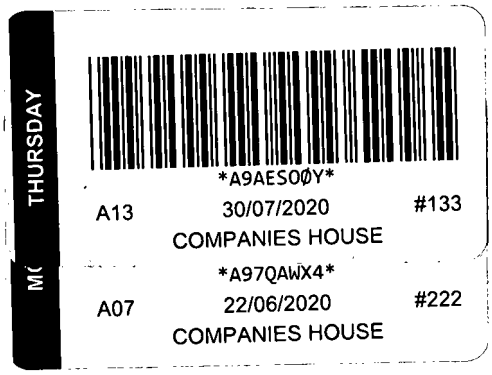
corero



A leader in real-time, high performance, automatic DDoS protection

Annual Report and Accounts 2019
Corero Network Security plc

COMPANY NUMBER – 02662978

DDoS Protection Without the Downtime

A leader in real-time, high-performance, automatic DDoS protection, on-premises and in the cloud, with comprehensive visibility, analytics and reporting.

The Corero SmartWall® family of products can be deployed in various topologies including in-line and scrubbing, or in conjunction with third-party network and security products such as Juniper MX Series routers, or a hybrid solution combined with Corero's Threat Defense Cloud powered by Neustar. We protect thousands of organisations worldwide, across many verticals.

Corero is dedicated to improving the security and availability of the internet through the deployment of innovative Distributed Denial of Service ('DDoS') protection solutions.

> *"DDoS attacks were one of the most prominent threats reported to Europol by its private sector partners, superseded by phishing and social engineering attacks, and ransomware."*
>
> Europol Internet Organised Crime Assessment 2019

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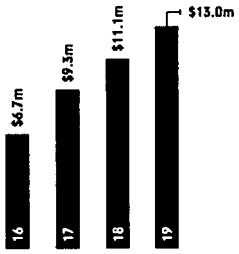
For more information visit
corero.com

1 comprises maintenance, support services and as-a-service recognised revenue

2 comprises the operating loss less unrealised foreign exchange differences on an intercompany loan, depreciation excluding DDPaaS assets depreciation which is charged to cost of sales, amortisation and impairment of goodwill. The Directors consider EBITDA to be a better measure of profitability as it excludes non-cash items

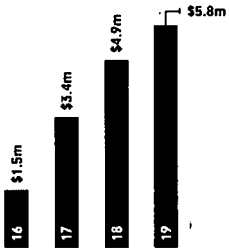
2019 HIGHLIGHTS



Order intake growth

18.0%

increase over the prior year



Recurring[1] revenue growth

15.9%

increase over the prior year

Revenue

$9.7m

(2018: $10.0 million)

EBITDA loss[2]

$2.8m

(2018: loss $2.1 million)

Net cash

$5.4m

at 31 December 2019
(2018: $4.4 million)

Loss per share

1.6c

(2018: loss per share 1.4 cents)

OPERATIONAL HIGHLIGHTS

- Significant increase in DDoS protection as-a-service ('DDPaaS') recurring revenue orders.
  - 32% of new business orders in 2019 (2018: 7%).
- 18 new Corero customers added in 2019 (12 in H2 2019).
- Six new Juniper Networks, Inc. ('Juniper', NYSE: JNPR) customer orders in 2019 (5 in H2 2019).
- Follow-on orders from existing customers $5.7 million (2018: $4.3 million).
- Revenue from partnership with GTT Communications increased by more than 100%.
- Continued high levels of customer satisfaction.
  - Services renewal rate remained strong at 98.8% (2018: 98.5%).
- Sales team headcount doubled since the start of 2019 under leadership of new VP Worldwide Sales recruited in June 2019.
- New partnership secured with Neustar, Inc. ('Neustar'), a leading cloud DDoS service provider, to deliver hybrid DDoS protection.
  - Facilitated Corero's largest DDPaaS order to date in Q4 2019.

AT A GLANCE

We are a leader in real-time, high-performance, automatic DDoS attack protection, on-premises and in the cloud, with comprehensive visibility, analytics and reporting.

We protect thousands of organisations worldwide, across many verticals.

