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FOUNDATION

September 27, 2022 11:01 PM GMT

Darktrace PLC | Europe

Self-learning Cyber Defense. Initiate at Equal-weight

Stock Rating	Industry View	Price Target
Equal-weight	In-Line	425p

Darktrace is a key emerging cybersecurity vendor with an expanding AI/ML-centric product set. Darktrace's rapid pace of innovation is a competitive edge and the greenfield opportunity is significant. Risk-reward is skewed to the upside, albeit we see much of our base case growth in valuation.

A compelling (and rare) European high-growth market penetration story, but several factors keep us Equal-weight: We have few reservations around the company's product offering and market positioning, and we see this evidenced in the company's historical 50%+ revenue CAGR delivered across FY18-22. Moreover, we see cybersecurity as a software spending category as likely to remain both a priority, as well as a defensive spend category, into 2023 (even against a potentially tough macro backdrop), while the launch of the PREVENT product family should help build momentum from 2H23. We also take confidence from improving trends in key metrics in FY22; namely improved NRR, lower gross churn, and strong net cc ARR added. However, despite these favourable dynamics, three elements keep us Equal-weight on Darktrace for now; **1)** although we see a strong product set, we believe customers would not normally have specific budget carved out for a solution such as Darktrace's. In a tougher macro, we see purchases of Darktrace as potentially more discretionary, and thus less room for near-term earnings upgrades, **2)** we consider that valuation already discounts significant growth and margin expansion from here. The stock trades on c. 3.4x CY23e EV/Sales, c. 60x adj. P/E or c. 23.6x CY23e EV/FCFF (but if we were to expense P&L share-based compensation (SBC), this rises c. 43.5x), **3)** the broader market/valuation environment for high-growth, high-multiple stocks remains challenging. We set our price target at 425p, representing 32% upside potential, based on a blend of a DCF-driven, and peer-multiples based valuation approach.

What could swing our stock view more positively? On balance, we see more net positives from our Equal-weight stance, compared to negatives. To build conviction on the positives side, we will look for evidence of building customer traction around the newly-launched PREVENT product family, alongside more broad suite cross-sell and momentum in new customer additions. In terms of risk factors that could impact the durability of growth, we think the trajectory of Darktrace's net retention rate (NRR), as well as trends in market competition, will be key.

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Darktrace PLC (DARK.L, DARK LN)

Technology - Software & Services / United Kingdom

Stock Rating	**Equal-weight**
Industry View	**In-Line**
Price target	**425p**
Shr price, close (Sep 26, 2022)	322p
52-Week Range	1,003-281p
Mkt cap, curr (mn)	US$2,626
Net debt (06/23e) (mn)*	US$(454)
EV, curr (mn)*	US$2,235

* = GAAP or approximated based on GAAP

Fiscal Year Ending	**06/22**	**06/23e**	**06/24e**	**06/25e**
Sales / Revenue (US$ mn)**	**415**	**542**	**713**	**904**
EBITDA (US$ mn)**	91	96	132	180
EBIT (US$ mn)**	50	40	53	75
EPS (US$)**	**0.06**	**0.05**	**0.07**	**0.09**
ModelWare EPS (US$)	**0.01**	**(0.01)**	**0.01**	**0.02**
EPS (US$)§	0.03	0.03	0.06	0.12
P/E**	64.8	73.1	52.4	37.9
EV/revenue*	5.6	4.0	2.9	2.1
EV/EBIT**	46.3	54.2	38.6	25.1
FCF yld ratio (%)**	4.0	2.4	4.6	6.0
Net debt (US$ mn)*	(391)	(454)	(578)	(740)

Unless otherwise noted, all metrics are based on Morgan Stanley ModelWare framework
§ = Consensus data is provided by Refinitiv Estimates
** = Based on consensus methodology
* = GAAP or approximated based on GAAP
e = Morgan Stanley Research estimates

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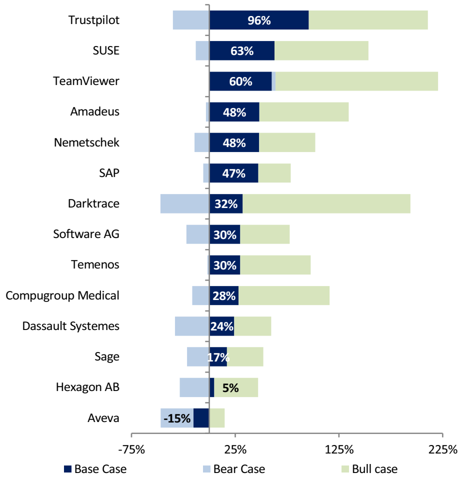
Longer-term journey towards bottom-line profitability will be important: In the current market environment, we see increased investor focus on corporate profitability. While we estimate Darktrace will deliver a near 18% adj. EBITDA margin in FY23, SBC charges remain elevated (MSe c. 9.5% of sales), while there are not immaterial D&A charges relating to appliance depreciation. We forecast our FY23 adjusted EBIT margin at c. 7% of sales, but therefore negative including SBC. In the long term (and in-line with the company's framework), we do not see why Darktrace cannot reach mid-20s% adj. EBIT margins (we assume closer to 20% inc-SBC). However, we expect progress against this to be relatively gradual as the focus over the intermediate term remains concentrated on growth and capturing a larger slice of the market opportunity.

A high-growth business addressing a constantly expanding attack surface: Across FY18-22, Darktrace compounded revenue growth (nearly entirely organically) at c. 51% p.a., increasing from c. $79m in FY18 to c. $415m in FY22. The digital estate of organisations continues to expand, driven by secular trends such as remote working and device proliferation. Ultimately, this drives a broader potential threat surface to be protected. Darktrace believes it has penetrated c. 7.4k of 150k potentially addressable organisations (c. 5%). Our latest AlphaWise CIO survey data confirms that cybersecurity spending is the #2 spending priority for surveyed US/EU CIOs in 2022, as well as being the #1 most defensive project area (i.e. least likely to be cut in the case of an economic downturn).

Leading with its Cyber AI Loop, broadening product suite creates differentiation: Rather than traditional cybersecurity methods using the likes of rules-based or signature-based approach to threat detection, Darktrace uses AI/ML to learn the 'pattern of life' of an organisation. From this, the software is able to detect abnormalities, enabling it to detect zero-day threats. In addition, Darktrace has broadened its product portfolio over recent years, initially from a detection product (Enterprise Immune System), to now include areas such as investigation and response, and prevention. While we believe it is fair to define the company's historical core market as Network Detection & Response (NDR), it has become increasingly clear over the past few years that the overall vision, sales approach, and product suite is now much more wide-ranging, covering areas such as Prevention, Email Security, Threat Intelligence, and Security Orchestration & Response. There is a clear trend that organisations are consolidating their security spend into fewer vendors and simplifying their cybersecurity software landscape. While (today) we consider that Darktrace is additive to the landscape rather than displacing specific vendors, over time we believe Darktrace's approach to offer a breadth of functionality can be valuable differentiation against new competition.

Our revenue/adj. EBITDA forecasts are broadly in-line with guidance/consensus for FY23/24: We forecast revenues rising c. 38% org. to $542m in FY23 (in-line with consensus), and then c. 32% to $713m in FY24 (c. 2% above consensus). On adjusted EBITDA, we look for c. $96m in FY23 (17.8% margin), 4% above consensus, while we are 1% above consensus on FY24 (MSe c. $132m).

Exhibit 1: Software sub-sector ratings



Source: Morgan Stanley Research estimates (priced as of 26/09/22)

Key facts and investment positives/concerns

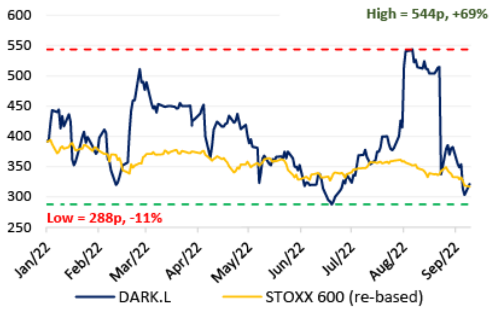
Exhibit 2: Key facts/figures

DARKTRACE

Share price	322p	MS price target	425p	Upside/downside	+32.2%

Reuters ticker/code	**DARK.L**
ISIN	GB00BNYK8G86
IPO date	Apr-2021
Fiscal year-end	**30-June**
Country of listing	United Kingdom
Country of HQ	**United Kingdom**
GICS industry	Software
GICS sub-industry	**Systems Software**

MS key valuation ratios		
$m	CY22E	CY23E
Market cap	**2,615**	**2,644**
EV bridge items	*-420*	*-521*
Enterprise value	**2,195**	**2,123**
Net cash/(debt)/EBIT		*11.3x*
EV/sales	4.6x	3.4x
Adjusted P/E	**67.1x**	**60.5x**
FCF yield	**3.6%**	**3.8%**
FCFF yield	4.1%	4.2%
Dividend yield	**0.0%**	**0.0%**



Historical share price return	
Year-to-date return	**-23.5%**
Last 1-month return	-38.7%
Last 3 months return	-4.8%
Last 6 months return	-27.9%
Last 1-year return	**-62.8%**
Last 3-years return	**N/A**
Last 5-years return	**N/A**

MS key P&L forecasts							
$m	FY19A	FY20A	FY21A	FY22A	FY23E	FY24E	FY25E
Revenues	**137.0**	**199.1**	**285.1**	**415.5**	**542.2**	**712.5**	**903.6**
Organic ex-FX growth	*75.6%*	*47.0%*	*39.0%*	*46.7%*	*37.5%*	*31.7%*	*26.8%*
Adjusted EBITDA	**-11.3**	**08.9**	**33.5**	**91.4**	**96.3**	**132.2**	**180.5**
Adjusted EBITDA margin	*-8.2%*	*4.5%*	*11.7%*	*22.0%*	*17.8%*	*18.5%*	*20.0%*
Adjusted diluted EPS				**0.06**	**0.05**	**0.07**	**0.09**
Adj. diluted EPS growth					*-13.7%*	*39.4%*	*38.5%*

Source: Refinitiv data (as of 26/09/22), Company Data, Morgan Stanley Research estimates (E)

Investment positives

Rapid revenue growth since inception in 2013: Darktrace has rapidly scaled revenues to c. $415m in 2022. The group's AI-enabled product offering has also significantly expanded, from an initial focus on threat detection, to also now include threat prevention, investigation and response.

Playing in the high-growth cybersecurity market: The cyber-threat landscape remains highly dynamic; 2022 UK government survey data suggests almost 40% of UK businesses identified a cyber attack over the past 12 months. Our Morgan Stanley AlphaWise surveys show that spend on security software is both a CIO imperative and is a defensive area of spend. These factors support high growth in the overall cybersecurity market; IDC forecasts a c. 12% 2021-26 CAGR, with the cybersecurity software market globally reaching $137bn in 2026.

Positive trends in key metrics: Customer ARR has steadily increased, from c. $61k at FY20 end to c. $65k at FY22 end (in MSe FY22 end FX). Net ARR retention has risen from c. 101% in FY18 to c. 105.5% at FY22 end. Similar strong growth has been seen in the net $ cc ARR added in recent years.

Investment concerns

Competition and tech disruption: While we see Darktrace as a market disruptor, there is increasing competition within specific product areas. For example, using Network Detection & Response (NDR) as a proxy for threat detection, we see increasing competition over recent years from large vendors (via M&A) and small newer market entrants.

Low adj. EBIT (inc-SBC margins): Although adj. EBITDA profitable (c. 22% in FY22), the adj. EBIT margin was c. 12%, and this reduced to c. 2% including SBC charges in FY22. Reflecting increased cost investments in FY23, we expect adj. EBIT margins inc-SBC to return to negative in FY23.

Potential reputational risk: Per Darktrace's 2021 IPO Prospectus, "The Group may face reputational risk arising out of unlawful, and allegedly unlawful, activities in connection with the sale of Autonomy and related matters". While in a statement in May, Darktrace said that "Neither Darktrace nor any of its acting executives was a party to the civil proceedings" or "... the target of any investigation", previous media headlines on the subject have had a material impact on the share price.

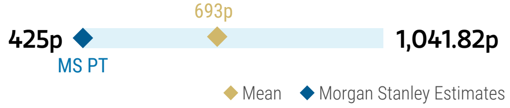
Risk Reward – Darktrace PLC (DARK.L)

Solid market positioning and large market opportunity, but relative Equal-weight

PRICE TARGET 425p

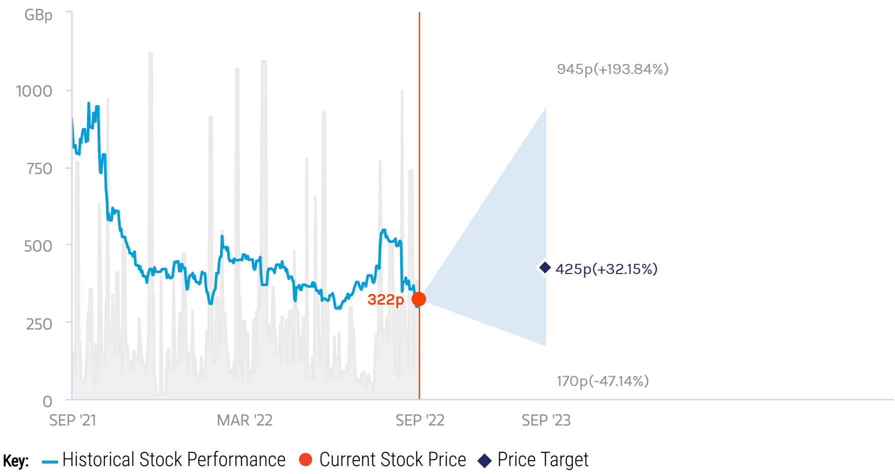
Average of two methods: 1) 10-year DCF, using a 9.5% WACC, and 2.5% terminal growth rate, 2) 6.0x EV/Sales multiple, reflecting broader cybersecurity software peer valuation levels

Consensus Price Target Distribution



Source: Refinitiv, Morgan Stanley Research

RISK REWARD CHART

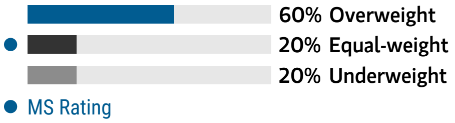


Source: Refinitiv, Morgan Stanley Research

EQUAL-WEIGHT THESIS

- High-growth cybersecurity vendor, with a broad product portfolio covering AI/ML-enabled detection, response, investigation and prevention. We see a significant greenfield opportunity (c. 7.4k current customers vs. Darktrace's estimate of c. 150k addressable companies).
- Differentiated approach to cybersecurity using AI/ML techniques to identify anomalies within the customers' IT environment.
- History of delivering strong growth since inception; Darktrace delivered a c. 51% revenue CAGR FY18-22, and we forecast a 28% CAGR for FY22-26.
- However, valuation incorporates significant mid-term organic growth, as well as margin elevation from mid-single digits on adj. EBIT to mid-20s.

Consensus Rating Distribution



Source: Refinitiv, Morgan Stanley Research

Risk Reward Themes

New Data Era:	*Positive*
Secular Growth:	*Positive*
Technology Diffusion:	*Positive*

View descriptions of Risk Rewards Themes here

BULL CASE 945p

Expanding addressable market drives higher growth

Darktrace executes strongly on both expanding spend with existing customers as well as new customer acquisition. New product families (e.g. Prevent, Heal) are well received. As a result, the FY23-26 revenue CAGR is c. 30%, and the FY26-33 CAGR is c. 13.5%. Our bull case assumes c. 25% addressable company penetration with a 2x current ARR uplift. Adj. EBIT margins (ex-SBC) reach c. 28% in terminal state. We apply a 3% terminal growth rate. Our DCF-derived bull case implies c. 10x FY24 EV/Sales.

BASE CASE 425p

Durable growth and margin reach target at maturity

Derived from a blend of a base case DCF and a FY23 EV/Sales approach. Darktrace executes strongly on new business growth with a c. 27% revenue CAGR across FY23-26, c. 7% FY26-33. This effort is aided by a continual expansion of the product suite (Prevent & Heal). In tandem, as the business matures and operating leverage comes through, Darktrace significantly ramps up its adj. EBIT margin profitability towards typical enterprise software levels at maturity (MSe c. 24% in terminal state).

BEAR CASE 170p

Competition bites and growth decelerates faster

In our bear case we assume that Darktrace's growth slows down more rapidly than our base case, as the NDR software category matures and product expansion fails to gain traction. By FY33, our forecast bear case revenues are c. $1.1bn (vs. c. $2.2bn base case), with a FY23-26 revenue CAGR of c. 17%, c. 3.5% FY26-38. Competition and higher cost intensity subsequently drives adjusted EBIT margins materially lower than target, at c. 15% on adj. EBIT (ex-SBC). We also apply lower 2% terminal growth.

