Commission or with the securities regulators of any state, and at the present time is not eligible to file for federal registration.