PURPOSE, CULTURE AND VALUES

Our culture and values

Successful companies have a strong culture and deeply rooted shared values. In common with most intellectual property businesses, at Corero, we know that the skills, experiences and passion of our employees are genuinely what make our products and services market leading.

With a growing business, the level of team diversity and multi-site operations, we have recognised the importance of our culture and values. Corero's agreed values, which have been defined in conjunction with our employees, are:

Integrity

Customer delight

Innovation

Open and honest communications

Empowerment

Corero has invested in an online tool, called Kudos, which is used to acknowledge, reinforce and measure the values-supporting behaviours and actions taken by Corero team members.

Proud of our service

Corero's Security Operation Centre ('SOC') comprises a team of highly experienced security analysts whose role it is to assist our customers IT and security teams mitigate the growing number of increasingly sophisticated DDoS attacks. Our service and customer support offering is an important competitive differentiator. Customers value the service levels and our team regularly receives glowing feedback from our customers. This customer satisfaction is validated by our market leading service and support contract renewals rate of 98.8% for the year ended 31 December 2019.

> *Over the past few years Corero's SOC has proven to be a trustworthy partner, always willing to go the extra mile to provide excellent service and inspire confidence in our internal teams with their outstanding technical know-how.*
>
> Corero SaaS customer

Who we are

Corero has a market leading SmartWall® Threat Defense System solution portfolio endorsed by over 120 customers, many of whom are providers using it to protect hundreds, or thousands, of their customers. The SmartWall family of products utilises innovative, patented, technology to automatically and surgically remove DDoS attack traffic, while allowing good traffic to flow uninterrupted.

Corero solutions are amongst the highest performing in the industry, while providing the most automated DDoS protection, at unprecedented scale, with the lowest total cost of ownership to the customer. We protect against DDoS attacks in seconds, or less, rather than the minutes or tens of minutes taken by legacy solutions.

Our products are recommended by NSS Labs (a leading independent product testing laboratory) and selected by Juniper as their DDoS protection solution.

The goal of the Corero SmartWall real-time DDoS protection solution is to protect business continuity, service availability, revenues and brand reputations from harmful DDoS attacks. We do this for enterprises, service providers, cloud hosting providers, co-location providers and edge providers.

> *The cost of global cyber losses is predicted to reach $6 trillion annually by 2021. Cyber security spending will exceed $1 trillion from 2017 to 2021.*
>
> Safeguarding Value in the Era of Cyber Risk, Aon, October 2019

Where we are

Corero's key operational centres are in Marlborough, Massachusetts in the USA and Edinburgh in the UK, with the Company's registered office in Uxbridge in the UK.

Who do we partner with

Neustar - in September 2019, Corero launched a hybrid DDoS protection solution combining on-premises SmartWall Threat Defense System ('TDS') with the SmartWall Threat Defense Cloud ('TDC') service, powered by Neustar, which provides protection against the largest attacks which can saturate an organisation's internet connections and overwhelm legitimate traffic.

Juniper - Corero has a global partnership agreement with Juniper, enabling them to sell Corero's SmartWall Threat Defense Director ('TDD') software product in conjunction with Juniper's MX Series routers. Juniper and Corero have developed this integrated solution for large-scale network-edge DDoS defence that leverages powerful filtering capabilities in the latest generation of Juniper's MX Series routers.

GTT Communications, Inc. ('GTT') - as one of the top five Tier 1 providers in the world with over 600 points of presence ('POP's'). GTT customers can purchase IP transit with DDoS protection provided by Corero's SmartWall TDS's which are deployed within the GTT network.