Risk Reward – Darktrace PLC (DARK.L)

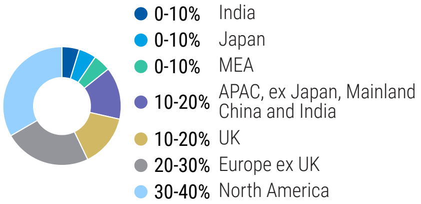
KEY EARNINGS INPUTS

Drivers	2022	2023e	2024e	2025e
MSe annually recurring revenue (Y FX) (US$, mn)	485	634	815	1,022
MSe y/y cc growth (%)	47.3	38.4	31.7	26.8
Adjusted EBIT margin (%)	12.0	7.4	7.4	8.3

INVESTMENT DRIVERS

- Level of net retention rate
- Level and trajectory of constant currency net ARR additions
- Product launches and market reception to Prevent and (future) Heal product areas
- Potential M&A leveraging net cash balance sheet position
- 1H23 results

GLOBAL REVENUE EXPOSURE



Source: Morgan Stanley Research Estimate
View explanation of regional hierarchies here

RISKS TO PT/RATING

RISKS TO UPSIDE

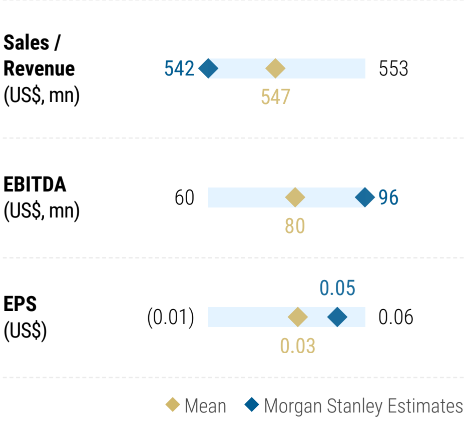
- Improvements in existing customer economics (via higher net retention rate, or cross-sell)
- Higher rate of new customer acquisition than we expect (driving cc ARR adds)
- M&A which expands addressable market and cross-sell opportunity

RISKS TO DOWNSIDE

- Lower-than-expected improvements in profitability trajectory
- Intensifying competition in core network detection
- XDR market growth cannibalises part of NDR
- Cyberbreach

MS ESTIMATES VS. CONSENSUS

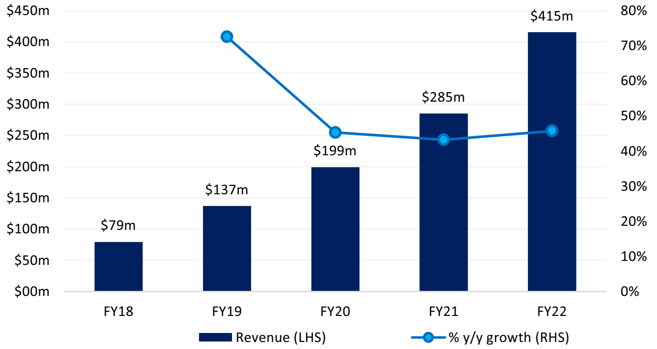
FY 2023e



Source: Refinitiv, Morgan Stanley Research

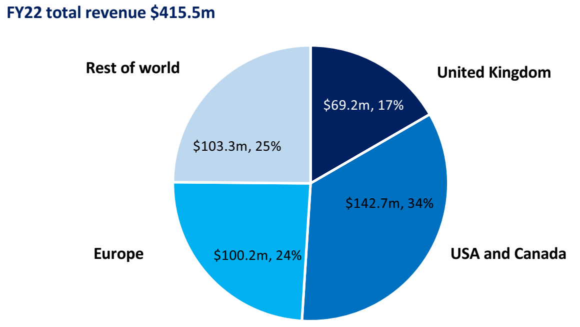
Company history and position today

Exhibit 3: Darktrace's revenues increased from c. $79m in FY18 to >$400m in FY22



Source: Company data, Morgan Stanley Research

Exhibit 4: FY22 geographic revenue mix



Source: Company data, Morgan Stanley Research

Founded in 2013 in Cambridge, UK: The founding employees mainly had backgrounds in mathematics /machine learning /UK intelligence, and they sought to apply their skills into the cybersecurity industry.

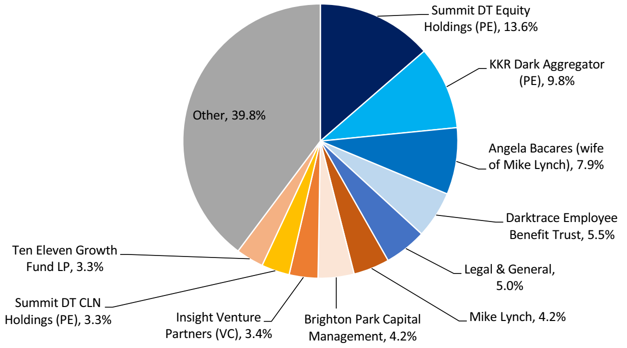
Leading with Artificial Intelligence/Machine Learning (AI/ML) technology: Compared to the traditional approach of cybersecurity, which is to look up identified threats against a catalogue of existing known threats, Darktrace's technology learns the behavioural patterns of an organisation and to be able to detect - at the margin - when a threat appears 'abnormal'. Through machine learning techniques, the software will self-refine over time, becoming smarter about the significance of each newly identified threat, and reducing the density of false-positive high-threat-level incident scores. Darktrace's first product focused on threat detection was called the Enterprise Immune System (EIS), which launched in 2014.

Scaling into a >$400m revenue business: Darktrace's FY22 revenue was c. $415m, a c. 51% CAGR since FY18, achieved nearly entirely organically. Revenues are almost exclusively in the form of subscription contracts, which have 3-year terms. The majority (c. 75%) of customers are invoiced annually in advance; the remainder are either invoiced the full contract value in advance, or quarterly or monthly in advance. The revenue mix is well diversified globally, with c. 34% of revenue in the US/Canada, 17% in the UK, 24% in Europe, and 25% in RoW. Today, the company has around 7.4k total customers, with annually recurring revenue (ARR) per customer around $65k (in MSe FY22 end FX).

Darktrace has broadened out its product offering over time: After starting with the Enterprise Immune System, Darktrace has added new product families over time for threat investigation, response, and prevention. Cross-selling is a key part of the strategy, with the vast majority (89%) of customers taking more than 1 product (at FY22). Approximately two-thirds of sales are direct, with a structure of (i) enterprise field sales, (ii) mid-market sales, and (iii) inside sales for high-velocity SMB customers.

Prior to the IPO, Darktrace undertook a series of funding rounds: The Series A was with Talis Capital in February 2014 for c. $10m, through to a c. $50m Series E raise with Vitruvian Partners in September 2018, as well as a convertible loan note offering to a variety of parties in July 2020. These raises are reflected in PE/VC firms accounting for a significant share of the overall company ownership. Darktrace completed its IPO in April 2021 at 250p/share.

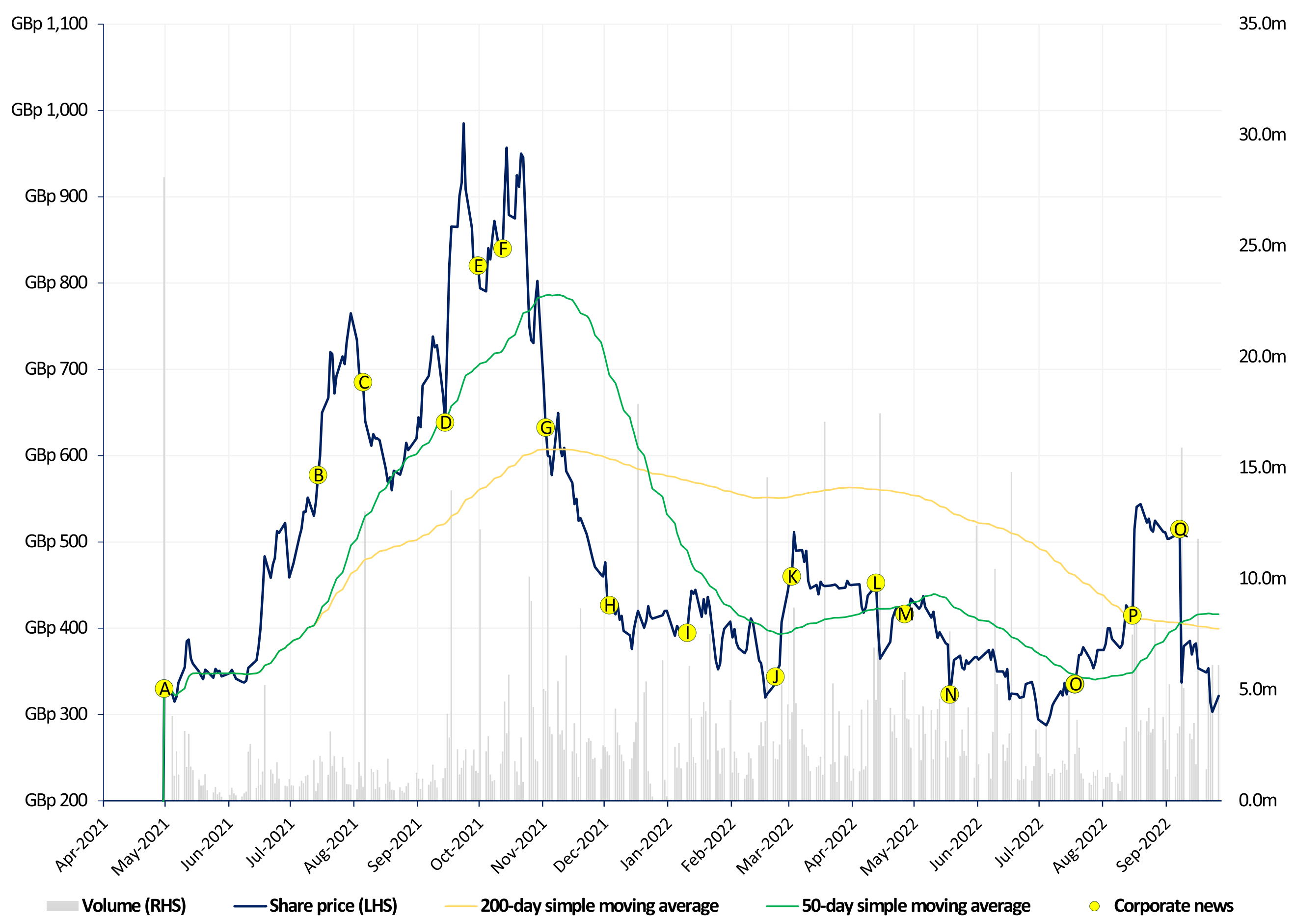
Exhibit 5: Current shareholder structure



NB: PE = Private Equity, VC = Venture Capital
Source: Refinitiv data, Morgan Stanley Research

Annotated share price chart

Exhibit 6: Share price chart (April 2021 - September 2022)



A) April 2021: First day of trading closes at 330p, up 32% on its 250p IPO price. c. £171m of gross proceeds raised

B) July 2021: Maiden trading update for FY21 (ending 30th June). FY22 expectations raised

C) August 2021: c. £144m secondary placing from pre-IPO shareholders at 620p (vs. 685p prior close)

D) September 2021: Full FY21 results. Increase to FY22 revenue growth, cc ARR, and adj. EBITDA margin expectations

E) October 2021: c. £188m secondary placing from pre-IPO shareholders at 750p (vs. 820p prior close)

F) October 2021: 1Q22 update. cc guidance unchanged but FX prompts revenue guidance uplift

G) November 2021: c. £64m secondary placing from pre-IPO shareholders at 580p (vs. 633p prior close)

H) December 2021: £30m share buyback announced, to acquire up to 4m shares

I) January 2022: 1H22 trading update, with raised FY22 cc ARR and revenue guidance as well as adj. EBITDA margin

J) February 2022: Acquisition of Cybersprint announced for €47.5m in cash and equity

K) March 2022: Full 1H22 results. Increase to FY22 revenue growth, cc ARR, and adj. EBITDA margin expectations

L) April 2022: 3Q22 trading update. Further raise to FY22 guidance

M) April 2022: c. £25m secondary placing from management/employees at 410p (vs. ~416p prior close)

N) May 2022: Statement on media speculation about the company in relation to civil proceedings around Autonomy

O) July 2022: 4Q22 exceeds guidance, FY23 guidance above consensus expectations, PREVENT product family launched

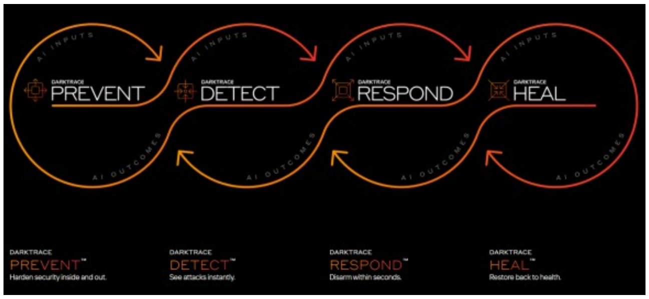
P) August 2022: Receipt of preliminary approach from Thoma Bravo regarding a potential offer for the company

Q) September 2022: Offer talks terminated, FY22 results issued. In-line with pre-release, barring small revenue adjustment

Source: Refinitiv share price data, Morgan Stanley Research

Product Overview

Exhibit 7: Darktrace's Cyber AI Loop / 'Cyber AI' Platform



Source: Darktrace

Expansion from one product family to multiple that run in synergy: Darktrace initially launched with its flagship detection product, but today the product set is far broader and spans three product families; ***PREVENT***, ***DETECT***, and ***RESPOND***. As the names suggest, the intention of the solutions are to help prevent cyberattacks, detect those that do occur, and to respond to attacks. The fourth product family (called ***HEAL***) will focus on the post-attack remediation process; this is currently in R&D and we do not expect it to launch until 2H23 at the earliest.

Deployment flexibility and broad digital estate coverage: Trial deployments take c. 1 hour. Darktrace's products are cloud-native, but can also be deployed into on-premise environments. Alongside the software installation, virtual or physical Darktrace appliances (encrypted devices that can only be used to run Darktrace software) are typically deployed onto the customer's premises. Darktrace's products can help protect a range of technology architectures, from cloud, to applications, the network, email and operational technology (e.g. factory machines).

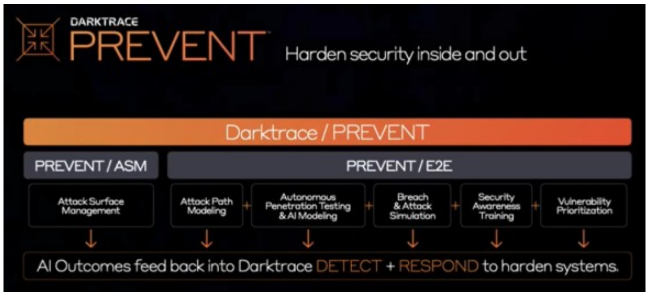
Darktrace offers customers Proof-of-Value (POV) trials: The POV typically runs as a 30-day free trial, which is run identically across sectors and all company sizes. With the technology demonstrating its own efficacy, this enables the company's strategy for the sales team running these sales processes to be largely new (talented) university graduates. Darktrace indicates that 74% of trial deployments in 2020 detected 'serious vulnerabilities' that had often evaded other installed cyberdefenses. The company pursues a 'land-land-land' approach to new sales, attempting to sell as much of the broad portfolio as possible.

(1) DETECT - *Darktrace's Enterprise Immune System:* The EIS was Darktrace's first product, and it forms the core of the group's product platform. Embedded with Darktrace's AI/ML technology, the EIS seeks to learn the 'normal' behaviour (or '*pattern of life*') of an organisation, and then it looks to detect changes at the margin which diverge from the expected 'normal' behaviour. The EIS has modules for both the enterprise and the industrial environment (e.g. IoT sensors, factory controllers). Per the name, this is analogous to the Human body's ability to detect previously unseen threats. What may constitute diverging from normal? By way of example, it may be a reprogram request, a new connection from an OT device from an IT device, a transfer of sensitive data, repeated administrative credential usage, a virtual machine beaconing to a rare domain, or an email containing suspicious URLs.

Within the Detect product family is Darktrace's investigation tool called Cyber AI Analyst (launched in 2019). Cyber AI Analyst automates the triage, interpretation, and reporting on security incidents, augmenting the human investigation process. Steps in the investigation process include monitoring and logging live events, building a threat hypothesis, and root cause analysis. Darktrace claims that the product can reduce the triaging time by up to 92%, in part by automating the write-up of the investigation reports.

(2) PREVENT: Darktrace launched PREVENT into general availability in August 2022. While the focus until this launch had been on products that detect and respond to new threats, the PREVENT offering is aimed at stopping these attacks in the first instance, by proactively hardening the security architecture of a company, making it harder to infiltrate. The PREVENT offering reflects a combination of the company's internal R&D efforts, as well an acquisition made in early 2022 of Netherlands-based Cybersprint. Cybersprint's technology is focused on 'Attack Path Modelling' (APM). The goal of this is to identify external pathways vulnerable to an attack within an organisation, and then to harden these pathways. By providing an external view of an organisation (e.g. its web domain and social media footprint), the technology complemented Darktrace's internal view of customers. The purchase price was €47.5m in cash and stock, a multiple of c. 12.5x ARR.

Exhibit 8: Darktrace PREVENT product functionality

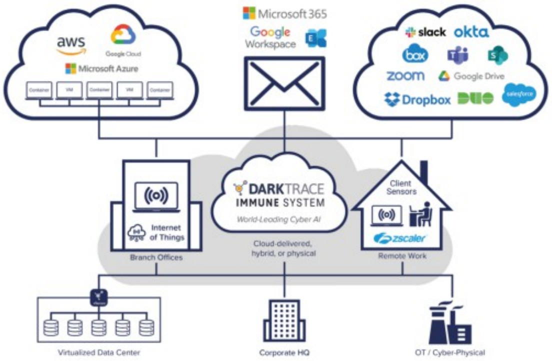

DARKTRACE
PREVENT
Harden security inside and out
Darktrace / PREVENT
PREVENT / ASM
PREVENT / E2E
Attack Surface Management
Attack Path Modeling
Autonomous Penetration Testing & AI Modeling
Breach & Attack Simulation
Security Awareness Training
Vulnerability Prioritization
AI Outcomes feed back into Darktrace DETECT + RESPOND to harden systems.

Source: Darktrace

(3) RESPOND - Antigena: Antigena is Darktrace's response tool, with product areas including Network (launched in 2016), Email (launched 2019), and SaaS (launched 2019). It has both autonomous and human intervention modes. In autonomous mode, the software automatically takes action against flagged attacks/threat. In human intervention mode, once an attack or threat is flagged, an individual at the organisation will manually choose how to defend against it. Antigena has numerous methods of responding to threats (including via integrations via third-party response tools), including blocking connections, locking email links/attachments, forcing SaaS logouts, and quarantining endpoint devices. An overview of actions taken can be seen through the Darktrace Threat Visualizer interface and via the Darktrace Mobile App.

HEAL not yet launched but under development: HEAL is anticipated to represent the fourth part of Darktrace's Cyber AI loop. It will aim to help organisations "restore assets and systems affected by cyber-attacks to trusted operational states through AI assistance by automating remediation and recovery planning, decisions, actions and communications." Darktrace's website mentions that HEAL is expected to enter general availability in 2023.

Exhibit 9: Darktrace provides protection for an organisation's digital estate


aws
Google Cloud
Microsoft Azure
Container
VM
Container
VM
Container
Microsoft 365
Google Workspace
slack
okta
box
zoom
Google Drive
Dropbox
DUO
salesforce
Internet of Things
Branch Offices
DARKTRACE
IMMUNE SYSTEM
World-Leading Cyber AI
Cloud-delivered, hybrid, or physical
Client Sensors
zscaler
Remote Work
Virtualized Data Center
Corporate HQ
OT / Cyber-Physical

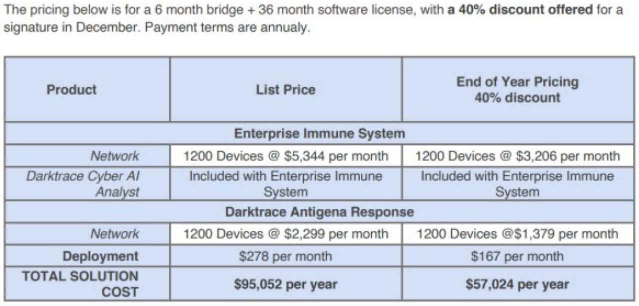
Source: Darktrace

Darktrace has accumulated an extensive patent family: At the end of FY22, Darktrace had over 115 patent applications filed (with 30+ granted). These generally cover a range of the company's employed AI or ML concepts. Over the longer term, management has indicated that it believes Darktrace's AI/ML approaches have applicability into other software product areas, beyond the remits of just cybersecurity.

An open architecture approach: Darktrace integrated with a broad number of third-party vendors and platforms, as well as specific cybersecurity product categories (such as Security Information & Event Management, and Security Orchestration and Response). Example third-party integrations include Amazon Web Services, Microsoft Azure, Carbon Black, Crowdstrike Falcon, and Palo Alto Networks' next generation firewalls. The company also has partnerships where appropriate; for example, Darktrace partnered with Microsoft in May 2021. The partnership covers several areas: (i) Antigena Email is hosted on Azure and listed on the Azure Marketplace; (ii) Darktrace is integrated with Azure Sentinel (Microsoft's cloud-native SIEM); and (iii) Users can connect Darktrace to Microsoft Defender for Endpoint.

Average annually recurring revenue per customer of c. $65,000 (in MSe FY22 end FX): Darktrace typically sells its products on 3-year contracts, meaning the average contract value (by grossing ARR * 3) is c. $195k. The exact actual average contract length is c. 33 months. The company typically prices its products on a per device, per IP address, or per number of employees basis. Looking at public UK contract data, we see contracts with various public sector institutions this year carrying a total average contract value broadly around £300k. We show an example of a more detailed pricing quote for Darktrace below.

Exhibit 10: Example product pricing quote (for City of Oregon)



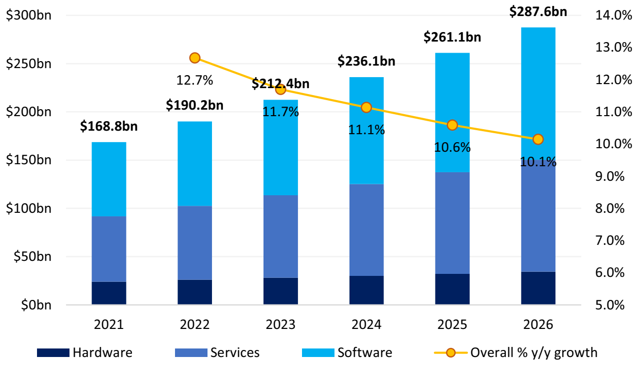
The pricing below is for a 6 month bridge + 36 month software license, with **a 40% discount offered** for a signature in December. Payment terms are annualy.

Product	List Price	End of Year Pricing 40% discount
Enterprise Immune System		
Network	1200 Devices @ $5,344 per month	1200 Devices @ $3,206 per month
Darktrace Cyber AI Analyst	Included with Enterprise Immune System	Included with Enterprise Immune System
Darktrace Antigena Response		
Network	1200 Devices @ $2,299 per month	1200 Devices @$1,379 per month
Deployment	$278 per month	$167 per month
TOTAL SOLUTION COST	**$95,052 per year**	**$57,024 per year**

Source: Darktrace business proposal per online company data, July 1 2021 pricing

Cybersecurity Market Overview

Exhibit 11: Overall cybersecurity market growth

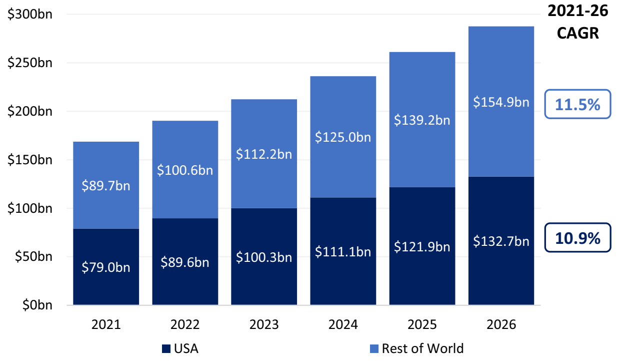


Source: IDC market size/split data and forecasts, Morgan Stanley Research

A high-growth ~$169bn market: IDC estimates the cybersecurity market will grow at a c. 11% CAGR, from c. $169bn in 2021 to c. $288bn in 2026. CIOs/ Chief Security Offers (CSOs) continue to look to harden their IT environments and protect their infrastructure, in what is a heightened security threat environment. This dynamic is playing out at a time when there are also rising regulatory and compliance requirements, as well as a broadening attack surface area (as organisations' device landscapes grow and become more complex). At the software vendor level, demand growth is being driven by greenfield penetration of existing cybersecurity solutions, as well as drivers such as pricing, and new category growth.

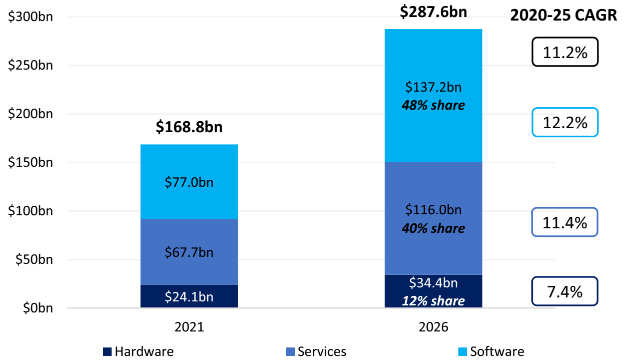
The US market dominates the regional mix: IDC estimates that the US market accounted for c. 47% ($79bn) of the total market in 2021. US and RoW growth rates are expected to be similar at 10.9% and 11.5% respectively.

Exhibit 12: Cybersecurity market growth by region



Source: IDC market size/split data and forecasts, Morgan Stanley Research

Exhibit 13: Cybersecurity market growth by revenue type

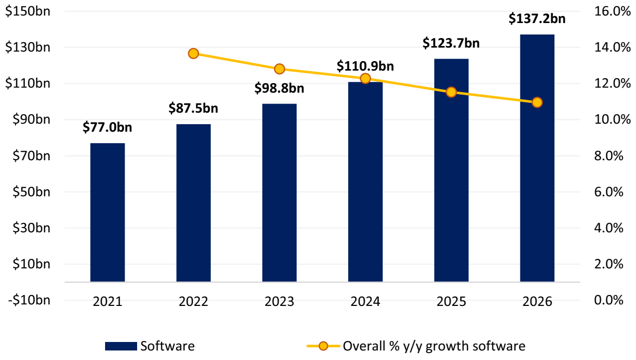


Source: IDC market size/split data and forecasts, Morgan Stanley Research

Software and services form the majority of the total market size: Together, IDC forecasts that cybersecurity software and services accounted for c. 88% of the total market in 2021, with software comprising 48pps of this. We focus in on the software market given this is where Darktrace is predominantly focused. Within the hardware and services segments are spending sub-categories such as network security hardware (firewalls, VPNs, Unified Threat Management), and cybersecurity IT services (e.g. consulting, systems integration, support security services, managed security services).

Overall cybersecurity software market expected by IDC to surpass $100bn by 2025: IDC forecasts the cybersecurity software market to grow at a c. 12% CAGR across 2021-26, from c. $87.5bn in 2021 to c. $137.2bn in 2026. Growth is expected in the low double-digit % range through the overall period, c. 14% in FY21 fading to c. 11% in FY26).

Exhibit 14: Cybersecurity software market growth



Source: IDC market size/split data and forecasts, Morgan Stanley Research

Exhibit 15: Cybersecurity software market - segmentation, market size, growth rates and example vendors

Category	Sub-category	2022	2026e	% CAGR	% of 2026 market size	Example vendors
Cybersecurity Analytics, Intelligence, Response and Orchestration						splunk> DARKTRACE RSA tenable IBM Microsoft RAPID7
	Security Information and Event Management	$5.43bn	$7.30bn	7.7%	5.3%	
	Device Vulnerability Assessment	$2.88bn	$4.47bn	11.6%	3.3%	
	Software Vulnerability Assessment	$2.53bn	$3.86bn	11.2%	2.8%	
	Tier 2 SOC Analytics and Cloud Native XDR	$4.65bn	$8.75bn	17.1%	6.4%	
	Total	**$15.48bn**	**$24.37bn**	**12.0%**	**17.8%**	
Information and Data Security Software						BROADCOM McAfee Forcepoint
	Data Security	$2.78bn	$4.66bn	13.7%	3.4%	
	Messaging Security Software	$4.12bn	$6.69bn	12.8%	4.9%	
	Sensitive Data Management & Data Privacy	$2.57bn	$4.50bn	15.0%	3.3%	
	Total	**$9.48bn**	**$15.85bn**	**13.7%**	**11.6%**	
Endpoint Security Software						TREND MICRO McAfee CROWDSTRIKE Symantec Microsoft SOPHOS
	Consumer/SOHO	$12.40bn	$16.13bn	6.8%	11.8%	
	Modern Endpoint	$10.04bn	$16.51bn	13.2%	12.0%	
	Server Security	$3.38bn	$6.05bn	15.7%	4.4%	
	Total	**$25.82bn**	**$38.69bn**	**10.6%**	**28.2%**	
Identity and Digital Trust Software						IBM RSA okta THALES Microsoft ORACLE
	Identity Management	$9.81bn	$16.44bn	13.8%	12.0%	
	Authentication	$4.58bn	$7.62bn	13.6%	5.6%	
	Privileged Access Management	$1.69bn	$2.90bn	14.4%	2.1%	
	Legacy Identity	$0.16bn	$0.12bn	-6.7%	0.1%	
	Total	**$16.25bn**	**$27.09bn**	**13.6%**	**19.7%**	
Network Security Software						paloalto networks CHECK POINT FIREEYE FORTINET proofpoint cisco
	Zero Trust Edge	$4.18bn	$7.10bn	14.2%	5.2%	
	Secure Access and Segmentation	$3.53bn	$5.36bn	11.0%	3.9%	
	Active Application Security	$2.83bn	$5.09bn	15.8%	3.7%	
	Total	**$10.53bn**	**$17.55bn**	**13.6%**	**12.8%**	
Other Security Software (GRC & Forensics)		**$9.98bn**	**$13.66bn**	**8.2%**	**10.0%**	
Total Cybersecurity Software Market Size		**$87.55bn**	**$137.22bn**	**11.9%**	-	-

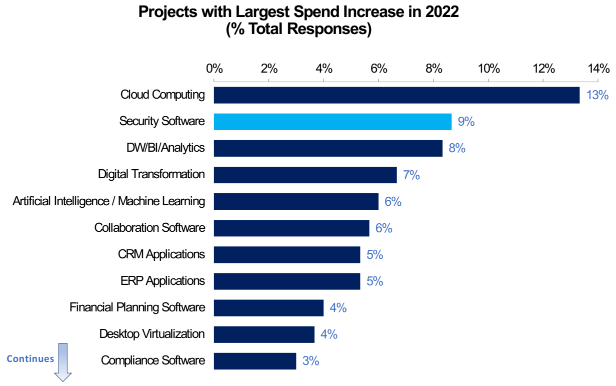
Source: IDC market size/split data and growth estimates, Morgan Stanley Research

Per Exhibit 15 above, Network Security is one of the highest-growth spending categories: IDC forecasts the NS category to grow at a 13.6% CAGR FY21-26, above the total market growth rate (11.9%). Other categories with the highest growth rates include Information & Data Security Software (c. 13.7% CAGR 2022-26) and Identity and Digital Trust Software (c. 13.6% CAGR 2022-26).

Security software spending a top 3 spending priority… This is shown in our latest AlphaWise survey of both US and EU CIOs. Security Software was ranked #2 in responses for the project area expected to see the largest spend increase in 2022, garnering 10% of total responses, and ranking only second to Cloud Computing.

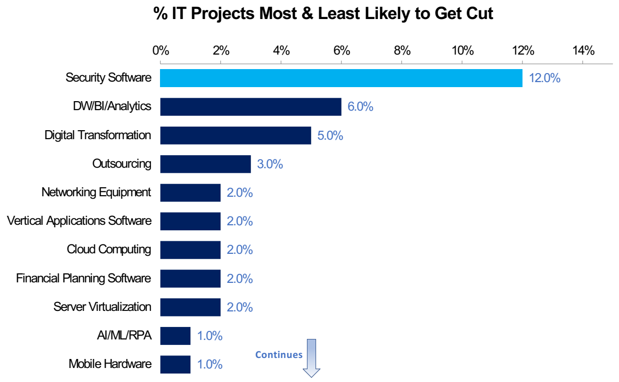
… and the #1 most defensive software spend area: When surveyed CIOs were asked about which IT areas are most and least likely to get cut if the economic outlook significantly worsens, Security Software was ranked #1 in the list. 15% of respondents ranked it as the IT project least likely to be cut, compared to 3% who ranked it most likely (generating the +12% net result). We see this as reflecting Security Software spend being largely non-discretionary, both due to the threat environment remaining very active, and because the monetary and non-monetary consequences of a cyberbreach can be substantial.

Exhibit 16: CIO IT spending priorities



Source: AlphaWise 2Q22 CIO survey, Morgan Stanley Research. n=100 (US and EU data)

Exhibit 17: Most defensive IT project areas according to CIOs



Source: AlphaWise 2Q22 CIO survey, Morgan Stanley Research. n=100 (US and EU data)

Key debate - How strong is Darktrace's market position?