THE NEED FOR DDoS PROTECTION

What is a DDoS attack

A Distributed Denial of Service attack is a cyber threat, in which multiple computer systems attack a target, such as a server, website or other network asset, and cause a denial of service for users of the targeted resources. The flood of incoming messages, connection requests or malformed packets to the target system, causes it to slow down or shut down, thereby denying service to legitimate users or systems. DDoS attacks are a threat to service availability, network security, brand reputation and ultimately lead to lost revenues. Attackers are continuing to leverage DDoS attacks as part of their cyber threat arsenal to either disrupt business operations or provide a smokescreen while they attempt to access sensitive corporate information. Attackers are leveraging increasingly creative ways to circumvent traditional security solutions or reduce the effectiveness of DDoS scrubbing centres. DDoS attacks can be found in a multitude of sizes and are launched for a variety of motivations. They may also be used to extort payments via Ransom DDoS. Today's cyber criminals do not even have to construct the attacks themselves, they can simply download DDoS malware or rent the botnets they need to accomplish their goal.

86%

of all attacks mitigated by Neustar used two or more vectors[2]

$220k

average revenue at risk per DDoS attack[4]

2x

DDoS protection and mitigation market will nearly double to $4.7 billion by 2024[1]

> *"Whilst extortion was the primary motivation behind DDoS attacks reported to European law enforcement, attacks of an ideological/political nature were also common, as were attacks without an apparent motive and which appeared purely malicious."*
>
> **Europol Internet Organised Crime Assessment 2019**

How we combat DDoS attacks

With varied deployment topologies (in-line, scrubbing, edge or cloud) the SmartWall family of solutions utilise innovative, patented, technology to automatically and surgically remove the vast majority of DDoS attack traffic.

Protection is available in cost-effective scaling increments, from 1Gbps, 10Gbps and 100Gbps to tens-of-terabits, to support the full spectrum of customer bandwidth and inspection requirements.

We have combined advances in Intel x86 multicore CPU technology, Data Plane Development Kit ('DPDK') software for packet processing acceleration, and high-performance network interface cards ('NICs'), together with an innovative, patented, and highly efficient software architecture, to develop a new generation of physical and virtual appliances providing breakthrough price/performance for DDoS defence.

SmartWall appliances perform sampled Deep Packet Inspection ('DPI') to generate security metadata from traffic flows. The internal rules-engines examine this metadata to flag offending packet flows in real-time and block attacks. At the same time, the security metadata is streamed to the Corero SecureWatch® Analytics platform, where further analysis, involving correlation with other performance metrics and event data, enables rapid identification of new attack vectors. SecureWatch Analytics can formulate new mitigation rules for these vectors that are distributed out to each SmartWall instance.

Corero SecureWatch Analytics leverages Splunk's analytics engine and provides robust reporting to transform sophisticated DDoS event data into easily consumable dashboards accessed via the SecureWatch Analytics web portal.

The portal allows customer security operators to monitor and manage incident response, with the ability to conduct sophisticated forensic analysis.

Corero's SmartWall solution is highly automated, detecting and mitigating attacks surgically, without the intervention of security analysts or network operators, who may not even know the network is under attack unless they are monitoring Corero's dashboard or subscribed to the automated mitigation alerts.

The Corero Service Portal enables provider customers or tenants to gain visibility into attacks via per-tenant dashboards. Providers can assign tenant service levels and automatically distribute reports which showcase the value of the protection their customers are receiving.

The Corero SecureWatch service is a tiered offering comprised of configuration optimisation, monitoring and mitigation response services.

Corero provides real-time, high-performance, automatic and highly scalable DDoS protection solutions, including Corero delivered managed services, with flexible on-premises and cloud options.

High availability of cloud services and applications are critical for modern businesses and institutions.

Any DDoS downtime brings risk:

- **Lost revenue or loss of control.**
- **Operational costs to mitigate or recover from attacks.**
- **Increased costs to retain unhappy customers and attract new customers.**
- **Brand and reputation damage leading to competitive disadvantage or loss of confidence.**
- **Regulatory fines, legal action, resignations.**

241%

increase in the number of attacks YoY (2018 to 2019)[2]

85%

of attacks are less than 10Gbps and less than 10 minutes in duration[3]

> *"In general, while network equipment (routers, firewall, network intrusion prevention system, network behaviour analysis) can provide a measure of traffic filtering, shaping or analysis, these devices should not be relied on to thwart DDoS attacks."*
>
> Gartner - DDoS: A Comparison of Defense Approaches, 24 April 2019

> *"DDoS intentions are varied. One of the most nefarious intentions is a decoy. DDoS attacks can be used to keep the security team busy while the attacker is performing his or her actions to exfiltrate data. Ultimately, the attack will serve to deny the organization its incident response capability."*
>
> Gartner - DDoS: A Comparison of Defense Approaches, 24 April 2019

1 MarketsandMarkets DDoS Global Forecast Report, Forecast to 2024, June 2019
2 Neustar Q3 2019 Cyber Threats and Trends Report
3 Corero Network Security 2019 DDoS Trends Report
4 NetScout 14th Annual Worldwide Infrastructure Security Report

MARKET OVERVIEW

A wide range of critical cybersecurity issues face every internet connected organisation. These threats include denial of service, hacking, breach, phishing, fraud, ransom, data theft and exfiltration. These cyber threats present themselves via the essential internet connections that are required to support the online business.

Today, internet service providers typically sell raw internet transit connectivity. This raw internet connectivity, usually sold via 1Gbps, 10Gbps and increasingly 100Gbps transport connections, carries good customer traffic and malicious bad traffic without discrimination. If an enterprise, data centre, or hosting facility connects to these raw transit providers they will be exposed to internet-borne cyber threats and their information security posture must be prepared to detect and protect against any associated malicious intent.

Corero focuses on one specific category of these cyber threats encompassing denial of service and has developed a real-time detection and mitigation solution that delivers automatic detection and protection against DDoS attacks.

The broad range of motives for executing DDoS attacks, coupled with the relative ease with which attacks can be launched, means that they are easily carried out by a variety of actors, including; criminal gangs, activists, terrorist groups and even nation states. Aside from those who are focused purely on disrupting services, some of those who carry out DDoS attacks do so for extortion via ransom DDoS or as a smokescreen for other cyberattacks designed to steal data, or plant malware.

Businesses and public-sector organisations are equally vulnerable to DDoS attacks and recent years have seen some of the world's best-known companies fall victim to DDoS attacks with catastrophic impact for their customers.

$2.4b to $4.7b

The market for DDoS protection and mitigation is forecast to grow from $2.4 billion in 2019 to $4.7 billion by 2024, a compound annual growth rate of 14.0%.

MarketsandMarkets DDoS Protection and Mitigation Market - Global Forecast to 2024, June 2019

> *"The major factors driving the growth of the DDoS protection and mitigation market include the increasing Internet of Things ('IoT') and cryptocurrency-focused DDoS threats, and rising awareness among enterprises about the changing threat landscape, and growing need to have a disaster recovery plan in place before DDoS attacks impact businesses to a great extent. Due to the advent of digitalization, increase in computational power of processors, and rise in the number of connected devices, the instances of cyberattacks have increased considerably in recent times."*
>
> **ResearchandMarkets DDoS Protection and Mitigation Market - Global Forecast to 2024, July 2019**

DDoS market drivers

- Rise in multi-vector DDoS attacks, availability of DDoS-for-hire services and growing demand for hybrid DDoS protection and mitigations services and solutions.[1]
- Internet of Things ('IoT') devices, which are the source of high-intensity DDoS attacks, forecast to grow 18 billion devices by 2022.[1]
- The increased bandwidth of 5G networks opens avenues for DDoS attackers to induce large DDoS attacks capable of impacting millions of mobile and IoT devices.[1]
- Communication service providers ('CSP's') are increasingly vulnerable to DDoS attacks. 85% of survey respondents say DDoS attacks against their organisations are either increasing or continuing at the same relentless pace and 71% of respondents say they are not or only somewhat capable of launching measures to moderate the impact of DDoS attacks. The increase in IoT devices due to the advent of 5G will also increase the risk to CSP's.[2]

1 MarketsandMarkets DDoS Global Forecast Report, Forecast to 2024, June 2019

2 Ponemon Institute The State of DDoS Attacks Against Communication Service Providers, April 2019

DDoS attacks continue to grow in sophistication, scale and frequency.