Rising category competition in NDR, but well-advanced vision and platform offering leaves Darktrace well placed: While we see a broad and growing range of competitors in the Network Detection & Response (NDR) space, we see Darktrace's product positioning as far detached from this narrow area, also in the minds of customers. The launch of PREVENT represents the latest evidence for the company's pro-active approach to market innovation. We think the company's claim that its ability to drive high growth is not demand-constrained, but supply-constrained (i.e. driven by its ability to hire sales people) is largely fair.

Darktrace's market positioning and focus does not fall neatly into historical market segmentation: While there is a temptation to want to fit Darktrace into the context of pre-existing cybersecurity categories, the more we delved into the core of the business and how customers view the alignment of the company's products, the less we think this makes sense.

We think this is likely reflected in Proof of Value (POV) sales conversion and the POV strategies: One of the biggest pieces of evidence for this - we think - is that Darktrace customers often do not have a specific carved-out cybersecurity budget for what Darktrace is offering, as it spans a number of technology areas. It also means that the company's approach to selling has to be largely oriented around education, in the sense that the product will demonstrate its value through the 30-day POV trial period. Given the nascent stage of the business, we think pre-qualifying customers prior to undertaking POVs would probably be the wrong strategy, which we think explains why POV conversion rates (to firmed sales) are (MSe) probably running materially under 50%.

Focusing on the organisation, not the attacker, and embedding AI/ML throughout the suite

We see these as two of the critical differentiators of Darktrace's product proposition: The traditional approach to cybersecurity has involved focusing on inbound threats and the cyberattacker. In practice, this means that approaches often involve looking up identified threats against a catalogue of existing known threats. However, with increasingly sophisticated attack methods, this more traditional approach to defense is increasingly being supplemented by a more pro-active approach. The problem with the legacy threat-focused method is that new threats (zero-day attacks) have by definition not been seen before and so there is not an existing known attack 'fingerprint'. On the other hand, Darktrace's technology learns the behavioural patterns of an organisation and to be able to detect - at the margin - when a threat appears 'abnormal'.

The company combines this approach with its own developed AI/ML techniques, such that the software will self-refine over time, becoming smarter about the significance of each newly identified threat, and reducing the density of false-positive high-threat-level incident scores.

How differentiated is Darktrace's AI/ML approach?

We acknowledge that this is an increasingly in-focus area in cybersecurity, with other more nascent, as well as more established, players looking to embed these techniques into their products. While precise differentiation is difficult to determine, we note:

1) Positive industry feedback: in our industry conversations, there was an acknowledgement that Darktrace was a formidable competitor and that its underlying

ML technology for threat detection was robust. In practice, this should manifest into a higher number of valid threat detections versus competing software, and/or fewer false positives (i.e. threats that were identified that were not threats). Darktrace claims that 74% of trial deployments in 2020 detected serious vulnerabilities in the organisation's digital estate, which had very often evaded other installed cyber defences. We note that the company also has an extensive bank of granted and filed patent applications covering a range of used AI/ML approaches that it employs.

2) Combining supervised and unsupervised ML: Some competitor products only use supervised ML. Supervised ML is where the machine learns a classification system according to a bank of historical training data, and learnings from this can then be applied to new threats. Shortcomings of supervised ML include overfitting (where the historical training data is too finely tuned), and that supervised ML requires a bank of historical data that requires time and effort to collect and classify. Darktrace's approach involves the use of unsupervised ML to analyse the network data at scale. This involves making billions of (conditional) probability-based calculations to determine threat scores for identified threats. Data analysed is broad, with some of the included areas being data volumes, event timings, use of user credentials, connection types, directionality of uploads/downloads, file types. Unsupervised ML does not require this historical data, and Darktrace says that it is instead "able to identify key patterns and trends in the data, without the need for human input."

3) Overall approach: We also see differentiation in the company's approach versus many competing vendors. For example, while Vectra AI (a competitor in NDR) also uses AI/ML in its product, it is focused more on intelligently identifying attack methods, rather than the normal baseline of operation for the organisation.

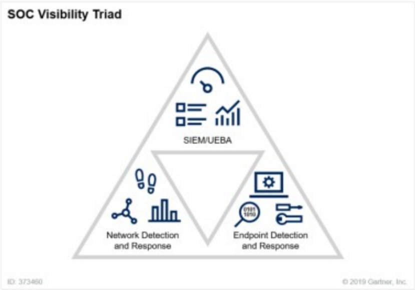
Very strong in Network Detection & Response…

Networks have increased in complexity: This trend has been driven by a number of factors, including: (i) an increasing device surface (e.g. more IoT devices); (ii) network borders being stretched (e.g. by remote working, BYOD); and (iii) growth in cloud computing. This has driven a requirement for increasingly sophisticated software that specialises in protecting the network of an organisation.

Network Detection & Response (NDR) software provides full network visibility… NDR monitors both external and internal data flows. Suppose an infrastructure setup comprising an internal company data centre and an external, third-party server. NDR software monitors both North-South data flows (i.e. data that moves between the data centre and the external 3rd party server), as well as East-West data flows (i.e. data that moves between devices within the data centre).

… by looking at individual data transactions: Unprocessed network traffic data is fed into the NDR software, which continuously analyses the data packets (containing control information and user data) that move across devices inside the network. While some endpoint devices may not be able to be loaded with Endpoint Detection & Response software (e.g. medical or industrial systems) and malicious actors can bypass system logs (which feed into Security Information & Event Management software), network data is very difficult to manipulate.

Exhibit 18: Gartner's SOC visibility triad


SOC Visibility Triad
SIEM/UEBA
Network Detection and Response
Endpoint Detection and Response
ID: 373460
© 2019 Gartner, Inc.

Source: Gartner, 2019

Darktrace's Enterprise Immune System (EIS) is its core NDR product: Although we do not see the company selling its product suite through this lens, we see EIS as overlapping with NDR. Gartner views NDR as a 1 of a triad of key cybersecurity software product areas that security operations centres (SOCs) should use to gain broad cybersecurity visibility over their IT infrastructure:

1. **Security Information & Event Management (SIEM):** Collects log data from a variety of other internal systems, allowing security analysts to perform log analysis, as well as providing an event compliance /audit trail.
2. **Endpoint Detection & Response (EDR):** Collects and analyses data from endpoints (e.g. PCs, mobiles, servers), as well as providing remediation guidance.
3. **Network Detection & Response (NDR)**

Overtaking Intrusion Detection Software (IDS), NDR software works by performing behavioural analysis: Intrusion detection software (IDS) could be classified as a legacy category of NDR. IDS products typically rely on a rules, heuristics, or signature-based approach to threats. This tends to mean they rely on comparing a threat to elements of previously identified threats. On the contrary, NDR software typically employs AI/ML techniques to detect abnormal changes in network traffic flows.

NDR expected to grow into a multi-billion market

The NDR market is relatively nascent with much of the growth being driven by greenfield customer deployments. We see the early-stage nature of the market as reflected in Darktrace being one of the leading vendors in the space, yet itself growing quickly with c. $415m of revenue in FY22. While data on the NDR segment is relatively sparse, we collate data from Gartner and IDC below.

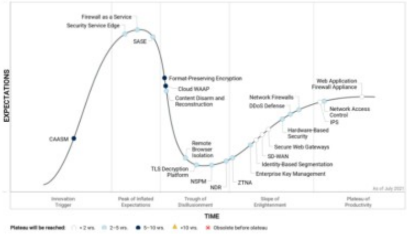
Gartner estimates the NDR market at c. $1.5bn in 2022, IDC estimates the Network Intelligence market at c. $1.6bn: Gartner expects the NDR market to reach c. $2.3bn by 2025, a c. 15.3% 2021-25 CAGR. IDC forecasts the Network Intelligence market size reaching $2.3bn, a c. 10.5% 2021-25 CAGR.

Exhibit 19: NDR market sizing (Gartner vs. IDC), $m

	2020	2021	2022	2023	2024	2025
Gartner Information Security & Risk Management end user spending						
Network Detection & Response	**994**	**1,248**	**1,511**	**1,770**	**2,022**	**2,268**
y/y growth		*25.6%*	*21.1%*	*17.1%*	*14.2%*	*12.2%*
Secure E-mail Gateway software	3,342	3,771	4,110	4,535	4,996	5,441
SIEM software	4,083	4,638	5,123	5,647	6,216	6,786
Threat Intelligence software	1,243	1,474	1,680	1,956	2,290	2,625
IDC AIRO, NITA, and XDR market sizes						
Network intelligence	**1,167**	**1,409**	**1,639**	**1,875**	**2,106**	**2,321**
y/y growth		*20.8%*	*16.3%*	*14.4%*	*12.3%*	*10.2%*
Full packet capture (PCAP/NPM)	444	475	511	548	586	629
Emulation and deep packet insights	151	166	183	205	229	257
Deception	101	124	152	186	220	258
Network intelligence and threat analytics	*1,861*	*2,173*	*2,485*	*2,814*	*3,141*	*3,465*
Automation and orchestration	1,300	1,509	1,720	1,912	2,084	2,234
Cloud-native XDR	94	246	581	1,158	1,672	2,296
Legacy cybersecurity AIRO	9,590	10,478	11,370	12,296	13,131	13,956

Source: Gartner data (1Q22), IDC data (2021), Morgan Stanley Research

Exhibit 20: Gartner hype cycle for Network Security, 2021

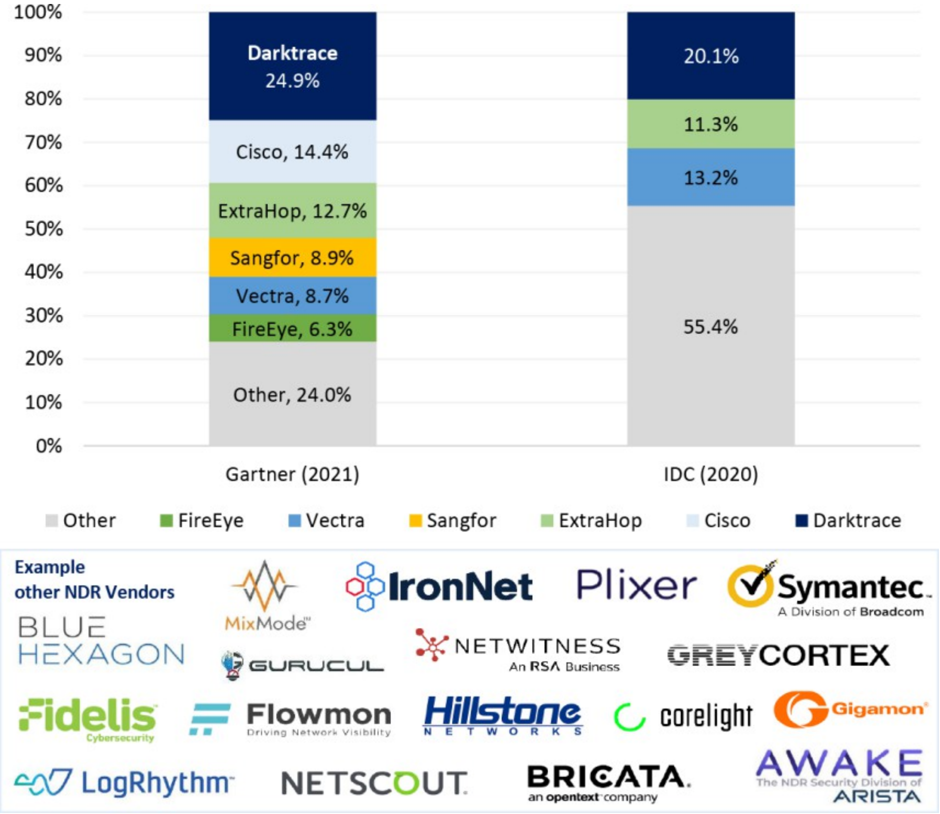


Source: Gartner Inc, 2021

Darktrace has a leading position in NDR: We see this mirrored in both Gartner's and IDC's data. Based on Gartner 2021 estimated vendor revenue data, Darktrace has a c. 25% market share in the NDR market. In IDC's data Network Intelligence data from 2020, Darktrace is also the leading player, with c. 20% of the total market.

Vectra and ExtraHop are key NDR competitors: As we discuss later, cybersecurity industry participants widely regarded Darktrace, as well as Vectra and ExtraHop, as three prominent players in the NDR space. Outside of these players, we see a long list of relatively smaller competitors. More established players include the likes of Cisco, FireEye, Arista Networks (through Awake Security) and Gigamon. Smaller players include Plixer, Corelight, Gurucul, Bricata and IronNet.

Exhibit 21: Gartner vs. IDC NDR/Network Intelligence market shares



Source: Gartner (2021), IDC (2020), Morgan Stanley Research (inc for example other vendors)

… but we see a much broader market position and opportunity and genuine strategy differentiation

Darktrace's product offering and vision extend far beyond that of other NDR vendors, in our view

While Darktrace's core initial application of its ML approach was into the Detection (NDR) market, it has branched out to cover a number of different product and technology coverage areas. This has involved a Response product family (in Antigena), an Investigation product family (around Cyber AI Analyst), as well as a new Prevent product family. From next year, we expect the company to close the loop on cyber response, introducing a Heal product family.

We see competitor product positioning or visions as significantly narrower than that of Darktrace. For example, many NDR vendors do not offer native response tools at all, or only offer third-party integrations. We fundamentally see the company's broad (and tightly knitted) product offering as the standout differentiator.

Darktrace's exposure to other cybersecurity software segments creates a far larger TAM than just NDR: For example, we would consider the Secure E-mail Gateway Software market (Gartner 2022 $4.1bn, c. 9% CAGR 2021-26) to be broadly addressable for Darktrace's Antigena email product. Other areas covered may include parts of Automation & Orchestration (IDC, c. $1.7bn), and attack surface management (via the acquisition of CyberSprint).

PREVENT product family represents an important milestone: We see Darktrace's solution set here as differentiated in the market; while there are other competitive solutions, they tend to be more siloed and not very automated. Instead, Darktrace's approach is to tie different workflows together and to automate them as far as possible with AI (for example, automated penetration testing as opposed to hiring an ethical hacking team to conduct manual tests).

Darktrace estimates its bottom-up TAM at c. $47bn: This is highlighted in the company's FY22 annual results, based on the c. 7,400 companies that are currently Darktrace customers, set against the 150,000 potential companies that could deploy Darktrace over time, and if they took the company's broad set of products.

Either way, we do not see a near-term addressable market ceiling: We consider just looking at NDR clearly to be an underestimate of the market opportunity, while $47bn likely represents an upper-bound. In any case - and as highlighted by management - the ability to grow in the short to mid-term is likely to be driven mainly by the company's ability to add sales force heads productively and convert POV trials.

Company-level indicators support our positive view on product and market positioning...

Exhibit 22: Example customers within Darktrace's base

SUZUKI
Heron Foods
STEVE MADDEN
BOARDRIDERS
ITHACA ENERGY
SIEMENS
CITY OF LAS VEGAS NEVADA
McLaren
William HILL
KKR
Panasonic
CBS Interactive
ocado
British Land
serco
JIMMY CHOO
KPMG
PEUGEOT
Micron
SAMSUNG
KOHL'S
HEXAGON
drax
aptean
ebay classifieds group
TOTTENHAM HOTSPUR
Rabobank

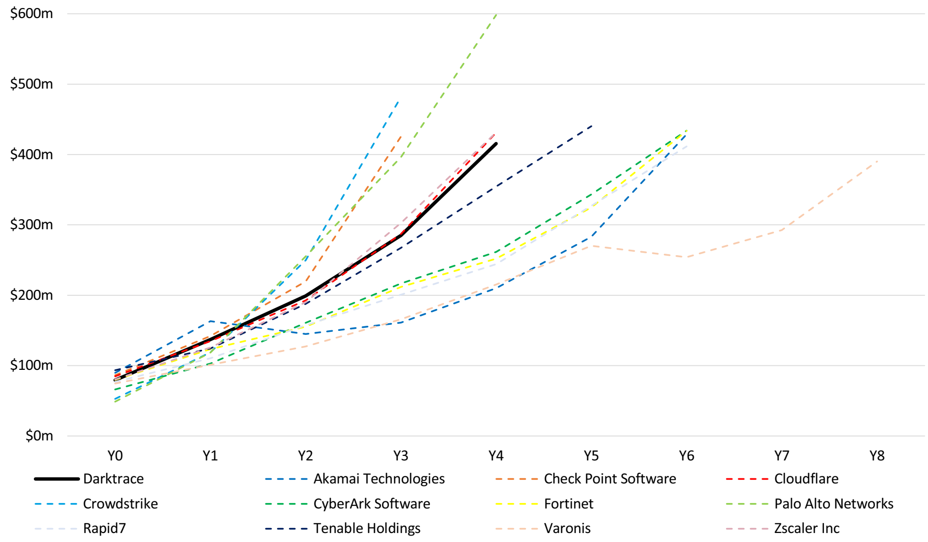
Source: Darktrace website, Morgan Stanley Research

Blue-chip customers within Darktrace's base: Although there is not exact clarity on the breadth of any individual engagements, Darktrace has a number of notable customers (including large enterprises) in its 7,400+ total customer base.

Momentum in deal sizes: In FY22 Darktrace signed its largest ever new logo, sized at c. $4.1m, with a top-10 automotive supplier. It also signed its largest ever Darktrace/email upsell, at c. $4m, with a broadcasting corporation, as well as its largest ever renewal at $4.7m with a UK infrastructure customer.

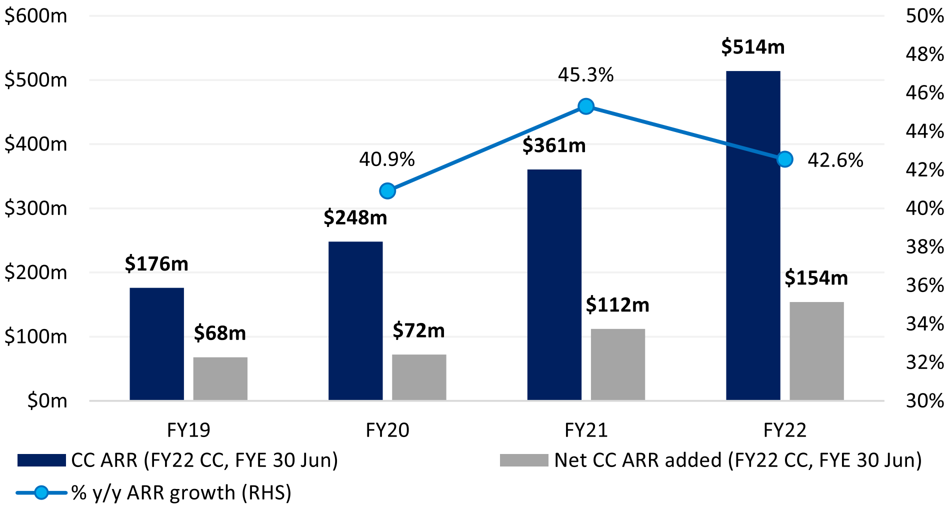
Darktrace's growth is tracking strongly: Revenues reached c. $415m in FY22, compared to just $79m in FY18, and this has been achieved mostly organically. We see the speed of revenue growth progress as in-line with broad US cybersecurity companies, with similar pathways to Cloudflare and Zscaler.

Exhibit 23: Darktrace vs. other cyber companies' revenue trajectory once surpassing $100m of revenue (Y0 being the year prior to surpassing $100m)



NB: Y4 for Darktrace represents FY22; Source: Company data, Morgan Stanley Research

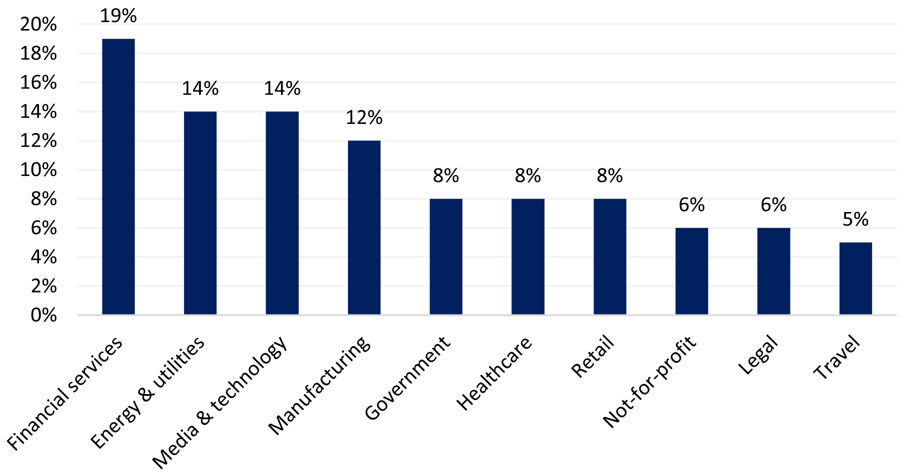
Exhibit 24: Constant currency ARR vs. net cc ARR added: ARR has grown >40% p.a. across FY20-22



Source: Company data, Morgan Stanley Research estimates

Broad industry vertical exposure, including both industrial and more regulated sectors: Darktrace's products are being deployed across a range of verticals, including those selling both goods and services. Financial services is the largest vertical within the customer base (as at February 2021), at c. 19% of the group mix. Government was c. 8% of the mix, and we note that, in 2022, Darktrace created a new division to serve the US Department of Defense.

Exhibit 25: Darktrace customer count split by vertical

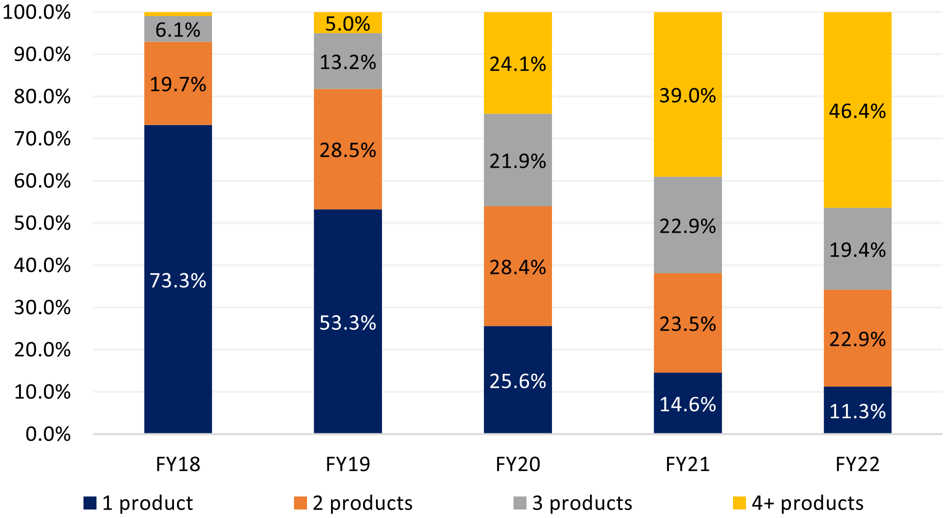


Source: Company data (February 2021), Morgan Stanley Research

Positive overall review ratings on B2B software review sites: On Trustradius, Gartner Peer Insights, and Capterra, Darktrace's vendor ratings are 8.2/10.0, 4.7/5.0 and 4.5/5.0 respectively.

Success in selling the enlarged product suite: The percentage of customers taking more than 1 product has significantly increased from c. 27% in FY18 to c. 88% in FY22.

Exhibit 26: Customer cohorts by # of products taken

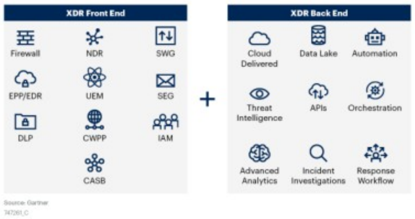


Source: Company data, Morgan Stanley Research

… albeit there are some areas of investor/market pushback

Is XDR an emerging threat, or just another buzzword? The term extended Detection & Response (XDR) was introduced by the CTO of Palo Alto Networks in 2018. XDR is software that will unify data collection, threat detection, investigation and remediation from across the component systems of an organisation. As an example, while some individual security systems may weakly detect suspicious activity, looking in aggregate across several systems may reveal a clearer picture of malicious activity.

Exhibit 27: XDR components overview



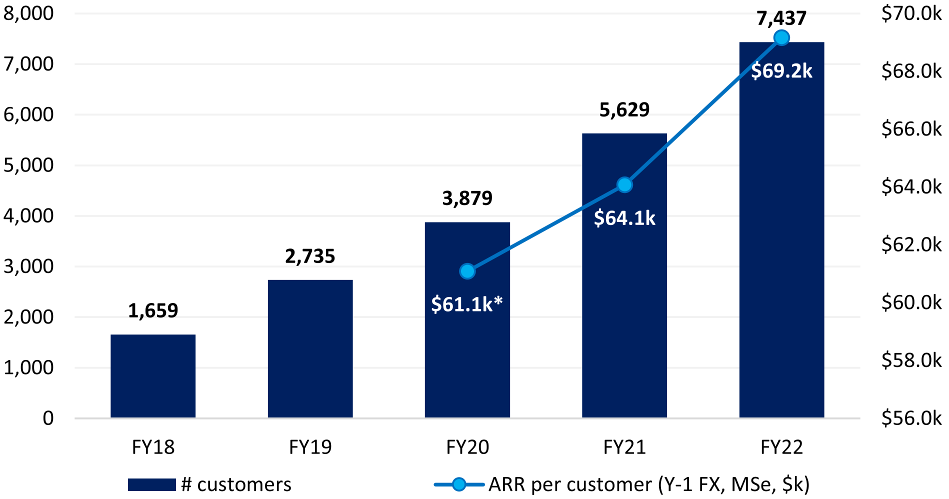
Source: Gartner (2021)

We consider the focus of the likes of Palo Alto (Cortex platform), Trend Micro (Vision One) SentinelOne (Singularity) and Crowdstrike (Falcon) on XDR as important as it shows they are not ignoring the NDR market. Gartner believes that *"XDR is a convergence trend [away from more siloed approaches], and XDRs will provide competitive pressure on existing solutions like EPP/EDR/NDR and SIEM/SOAR vendors."*

For now, our view is that XDR is more of a vision than a reality, with XDR products largely in their infancy and far from perfect data sharing/integration between individual components. In any case, we see Darktrace's product set as likely to be very competitive, even in a scenario where XDR solutions mature and penetrate the market (which will likely take a number of years at least).

While cross-sell has materially increased, ARR per customer has grown slowly over recent years: While the percentage of customers taking more than one product has increased from 75% to 88% between FY20 and 1H22 with significant cohort mix shift, the increase in ARR per customer has been arguably more modest, rising from c. $61k in FY20 to $69.2k in 1H22 (NRR of c. 105.5% in FY22). We acknowledge this may reflect new customer size mix.

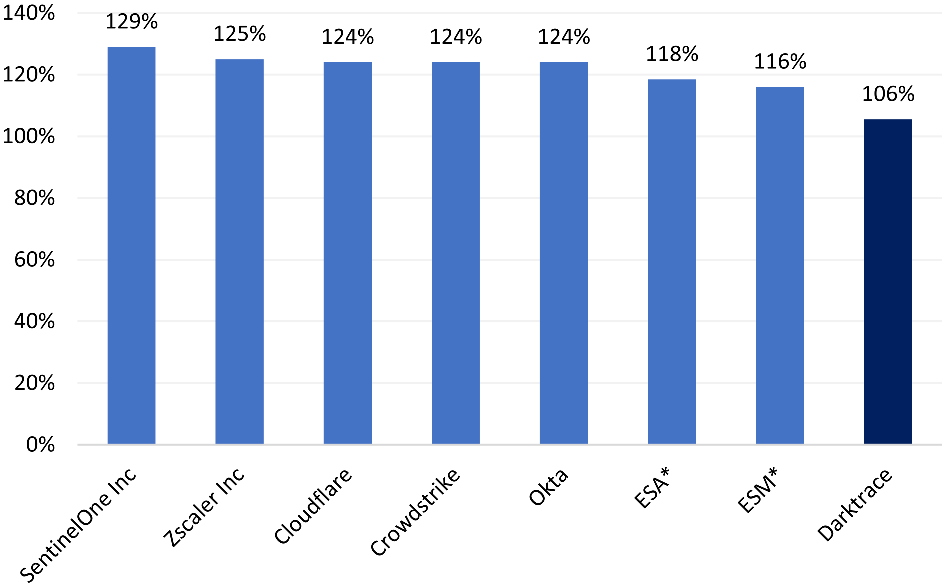
Exhibit 28: Customer count and ARR per customer trends (Y-1 FX at FY22 year-end)



*not on L4L cc basis, data re-cast to include Cybersprint in prior periods, Source: Company data, Morgan Stanley Research

Net retention rates have been improving, but remain low compared to other software/cybersecurity players: We think this reflects the company's focus on consistently landing new customers and attempting to land as much of the product suite into the customer from day 1, as opposed to a more traditional land and expand model. In FY22, Darktrace's NRR stood at c. 105.5%, higher than c. 103% for FY21 and 101.4% for FY19 (pre-pandemic impacts). Despite the improving trajectory, this is a relatively low level versus other fast-growth cybersecurity companies, as well as broader enterprise software. As gross ARR attrition p.a. is running in a mid/high-single-digit % level (*versus best-in-class being closer to low-single-digit %*), we see relatively low dollar up/cross-sell as the driver.

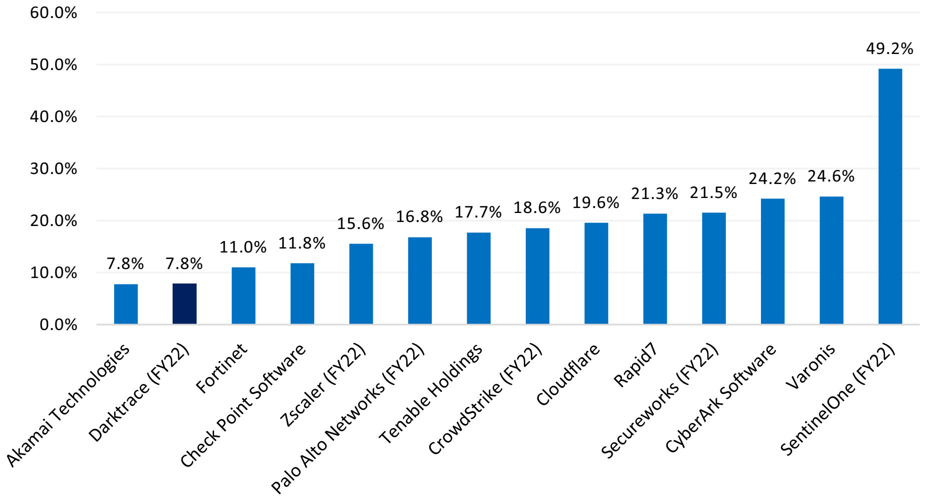
Exhibit 29: Net retention rate comparison (Darktrace FY22)



*ESA/M = Enterprise Software Average/Median
Source: Company data, Morgan Stanley Research estimates

Darktrace's level of R&D spend is low relative to other software companies: Darktrace's FY22 R&D as a % of sales was c. 7.8%. Although this is higher than levels seen over the prior 3 years (5.8%/4.8%/6.5% respectively), the level is low in the context of the broader software sector. Some R&D expense is capitalised, but we note the impact from this on the FY21 P&L was minimal (as amortisation and capitalisation broadly balanced out). However, we see this as more of a function of the company's AI/ML technology approach, which aids with structurally lowering the R&D intensity of the business. We are less concerned by this given the high growth the company is enjoying and our perception of good momentum in product development. Nevertheless, we expect R&D intensity to continue to trend up over time, reaching c. 10.8% in FY26.

Exhibit 30: R&D as a % of sales



Source: Company data, Morgan Stanley Research estimates

Financial forecasts

FY23 outlook - MSe in-line with guidance and consensus: Guidance is for cc ARR growth of 31-34% with y/y growth in new ARR added of 4-14%. Revenue growth is expected to be between 30-33% on a stated basis (inc FX impacts), and the adjusted EBITDA (ex-SBC) margin is expected at 15-18%. In comparison, we forecast c. 34% cc ARR growth, and c. 30.5% revenue growth (c. 38% on an organic constant currency basis). Within the mix, we forecast cc ARR adds at c. $160m, and for customer count to increase c. 28% y/y to >9,500. We forecast ARR per customer to increase from c. $65.2k at FY22 end (on Y, rather than Y-1 FX) to $66.4k.

On profitability, we forecast adj. EBITDA margins easing back y/y to 17.8% (from 22% in FY22). However, our margin forecast remains towards the upper end of management's 15-18% FY23 guidance. Our revenue forecast of $542m is broadly in-line with consensus, and our adj. EBITDA forecast of c. $96m is c. 4% above consensus. Darktrace has also guided to FCF/EBITDA conversion this year to be between 60-65% (MSe c. 65%).

Our mid-term forecasts - normalising growth as Darktrace scales: We forecast Darktrace's growth to remain buoyant across FY24-26, but for revenue growth to decelerate from c. 24% in FY26 as the business scales (albeit growth would still be comfortably above market levels).

We forecast a tick up in ARR per customer from c. $68k in FY23 to c. $74k in FY26 as adoption of multiple products increases. Total customer count increases to c. 17k in FY26, vs. 7.4k at the end of FY22. We forecast adjusted EBITDA margins to gradually expand post FY24, driven mainly by operating leverage on G&A, with margins reaching c. 21% in FY26. This translates to c. 9% on an adjusted EBIT basis (ex-SBC). We forecast FCF generation increasing to c. $209m by FY26 (c. $146m post tax-shielded SBC P&L expense).

Balance sheet and user economics: Darktrace had c. $391m of net cash at FY22 end. On MS methodology, we estimate that Darktrace's FY21 and FY22 customer lifetime value (LTV) to customer acquisition cost (CAC) ratios were c. 5-7x.

Darktrace's long-term financial margin target: Management believes Darktrace can reach an approximately mid-20s% adj. EBIT margin (ex-SBC), with the cost lines being: cost of sales (10-13% of revenue), sales & marketing (40-43%), research & development (10-13%), general & admin (10-13%).

Cash flow vs. profitability: As an example, we forecast FY24 FCF at $142m, above our estimated adj. net income at $51m. The delta is mainly driven by deferred revenue inflows, partly offset by a lag between cash spend and amortisation of certain cost items (mainly sales commissions, capex).

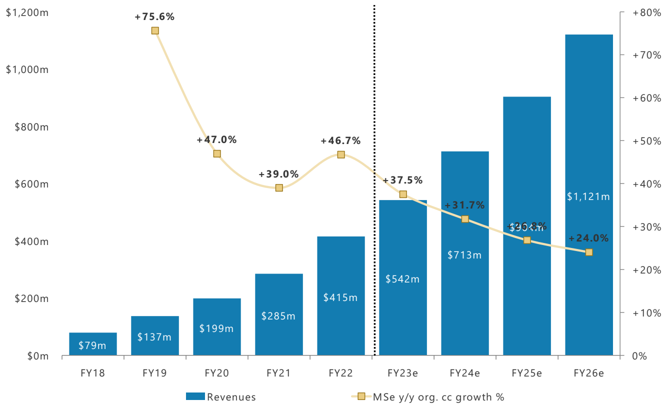
Exhibit 31: MS estimates vs. guidance. vs consensus

	FY20	FY21	FY22	FY23e				FY24e			FY25e	FY26e
				Guidance	MSe	Cons.	Δ	MSe	Cons.	Δ	MSe	MSe
ARR (in Y-FX, MSe)	$235.7m	$357.3m	$484.9m		$633.6m			$815.3m			$1,021.8m	$1,256.0m
% y/y growth		51.6%	35.7%		30.7%			28.7%			25.3%	22.9%
% ex-FX growth		45.7%	42.6%	31 - 34%	33.8%			28.7%			25.3%	22.9%
Revenue	$199.1m	$285.1m	$415.5m		$542.2m	$545.8m	-1%	$712.5m	$695.8m	2%	$903.6m	$1,120.5m
% y/y growth		43.2%	45.7%	30 - 33%	30.5%			31.4%			26.8%	24.0%
% org. ex-FX growth	47.0%	39.0%	46.7%		37.5%			31.7%			26.8%	24.0%
Co. adj. EBITDA (ex-SBC)	$8.9m	$33.5m	$91.4m		$96.3m	$92.9m	4%	$132.2m	$131.0m	1%	$180.5m	$235.5m
% margin	4.5%	11.7%	22.0%	15 - 18%	17.8%	17.0%		18.5%	18.8%		20.0%	21.0%
y/y margin change					*-424 bps*	*-498 bps*		*79 bps*	*182 bps*		*142 bps*	*104 bps*
Adj. EBIT (ex-SBC)	-$14.6m	$19.1m	$49.8m		$40.0m			$53.0m			$75.1m	$100.2m
% margin	-7.3%	6.7%	12.0%		7.4%			7.4%			8.3%	8.9%
Adj. diluted EPS			$0.06		$0.05			$0.07			$0.09	$0.12
% y/y growth					-13.7%			39%			38%	32%
Free cash flow	-$10.3m	$25.6m	$100.0m		$62.9m	$64.4m	-2%	$124.3m	$120.8m	3%	$162.5m	$209.1m
% co. adjusted EBITDA		76%	109%	60 - 65%	65%	69%		94%	92%		90%	89%

Source: Company data, Visible Alpha consensus, Morgan Stanley Research estimates

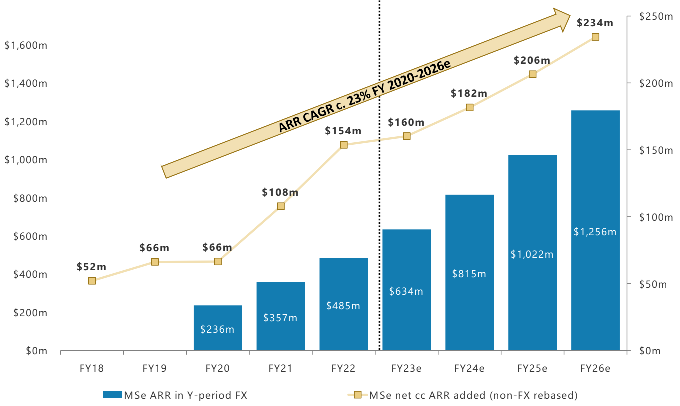
Financial forecasts in charts

Exhibit 32: Revenue progression



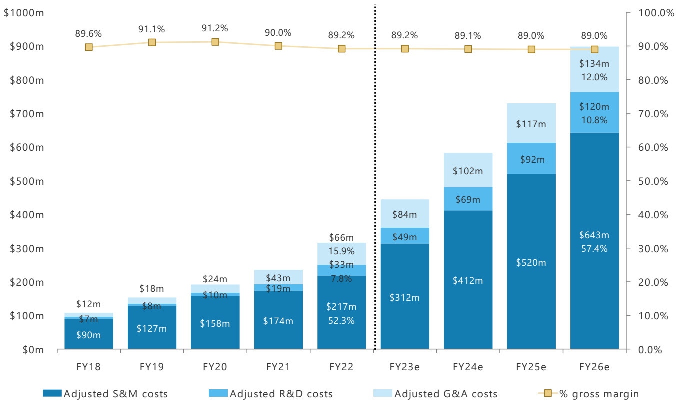
Source: Company data, Morgan Stanley Research estimates

Exhibit 33: ARR progression



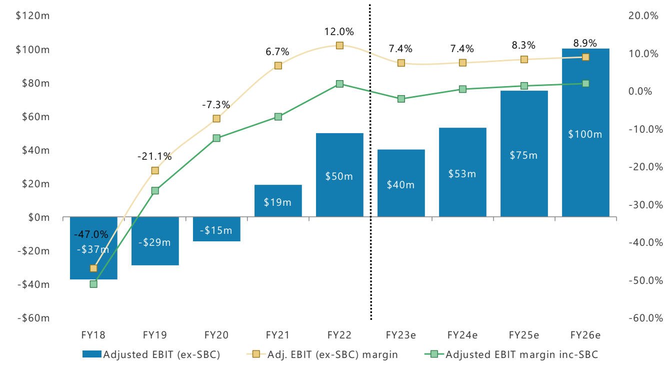
Source: Company data, Morgan Stanley Research estimates

Exhibit 34: GM % and operating cost progression



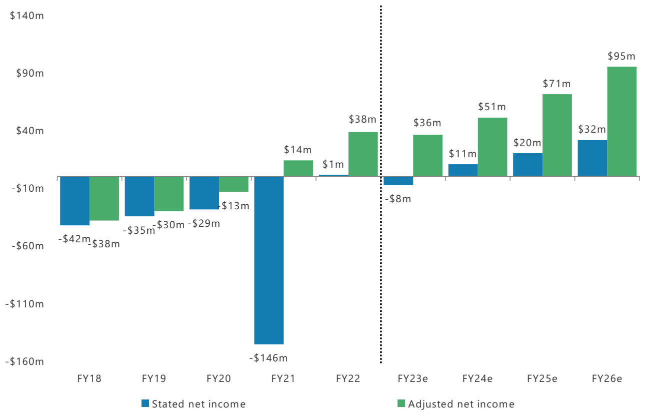
Source: Company data, Morgan Stanley Research estimates

Exhibit 35: Adj. EBIT progression (inc and ex-SB C)



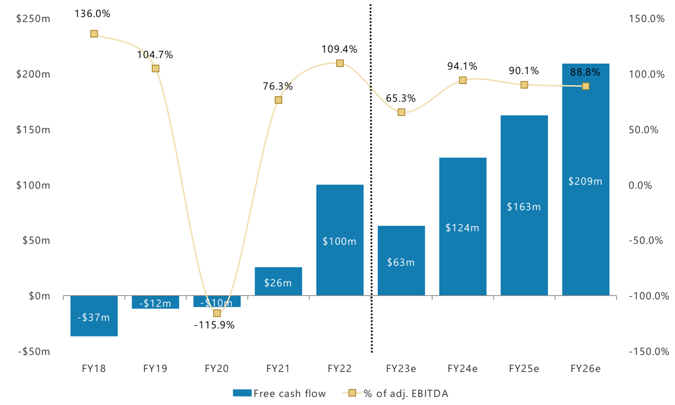
Source: Company data, Morgan Stanley Research estimates

Exhibit 36: Stated vs. adjusted net income progression



Source: Company data, Morgan Stanley Research estimates

Exhibit 37: Free cash flow progression



Source: Company data, Morgan Stanley Research estimates

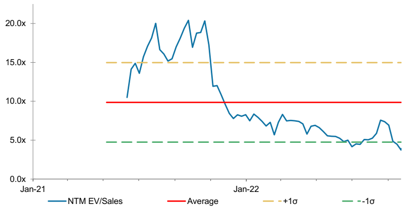
Valuation - Pricing in good execution on durable growth and significantly higher mature profit margins

425p price target implies c. 32% upside. Initiate at Equal-weight: Our 425p valuation is based on an equal weighting of two valuation methods: 1) a 15-year DCF, 9.5% WACC, 2.5% terminal growth, deriving a 400p price output; and 2) a c. 6x FY23 EV/Sales multiple, deriving a 450p price output.

In our DCF framework we model strong growth continuing through the mid-term, with a c. 27% CAGR across FY23-26, and c. 7% across FY26-38. Revenues reach c. $1.1bn in FY26 and c. $1.8bn by FY30 (vs. c. $0.54bn in FY23). Aligned with the company's long-term mid-20s% adjusted EBIT margin target, we forecast adj. EBIT margins (ex-SBC) reaching c. 24% in terminal state. However, we expense SBC in our DCF, with our terminal state implied inc-SBC adj. EBIT margin in the high-teens % range.

In our EV/Sales multiple framework, we look at Darktrace versus a basket of (14) US-listed cybersecurity-focused software companies, including the likes of Crowdstrike, CyberArk and Palo Alto. The average of these companies is forecast (by MSe/consensus) to grow revenues at a c. 23% revenue CAGR CY22-24, with a c. 19% FCF/sales margin, and trades at a median c. 5.7x EV/Sales when aligned to Darktrace's FY23 year-end (June). We apply a c. 6x EV/Sales multiple to Darktrace in our valuation framework. We note Darktrace's higher growth profile compared to the broader basket (we estimate a 30% CY22-24 revenue CAGR for Darktrace), but (temporarily) lower FCF conversion in FY23.

Exhibit 38: NTM EV/sales over time

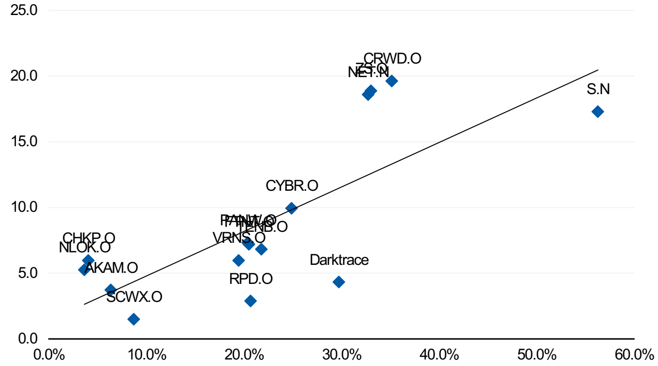


Source: Refinitiv Datastream, Morgan Stanley Research

Overall, we see a positively skewed risk/reward, but we see greater near-term upside elsewhere in our software coverage: We view the company's product positioning as strong, and see high growth momentum as likely to be reinforced by the high rate of product innovation and the recent launch of the PREVENT product family. Investing in cybersecurity defenses remains a strategic imperative for organisations and, while Darktrace's offering may be more 'deferrable' than more traditional category areas, we see a significant greenfield growth opportunity as Darktrace penetrates its target organisations. In the short term (FY23), we believe guidance is achievable, if not slightly conservative on top-line growth if underlying customer addition and NRR momentum persists. However, we see the current market valuation as capturing much of Darktrace's likely strong mid-term growth profile as well as the need to scale adjusted EBIT margins from (MSe) c. 7% in FY23 towards 24% in terminal state. Our DCF-derived price scenario of 400p represents c. 24% upside, and while our multiple-based scenario offers more compelling upside (towards c. 450p), we see current equity market conditions as likely to keep investors firmly focused on valuation discipline. For now, we favour other stocks in our software coverage universe.

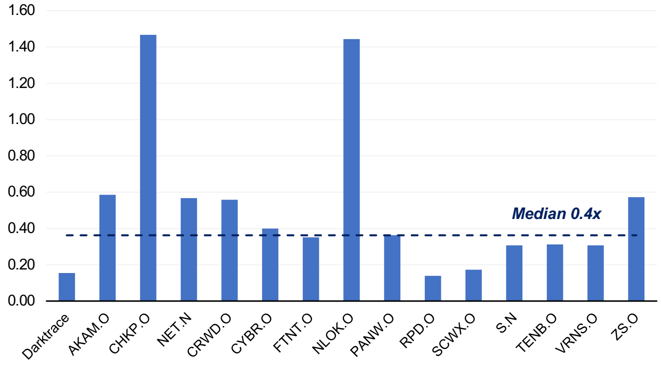
At ~322p, Darktrace trades on c. 3.4x CY23 EV/Sales, c. 60x adj. P/E, c. 23.6x EV/FCFF: Although we would point out that - due to high-single-digit % of sales in SBC expenses - the inc-SBC EV/FCFF multiple would be closer to 43.5x.

Exhibit 39: CY22e EV/Sales vs. CY22-24e sales growth



Source: Refinitiv data, Morgan Stanley Research estimates

Exhibit 40: CY22e EV/Sales/Growth (CY22 EV/Sales vs. CY22-24e sales growth)



Source: Refinitiv data, Morgan Stanley Research estimates

Exhibit 41: DCF summary

	FY2022A	FY2023	FY2024	FY2025	FY2026	FY2027	FY2028	FY2029	↔	FY2038
Total revenues	**415**	**542**	**713**	**904**	**1,121**	**1,322**	**1,521**	**1,688**		**2,552**
y/y growth %	*45.7%*	*30.5%*	*31.4%*	*26.8%*	*24.0%*	*18.0%*	*15.0%*	*11.0%*		*2.5%*
Adjusted EBIT *(inc lease interest)*	**47**	**37**	**50**	**72**	**96**	**125**	**159**	**193**		**603**
Margin %	*11%*	*7%*	*7%*	*8%*	*9%*	*9%*	*10%*	*11%*		*24%*
Tax rate	73%	-10%	19%	19%	19%	20%	20%	21%		21%
NOPAT		**37**	**40**	**58**	**78**	**100**	**127**	**153**		**477**
Total capex	**-33**	**-46**	**-57**	**-70**	**-86**	**-102**	**-116**	**-127**		**-153**
% sales	*-8%*	*-9%*	*-8%*	*-8%*	*-8%*	*-8%*	*-8%*	*-8%*		*-6%*
D&A (inc lease D&A, sales comms) add-back			*97*	*125*	*157*	*186*	*208*	*224*		*269*
Other (inc tax differences, NWC, leases, SBC)			*-10*	*-18*	*-24*	*-40*	*-60*	*-72*		*-239*
Undiscounted FCFF			**71**	**95**	**124**	**144**	**160**	**178**		**354**
Present value of cash flows		2,840			**Terminal growth**					**2.5%**
Enterprise value ($m)		**2,840**			**WACC**					**9.5%**
2023e net cash/(debt)		454			2023e FD shares					760
2023e other		0			Exchange rate (USD/GBP)					0.93
Market capitalisation ($m)		**3,294**			**(Rounded) share price**					**400.0p**

Source: Morgan Stanley Research estimates

Key bull / bear drivers: We believe Darktrace's equity story and share price will pivot primarily based on growth, but also (secondarily) on profit margin trajectory (i.e. cost intensity to achieve the growth). Within the growth debate, we think Darktrace's ability to extract growth from its existing base of users (i.e. its net retention rate) will be an important long-term determinant of growth durability. We flex our DCF-derived bull and bear cases along these two axes. In our 945p bull case, Darktrace delivers a stronger c. 30% FY23-26 revenue CAGR (vs. 27% in our base case), with the growth CAGR across FY26-38 also c. 6pps above the base case. We apply higher 3% terminal growth. We implicitly assume Darktrace penetrates c. 25% of its potentially addressable customer base (vs. c. 15% in our base case), with ARR/customer c. 2x current levels (vs. c. 1.5x in our base case). Adjusted EBIT margins (ex-SBC) reach c. 28% in terminal state (in-line with many European enterprise software companies). In our 170p bear case, Darktrace sees significantly more competitive pressure in core NDR and across the product suite more broadly. The bear case FY23-26 revenue CAGR is c. 17%, and c. 3.5% across FY26-38. We apply lower 2% terminal growth. Adjusted EBIT margins (ex-SBC) peak at c. 15%, significantly below our base case (24%) and the company's long-term targets, and towards the lower-end of our current European software coverage levels.

Comps Table

Exhibit 42: Darktrace & European Software vs. Global Security Software comps

Software Valuation: Adjusted Metrics

	Ticker	Rating	Ccy	Price	Price Target	Mkt Cap € mn	EV € mn	P/E		EV/EBIT		EV/Sales		FCFF/EV		Dividend Yield		Sales growth		Adj. EBIT margin		EPS Growth
				26-Sep				2022e	2023e	2022e	2023e	2022e	2023e	2022e	2023e	2022e	2023e	2022e	2023e	2022e	2023e	2023e
MS SOFTWARE COVERAGE																						
Amadeus	AMA.MC	O	EUR	46.5	69	20,935	24,788	30.3x	17.5x	24.1x	14.0x	5.4x	4.1x	3.3%	5.4%	1.6%	2.8%	69.0%	24.9%	22.3%	29.5%	73.3%
Aveva	AVV.L	E	GBp	3,156.0	2,675	10,701	11,155	34.1x	34.3x	26.6x	27.1x	7.0x	6.8x	2.4%	3.1%	1.2%	1.3%	17.9%	6.4%	26.3%	25.2%	-0.8%
Compugroup Medical	COP1n.DE	E	EUR	35.9	46	1,878	2,445	17.5x	16.6x	13.9x	12.2x	2.2x	2.1x	3.0%	3.7%	0.0%	1.8%	8.9%	4.6%	16.0%	17.1%	6.0%
Darktrace	**DARK.L**	**E**	**GBp**	**321.6**	**425**	**2,393**	**2,033**	**67.1x**	**60.5x**	**49.1x**	**45.9x**	**4.6x**	**3.4x**	**4.1%**	**4.2%**	**0.0%**	**0.0%**	**37.6%**	**30.6%**	**9.3%**	**7.4%**	**10.9%**
Dassault Systemes	DAST.PA	O	EUR	35.1	44	46,723	47,613	31.9x	31.9x	25.1x	23.4x	8.4x	7.7x	3.3%	3.2%	0.5%	0.6%	14.9%	5.9%	33.5%	33.0%	0.0%
Hexagon AB	HEXAb.ST	U	SEK	102.1	107	25,292	27,578	20.8x	21.4x	18.5x	18.3x	5.5x	5.3x	3.5%	4.2%	1.3%	1.3%	18.0%	0.7%	29.7%	28.9%	-2.5%
Nemetschek	NEKG.DE	E	EUR	49.0	73	5,657	5,645	29.9x	33.2x	23.0x	24.2x	6.8x	6.6x	7.2%	6.5%	0.8%	1.0%	17.9%	2.2%	29.8%	27.1%	-10.0%
Sage	SGE.L	O	GBp	713.2	835	8,716	8,897	26.3x	23.7x	20.4x	18.1x	4.0x	3.7x	3.7%	4.6%	2.6%	2.7%	5.7%	7.4%	19.8%	20.4%	11.3%
SAP	SAPG.DE	O	EUR	82.9	122	97,762	101,989	17.5x	16.5x	12.9x	11.7x	3.3x	3.1x	4.6%	5.8%	3.0%	2.4%	9.0%	3.0%	25.9%	26.6%	6.1%
Software AG	SOWGn.DE	U	EUR	23.1	30	1,709	1,408	16.3x	14.3x	10.5x	9.2x	2.0x	1.8x	6.1%	6.2%	3.5%	3.7%	12.0%	4.7%	18.7%	19.9%	13.6%
SUSE	SUSEG.DE	E	EUR	13.8	23	2,353	3,060	18.2x	15.5x	12.3x	10.5x	3.9x	3.3x	6.8%	7.8%	0.0%	0.0%	12.9%	10.5%	31.8%	31.7%	17.3%
TeamViewer	TMV.DE	E	EUR	8.0	13	1,603	1,900	8.1x	7.5x	7.7x	6.9x	3.3x	2.8x	10.4%	11.9%	0.0%	0.0%	13.3%	4.2%	42.4%	41.4%	7.8%
Temenos	TEMN.S	U	CHF	66.2	86	4,852	5,699	16.5x	16.1x	13.8x	12.6x	5.1x	4.7x	5.7%	6.0%	0.0%	0.0%	7.4%	3.9%	36.8%	37.4%	2.8%
Trustpilot	TRST.L	O	GBp	74.0	145	333	237	NA	NA	NA	NA	1.7x	1.6x	NA	NA	0.0%	0.0%	15.0%	13.0%	-11.8%	-10.4%	-20.8%
Mean						**16,493**	**17,460**	**25.7x**	**23.8x**	**19.8x**	**18.0x**	**4.5x**	**4.1x**	**5.0%**	**5.6%**	**1.0%**	**1.3%**	**18.5%**	**8.7%**	**23.6%**	**23.9%**	**8.2%**
Median						**5,255**	**5,672**	**20.8x**	**17.5x**	**18.5x**	**14.0x**	**4.3x**	**3.5x**	**4.1%**	**5.4%**	**0.6%**	**1.1%**	**14.1%**	**5.3%**	**26.1%**	**26.9%**	**6.0%**
Global Security Software																						
Akamai Technologies	AKAM.O	E	USD	80.7	102	13,370	12,734	15.5x	14.8x	11.8x	10.3x	3.3x	3.0x	7.2%	8.5%	0.0%	0.0%	3.2%	4.5%	28.2%	28.7%	4.8%
Check Point Software	CHKP.O	U	USD	112.1	120	14,652	12,927	15.5x	14.7x	12.3x	12.4x	5.5x	5.3x	8.7%	8.7%	0.0%	0.0%	6.8%	3.9%	44.2%	42.9%	5.4%
Cloudflare	NET.N	E	USD	53.8	76	18,285	16,591	1513.8x	620.4x	1461.7x	509.4x	16.5x	12.2x	NA	0.1%	0.0%	0.0%	48.1%	35.6%	1.1%	2.4%	144.0%
CrowdStrike	CRWD.O	O	USD	159.4	217	39,568	37,991	124.8x	85.4x	116.4x	69.6x	17.0x	11.8x	1.8%	2.8%	0.0%	0.0%	54.4%	38.4%	14.6%	17.0%	46.1%
CyberArk Software	CYBR.O	O	USD	147.0	184	6,898	5,928	NA	351.3x	NA	230.6x	9.5x	7.6x	0.4%	2.1%	0.0%	0.0%	19.2%	23.5%	-4.0%	3.3%	NA
Fortinet	FTNT.O	E	USD	48.3	66	31,988	31,198	46.3x	35.2x	26.4x	19.0x	6.7x	5.1x	5.6%	7.7%	0.0%	0.0%	30.9%	21.9%	25.3%	26.8%	31.5%
NortonLifeLock	NLOK.O	E	USD	20.5	26	12,403	14,506	11.5x	10.9x	9.6x	8.0x	5.1x	4.3x	8.7%	11.2%	2.5%	2.5%	2.9%	3.3%	53.0%	53.3%	5.4%
Palo Alto Networks	PANW.O	O	USD	163.2	274	54,170	50,419	59.0x	46.7x	48.8x	34.8x	8.0x	6.2x	4.1%	5.5%	0.0%	0.0%	26.4%	21.3%	16.5%	17.8%	26.3%
Rapid7	RPD.O	E	USD	44.5	80	1,887	1,640	574.0x	161.0x	60.9x	33.8x	2.2x	1.7x	2.7%	5.8%	0.0%	0.0%	28.7%	22.0%	3.7%	5.1%	256.5%
Secureworks	SCWX.O	E	USD	8.0	12	703	530	NA	NA	NA	NA	1.2x	1.0x	NA	0.2%	0.0%	0.0%	-13.0%	7.5%	-6.8%	-9.0%	-18.3%
SentinelOne	S.N	O	USD	25.3	40	7,326	6,067	NA	NA	NA	NA	15.7x	8.9x	NA	0.7%	0.0%	0.0%	104.2%	63.2%	-56.3%	-17.1%	54.3%
Tenable Holdings	TENB.O	O	USD	34.6	53	4,230	4,077	187.8x	68.4x	79.7x	44.8x	5.8x	4.5x	2.9%	4.7%	0.0%	0.0%	25.5%	22.5%	7.2%	10.0%	174.7%
Varonis	VRNS.O	E	USD	26.2	32	3,435	2,602	140.4x	79.9x	89.1x	45.9x	5.2x	4.2x	1.3%	3.1%	0.0%	0.0%	25.1%	20.1%	5.9%	9.2%	75.8%
Zscaler	ZS.O	O	USD	159.8	225	24,556	23,769	180.4x	109.3x	NA	NA	17.8x	13.2x	1.2%	1.7%	0.0%	0.0%	48.9%	34.9%	-28.4%	-24.5%	65.1%
Mean						**16,677**	**15,784**	**260.8x**	**133.2x**	**191.7x**	**92.6x**	**8.5x**	**6.4x**	**4.1%**	**4.5%**	**0.2%**	**0.2%**	**29.4%**	**23.0%**	**7.5%**	**11.9%**	**67.0%**
Median						**12,886**	**12,831**	**124.8x**	**74.1x**	**54.8x**	**34.8x**	**6.2x**	**5.2x**	**2.9%**	**3.9%**	**0.0%**	**0.0%**	**25.9%**	**22.0%**	**6.5%**	**9.6%**	**46.1%**

Source: Refinitiv data (for non-covered companies - where Rating = "NA"), Morgan Stanley Research estimates for covered companies, Morgan Stanley Research, adjusted metrics data, as of 26/09/22

Appendix 1: Key Management Overview

Poppy Gustafsson OBE (Chief Executive Officer): Ms Gustafsson has held the role of CEO since October 2016, having previously been both a COO (<1 year) and CFO (~3 years) at Darktrace. Prior to joining Darktrace, she was a corporate controller at HP Autonomy. Together with Darktrace CTO, Jack Stockdale, she was awarded an OBE for services to cyber security in 2019. She is a qualified chartered accountant.

Cathy Graham (Chief Financial Officer): Ms Graham joined Darktrace in February 2020 and is the group CFO. Her previous roles have included a near 8-year stint at Nasdaq-listed education technology company 2U, Inc, where she was appointed as CFO in 2012 to help the company prepare for its IPO in 2014. Prior to that, she was EVP and CFO of Online Resources Corp, an online banking and payments solutions company.

Jack Stockdale OBE (Chief Technology Officer): Mr Stockdale joined Darktrace at its founding stage and is the group CTO. He has more than 20 years of software engineering experience and is responsible for development of Bayesian mathematical models and AI algorithms that underpin Darktrace's technology. He was awarded an OBE in 2019 in recognition of his services to cyber security. Prior to joining Darktrace, he was Chief Architect at Invoke Capital from 2012 to 2023 and at blinkx from 2006 to 2011, and was also a technical director at Autonomy from 2002 to 2006.

Eloy Avila (Chief Technology Officer, Americas): Mr Avila has significant experience in enterprise software. Based in San Francisco, he works closely with Darktrace's R&D team to develop its self-learning AI systems and oversees the technology's strategic direction in the US, Latin America and Canada. Prior to joining Darktrace, Mr Avila led global engineering teams at a number of listed technology companies including Imperva, HP, and HP Autonomy (where his roles included VP of worldwide pre-sales and CTO).

Nicole Eagan (Chief Strategy Officer, AI Officer): Ms Eagan joined Darktrace in 2014, having spent over 30 years working for Oracle and early to late-stage growth companies. She was previously a dual chief executive of Darktrace prior to its IPO.

Nick Trim (Chief Operations Officer): Mr Trim joined Darktrace at its founding stage. Prior to this he led a cyber security consultancy advising large businesses on their cyber security risk. Originally responsible for the commercial team, Mr Trim established and grew the global sales team before becoming COO in 2020.

Max Heinemeyer (Chief Product Officer): Mr Heinemeyer was appointed as CPO at the end of August 2022. He has over a decade of experience as a cyber security expert, and at Darktrace he oversees global threat hunting efforts, as well as working with R&D to identify new AI innovations and their applications.

Carolyn Esser (Chief Corporate Affairs Officer): Ms Esser joined Darktrace in July 2022. She has over 20 years of experience in corporate affairs, and in her previous role, she led EMEA communications for the Bill & Melinda Gates Foundation. Her previous roles also included directing global communications at Logica, a formerly UK listed IT and business consultancy.

David Walden (Chief People Officer): Mr Walden joined Darktrace in July 2022. His previous roles have been leading global HR functions, including at multiple high-growth US technology companies.

Mike Beck (Global CISO): Mr Beck has c. 2 decades of experience working in roles across technology, security and risk, including a role running cyber defensive operations for the UK government. He developed the cyber analyst operation that 24/7 supports thousands of Darktrace customers and, since 2020, oversees Darktrace's internal security program as global CISO.

James Sporle (General Counsel): Mr Sporle is a qualified solicitor. His roles have included working in: i) the corporate department at Linklaters advising blue chip clients on major transactions, ii) BP's in-house M&A legal team and iii) at Just Eat, including through its merger with Takeaway.com.

Al Martin (SVP, Customer Success): Mr Martin has more than 14 years of experience in enterprise software businesses. Prior to joining Darktrace, he was responsible for the creation and growth of the HP Professional Services Solutions organisation.

Financial Tables

Exhibit 43: Growth drivers / Income statement

Profit & Loss	**FY**	**FY**	**FY**	**FY**	**FY**	**FY**	**FY**	**FY**	**FY**
YE 30th Jun - USDm	**2018**	**2019**	**2020**	**2021**	**2022**	**2023E**	**2024E**	**2025E**	**2026E**
Annualised recurring revenue (ARR) in Y-1 FX				**343**	**514**	**649**	**815**	**1,022**	**1,256**
MSe annualised recurring revenue (ARR) in Y FX			**236**	**357**	**485**	**634**	**815**	**1,022**	**1,256**
y/y growth				*51.6%*	*35.7%*	*30.7%*	*28.7%*	*25.3%*	*22.9%*
y/y cc ARR growth				*45.7%*	*42.6%*	*33.8%*	*28.7%*	*25.3%*	*22.9%*
MSe y/y org. growth				*45.7%*	*40.6%*	*33.8%*	*28.7%*	*25.3%*	*22.9%*
# of customers	**1,659**	**2,731**	**3,858**	**5,605**	**7,437**	**9,537**	**11,887**	**14,437**	**17,087**
y/y growth		*64.6%*	*41.3%*	*45.3%*	*32.7%*	*28.2%*	*24.6%*	*21.5%*	*18.4%*
Sequential net adds		*1,072*	*1,127*	*1,747*	*1,832*	*2,100*	*2,350*	*2,550*	*2,650*
ARR per customer at Y FX			**61,088**	**63,747**	**65,201**	**66,441**	**68,587**	**70,773**	**73,509**
ARR per customer at Y-1 FX				**61,280**	**69,165**	**68,047**	**68,587**	**70,773**	**73,509**
Total revenues	**79**	**137**	**199**	**285**	**415**	**542**	**713**	**904**	**1,121**
y/y growth		*72.5%*	*45.3%*	*43.2%*	*45.7%*	*30.5%*	*31.4%*	*26.8%*	*24.0%*
y/y cc growth		*75.6%*	*47.0%*	*39.0%*	*47.3%*	*38.4%*	*31.7%*	*26.8%*	*24.0%*
y/y org. growth		*75.6%*	*47.0%*	*39.0%*	*46.7%*	*37.5%*	*31.7%*	*26.8%*	*24.0%*
Cost of sales	(8)	(12)	(17)	(28)	(45)	(59)	(78)	(99)	(123)
Gross profit	**71**	**125**	**182**	**257**	**371**	**484**	**635**	**804**	**997**
as % of sales	*89.6%*	*91.1%*	*91.2%*	*90.0%*	*89.2%*	*89.2%*	*89.1%*	*89.0%*	*89.0%*
Adjusted S&M expenses	(90)	(127)	(158)	(174)	(217)	(312)	(412)	(520)	(643)
y/y growth		*41.9%*	*24.5%*	*9.9%*	*24.9%*	*43.4%*	*32.1%*	*26.4%*	*23.6%*
as % of sales	*-112.8%*	*-92.8%*	*-79.5%*	*-61.0%*	*-52.3%*	*-57.5%*	*-57.8%*	*-57.6%*	*-57.4%*
Adjusted R&D expenses	(7)	(8)	(10)	(19)	(33)	(49)	(69)	(92)	(120)
y/y growth		*18.3%*	*20.0%*	*96.2%*	*74.8%*	*49.6%*	*42.4%*	*32.7%*	*30.7%*
as % of sales	*-8.4%*	*-5.8%*	*-4.8%*	*-6.5%*	*-7.8%*	*-9.0%*	*-9.8%*	*-10.2%*	*-10.8%*
Adjusted G&A expenses	(12)	(18)	(24)	(43)	(66)	(84)	(102)	(117)	(134)
y/y growth		*55.8%*	*31.8%*	*80.1%*	*53.7%*	*27.4%*	*20.8%*	*15.7%*	*14.5%*
as % of sales	*-14.6%*	*-13.2%*	*-12.0%*	*-15.0%*	*-15.9%*	*-15.5%*	*-14.3%*	*-13.0%*	*-12.0%*
Other operating income	–	1	1	1	(5)	1	1	1	1
Adjusted EBIT	**(37)**	**(29)**	**(15)**	**19**	**50**	**40**	**53**	**75**	**100**
as % of sales	***-47.0%***	***-21.1%***	***-7.3%***	***6.7%***	***12.0%***	***7.4%***	***7.4%***	***8.3%***	***8.9%***
Company adjusted EBITDA	**(27)**	**(11)**	**9**	**33**	**91**	**96**	**132**	**180**	**235**
as % of sales	***-34.0%***	***-8.2%***	***4.5%***	***11.7%***	***22.0%***	***17.8%***	***18.5%***	***20.0%***	***21.0%***
SBC	(3)	(7)	(10)	(39)	(42)	(52)	(50)	(63)	(78)
as % of sales	*-4.2%*	*-5.3%*	*-5.2%*	*-13.5%*	*-10.2%*	*-9.5%*	*-7.0%*	*-7.0%*	*-7.0%*
PPA amortisation	–	–	–	–	(0)	(0)	(0)	(0)	(0)
Credit loss charges	(1)	(1)	(5)	(3)	–	–	–	–	–
Stated EBIT	(41)	(36)	(25)	(35)	8	(12)	3	12	22
as % of sales	*-51.1%*	*-26.4%*	*-12.5%*	*-12.2%*	*1.8%*	*-2.1%*	*0.4%*	*1.3%*	*1.9%*
Reversal of R&D capitalisation benefit	(1)	(2)	(1)	0	5	(3)	(2)	(2)	(2)
MW adjusted EBIT	**(42)**	**(38)**	**(26)**	**(19)**	**12**	**(14)**	**1**	**10**	**19**
as % of sales	***-52.5%***	***-27.7%***	***-13.2%***	***-6.8%***	***3.0%***	***-2.6%***	***0.1%***	***1.1%***	***1.7%***
Finance income	0	1	0	0	1	8	13	17	21
Finance costs	(1)	(2)	(2)	(109)	(3)	(3)	(3)	(4)	(4)
o/w. exceptional items	–	–	–	*(107)*	–	–	–	–	–
Stated PBT	(42)	(37)	(27)	(144)	5	(7)	13	25	39
Adjusted PBT	**(38)**	**(30)**	**(17)**	**17**	**48**	**45**	**63**	**88**	**118**
MW adjusted PBT	**(43)**	**(39)**	**(28)**	**(21)**	**10**	**(10)**	**11**	**23**	**37**
Stated tax	(1)	3	(2)	(2)	(4)	(1)	(2)	(5)	(7)
% rate	*2%*	*-7%*	*6%*	*1%*	*-73%*	*10%*	*-19%*	*-19%*	*-19%*
Adjusted tax	–	–	3	(3)	(9)	(8)	(12)	(17)	(22)
% rate	*0%*	*0%*	*-19%*	*-19%*	*-19%*	*-19%*	*-19%*	*-19%*	*-19%*
Stated net income	(42)	(35)	(29)	(146)	1	(8)	11	20	32
Adjusted net income	**(38)**	**(30)**	**(13)**	**14**	**38**	**36**	**51**	**71**	**95**
MW adjusted net income	**(43)**	**(39)**	**(23)**	**(17)**	**8**	**(8)**	**9**	**18**	**30**
Stated basic EPS					0.00	(0.01)	0.01	0.03	0.04
Stated diluted EPS					0.00	(0.01)	0.01	0.03	0.04
Adjusted basic EPS					0.06	0.05	0.07	0.10	0.13
Adjusted diluted EPS					**0.06**	**0.05**	**0.07**	**0.09**	**0.12**
MW adjusted diluted EPS					**0.01**	**(0.01)**	**0.01**	**0.02**	**0.04**

Source: Company data, Morgan Stanley Research estimates

Exhibit 44: Balance sheet

Balance Sheet **YE 30th Jun - USDm**	**FY 2018**	**FY 2019**	**FY 2020**	**FY 2021**	**FY 2022**	**FY 2023E**	**FY 2024E**	**FY 2025E**	**FY 2026E**
Accounts receivable	38	40	60	77	95	98	121	150	185
as % annualised sales	*48%*	*29%*	*30%*	*27%*	*23%*	*18%*	*17%*	*17%*	*17%*
ST capitalised commission	4	8	11	16	25	45	69	96	127
Other current assets	–	5	1	1	3	4	5	6	8
as % annualised sales	*0%*	*4%*	*1%*	*0%*	*1%*	*1%*	*1%*	*1%*	*1%*
Total current assets	**43**	**53**	**73**	**94**	**123**	**147**	**195**	**253**	**320**
Accounts payable	(26)	(38)	(50)	(51)	(82)	(60)	(80)	(104)	(132)
as % annualised sales	*-32%*	*-27%*	*-25%*	*-18%*	*-20%*	*-11%*	*-11%*	*-12%*	*-12%*
Other current liabilities	(0)	(0)	(1)	–	–	–	–	–	–
as % annualised sales	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*
Total current liabilities ex-DR	**(26)**	**(38)**	**(51)**	**(51)**	**(82)**	**(60)**	**(80)**	**(104)**	**(132)**
Net working capital	**17**	**15**	**22**	**43**	**41**	**87**	**115**	**149**	**188**
as % annualised sales	*21%*	*11%*	*11%*	*15%*	*10%*	*16%*	*16%*	*16%*	*17%*
Equity investments	–	–	–	–	–	–	–	–	–
Goodwill	–	–	–	–	38	38	38	38	38
Intangible assets	3	5	6	7	16	18	21	23	25
Property, plant & equipment	30	43	49	53	61	72	84	98	113
LT capitalised commission	5	9	15	23	33	33	33	33	33
Other non-current assets	19	32	36	36	68	68	68	68	68
Total non-current assets	**57**	**89**	**106**	**119**	**216**	**229**	**244**	**259**	**277**
Cash & equivalents	29	64	54	342	391	454	578	740	949
ST debt	–	–	–	–	–	–	–	–	–
LT debt	–	–	–	–	–	–	–	–	–
Net cash/(debt)	**29**	**64**	**54**	**342**	**391**	**454**	**578**	**740**	**949**
ST deferred revenue	(43)	(73)	(97)	(155)	(222)	(303)	(410)	(539)	(695)
as % annualised sales	*-54%*	*-53%*	*-49%*	*-54%*	*-54%*	*-56%*	*-58%*	*-60%*	*-62%*
LT deferred revenue	(22)	(23)	(26)	(30)	(29)	(29)	(29)	(29)	(29)
Provisions	–	–	–	(23)	(17)	(17)	(17)	(17)	(17)
Lease liabilities	(17)	(31)	(36)	(35)	(64)	(64)	(64)	(64)	(64)
Convertible loans	–	–	–	–	–	–	–	–	–
Other non-current liabilities	–	–	–	–	–	–	–	–	–
Share capital & premium	132	182	170	235	26	26	26	26	26
Retained earnings	(111)	(146)	(163)	(309)	(72)	(31)	29	112	221
Other equity	1	6	16	336	361	361	361	361	361
NCI	–	–	–	–	–	–	–	–	–
Total equity	**22**	**42**	**24**	**262**	**315**	**356**	**416**	**499**	**608**
Total assets	**129**	**206**	**233**	**555**	**729**	**830**	**1,017**	**1,252**	**1,546**
Total liabilities and equity	**(129)**	**(206)**	**(233)**	**(555)**	**(729)**	**(830)**	**(1,017)**	**(1,252)**	**(1,546)**

Source: Company data, Morgan Stanley Research estimates

Exhibit 45: Cash flow statement

Cash Flow Statement **YE 30th Jun - USDm**	**FY 2018**	**FY 2019**	**FY 2020**	**FY 2021**	**FY 2022**	**FY 2023E**	**FY 2024E**	**FY 2025E**	**FY 2026E**
Stated net income	**-42**	**-35**	**-29**	**-146**	**1**	**-8**	**11**	**20**	**32**
D&A and impairments	14	24	33	43	57	72	97	125	157
SBC reversal	2	7	10	17	44	52	50	63	78
Other non-cash reversals	1	-2	5	-1	10	0	0	0	0
Interest and tax reversals	2	-2	4	111	6	-4	-8	-8	-10
Other operating cash flows	0	0	0	0	0	0	0	0	0
Net change in WC	7	27	-7	37	26	0	29	31	35
as % of sales	*8.9%*	*19.8%*	*-3.3%*	*13.0%*	*6.4%*	*0.0%*	*4.1%*	*3.4%*	*3.1%*
Net interest paid	-1	-1	-2	-3	-2	5	10	13	17
as a % of P&L NFI	*100.0%*	*100.0%*	*100.0%*	*2.5%*	*96.9%*	*100.0%*	*100.0%*	*100.0%*	*100.0%*
Tax paid	0	0	3	-1	-5	-3	-2	-5	-7
as % of P&L stated tax	*0.0%*	*0.0%*	*-165.8%*	*73.1%*	*125.5%*	*400.0%*	*100.0%*	*100.0%*	*100.0%*
Cash from operating activities	**-17**	**19**	**17**	**57**	**138**	**114**	**187**	**239**	**302**
Cash conversion to co. adj. EBITDA	*63.1%*	*-168.0%*	*194.6%*	*170.7%*	*151.0%*	*118.6%*	*141.4%*	*132.4%*	*128.1%*
Development costs capitalised	-2	-3	-3	-3	-1	-5	-6	-7	-9
as a % of sales	*2.4%*	*1.9%*	*1.4%*	*0.9%*	*0.3%*	*1.0%*	*0.8%*	*0.8%*	*0.8%*
Net PPE capex	-16	-25	-20	-23	-32	-41	-51	-63	-77
as a % of sales	*20.7%*	*18.3%*	*10.2%*	*7.9%*	*7.7%*	*7.5%*	*7.2%*	*7.0%*	*6.9%*
Total net capex	**-18**	**-28**	**-23**	**-25**	**-33**	**-46**	**-57**	**-70**	**-86**
as a % of sales	*23.2%*	*20.2%*	*11.6%*	*8.9%*	*8.0%*	*8.5%*	*8.0%*	*7.8%*	*7.7%*
Other investing cash flows	0	0	0	0	0	0	0	0	0
Net disposals / (acquisitions)	0	0	0	0	-36	0	0	0	0
Lease repayments	-1	-3	-5	-6	-5	-5	-6	-6	-6
Other financing cash flows	0	0	0	0	0	0	0	0	0
Cash dividends paid	0	0	0	0	0	0	0	0	0
Share issue / (repurchase)	50	50	0	97	-7	0	0	0	0
Issue of debt	0	0	0	163	0	0	0	0	0
Repayment of debt	-4	-1	0	0	-1	0	0	0	0
Cash FX impact	1	0	0	3	-8	0	0	0	0
FCF	**-37**	**-12**	**-10**	**26**	**100**	**63**	**124**	**163**	**209**
y/y growth		*-68%*	*-12%*	*-347%*	*291%*	*-37%*	*98%*	*31%*	*29%*
as % of adj. EBIT	*98.5%*	*40.7%*	*70.7%*	*134.0%*	*200.8%*	*157.1%*	*234.5%*	*216.4%*	*208.8%*
as % of sales	*-46.3%*	*-8.6%*	*-5.2%*	*9.0%*	*24.1%*	*11.6%*	*17.4%*	*18.0%*	*18.7%*
FCFE	**-37**	**-12**	**-10**	**26**	**100**	**63**	**124**	**163**	**209**
y/y growth		*-68%*	*-12%*	*-347%*	*291%*	*-37%*	*98%*	*31%*	*29%*
as % of adj. EBIT	*98.5%*	*40.7%*	*70.7%*	*134.0%*	*200.8%*	*157.1%*	*234.5%*	*216.4%*	*208.8%*
as % of sales	*-46.3%*	*-8.6%*	*-5.2%*	*9.0%*	*24.1%*	*11.6%*	*17.4%*	*18.0%*	*18.7%*
FCFF	**-37**	**-13**	**-11**	**26**	**99**	**55**	**111**	**146**	**188**
y/y growth		*-66%*	*-16%*	*-338%*	*290%*	*-45%*	*101%*	*31%*	*29%*
as % of adj. EBIT	*99.2%*	*44.0%*	*73.4%*	*133.7%*	*199.7%*	*137.8%*	*209.5%*	*194.3%*	*187.6%*
as % of sales	*-46.6%*	*-9.3%*	*-5.4%*	*8.9%*	*23.9%*	*10.2%*	*15.6%*	*16.1%*	*16.8%*

Source: Company data, Morgan Stanley Research estimates

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(as of August 31, 2022)

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	COVERAGE UNIVERSE		INVESTMENT BANKING CLIENTS (IBC)			OTHER MATERIAL INVESTMENT SERVICES CLIENTS (MISC)	
STOCK RATING CATEGORY	COUNT	% OF TOTAL	COUNT	% OF TOTAL IBC	% OF RATING CATEGORY	COUNT	% OF TOTAL OTHER MISC
Overweight/Buy	**1356**	**38%**	**304**	**41%**	**22%**	**596**	**39%**
Equal-weight/Hold	**1589**	**45%**	**349**	**47%**	**22%**	**716**	**47%**
Not-Rated/Hold	**0**	**0%**	**0**	**0%**	**0%**	**0**	**0%**
Underweight/Sell	**610**	**17%**	**90**	**12%**	**15%**	**225**	**15%**
TOTAL	**3,555**		**743**			**1537**	

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COMPANY (TICKER)	RATING (AS OF)	PRICE* (09/26/2022)
Adam Wood		
Amadeus IT Holdings S.A. (AMA.MC)	O (12/16/2015)	€46.51
Atos SA (ATOS.PA)	U (12/08/2021)	€7.49
Capgemini (CAPP.PA)	O (04/24/2020)	€155.10
Dassault Systemes SA (DAST.PA)	O (09/26/2019)	€35.07
Hexagon AB (HEXAb.ST)	U (03/20/2020)	SKr 102.05
Indra (IDR.MC)	E (03/25/2022)	€7.93
Sage (SGE.L)	O (12/08/2021)	713p
SAP SE (SAPG.DE)	O (03/20/2020)	€82.87
Sopra Steria Group (SOPR.PA)	E (04/12/2019)	€128.60
Temenos Group AG (TEMN.S)	U (12/15/2017)	SFr 66.24
Trustpilot (TRST.L)	O (12/08/2021)	74p
Alastair P Nolan		
Computacenter PLC (CCC.L)	E (03/09/2021)	1,962p
Eurowag (WPS.L)	O (11/18/2021)	89p
Exclusive Networks (EXN.PA)	O (09/27/2022)	€15.06
Softcat PLC (SCTS.L)	E (12/08/2021)	1,184p
Software AG (SOWGn.DE)	U (07/13/2022)	€23.10
Softwareone Holding AG (SWON.S)	E (03/04/2022)	SFr 10.49
Wise PLC (WISEa.L)	O (07/22/2022)	588p
George W Webb		
Aveva Group Plc (AVV.L)	E (02/14/2022)	3,156p
Darktrace PLC (DARK.L)	E (08/09/2022)	322p
Nemetschek SE (NEKG.DE)	E (07/13/2022)	€48.98
Netcompany Group A/S (NETCG.CO)	O (10/20/2021)	DKr 259.00
OVH GROUPE SAS (OVH.PA)	U (03/25/2022)	€11.15
TeamViewer AG (TMV.DE)	E (10/11/2021)	€8.01
TietoEVRY (TIETO.HE)	E (03/10/2021)	€22.84
Laura C Metayer		
CompuGroup Medical SE & Co KgaA (COP1n.DE)	E (03/25/2022)	€35.88
Suse SA (SUSEG.DE)	E (09/16/2022)	€13.81

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