Number of attacks over 10Gbps increased in 2019

35%

Corero 2019 Full Year DDoS Trends Report

Average number of DDoS attacks per day per customer:

8

Corero 2019 Full Year DDoS Trends Report

BUSINESS MODEL

The purpose of the Corero SmartWall real-time DDoS mitigation solution is to protect business continuity, service availability, revenues and brand reputations from harmful DDoS attacks.

Resources and relationships

SmartWall DDoS Threat Defense System, a high performing and market-leading software technology

Industry leading talent in our software development and SOC teams

Collaborative, values-driven culture

Established go-to-market partner relationships

Experienced management team

What we sell

SmartWall Threat Defense System ('TDS') appliances available in physical and virtual form-factors for 1G, 10G, 100G and cloud networks.

SmartWall Threat Defense Director ('TDD') delivers edge protection for even the largest provider networks. Powering the silicon filtering capabilities increasingly built into modern edge routers, TDD software scales to tens-of-terabits per second of protection, without the need to deploy additional appliances at the edge, or needing to back-haul large volumes of attack traffic to scrubbing centres.

SmartWall Threat Defense Cloud ('TDC') protects against the larger attacks, which can saturate internet connections and overwhelm legitimate traffic.

SecureWatch support and maintenance services, and software updates delivered to the SmartWall appliances and software instances in customer networks, to provide proactive on-going protection from the latest DDoS threats.

SecureWatch Managed 24x7x365 monitoring and support services including DDoS attack protection delivered by the highly experienced Corero SOC team.

Customers

To protect business continuity, service availability, revenues and brand reputations from harmful DDoS attacks without the risk of dropping or delaying legitimate traffic.

We do this for enterprises, service providers, cloud hosting providers, co-location providers, edge providers and Managed Security Service Partners ('MSSP's').

Why customers choose us

Speed

Automatic, real-time, always-on protection, keeps applications and services online, with zero downtime

Simplicity

Automatic, plug and play appliances, or software, for lowest TCO

Flexibility

Multiple deployment options: on-premises, hybrid and cloud protection

> *Scalability, integration and reduction of false positives are the most important features to prevent DDoS attacks.*
>
> Ponemon Institute, The State of DDoS Attacks Against Communication Service Providers, April 2019

How we sell our product

Routes to market

Direct sales:

Corero sales team selling directly in its chosen markets of North America, Europe, and Australia.

Indirect sales:

Value added resellers and distributors selling the SmartWall solution to their customer base.

Partner sales:

Partners including Juniper, GTT and Neustar who resell the Corero SmartWall solutions or a DDoS protection service to their customers, thereby leveraging these partners' customer base and geographic market reach.

Revenue generation

We sell our products to customers in three ways:

An appliance and perpetual software license sale, with annual SecureWatch services (this includes software updates and monitoring and support services from our SOC team).

A term license software subscription with annual SecureWatch services.

A DDoS Protection as a Service which enables the customer to utilise the SmartWall technology and services on a subscription or revenue share basis (without owning the appliance and software).

Value creation

For customers

Protect business continuity, service availability, revenues and brand reputations from harmful DDoS attacks.

For partners

Enable partners to generate incremental high margin revenue and deepen customer relationships by selling a market leading DDoS protection solution to their existing and new customers.

For employees

Build a business that employees are proud to work for and represent, as well as generate value for share option holders.

For shareholders

Through revenue growth and 80%+ gross margins, generate profits and cash to deliver share price growth and attractive returns to shareholders.

Scalability

Modular and distributed, pay as you grow protection

Visibility

Accurate, forensic-level attack and traffic visibility with SecureWatch Analytics

Support

World-Class 24x7x365 SOC support with SecureWatch Managed Services

OUR STRATEGY

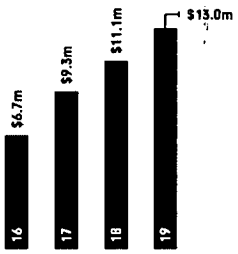
Our strategic goal is to be the #1 player in real-time, high-performance, automatic DDoS attack protection, on-premises and in the cloud, and to deliver revenue growth, be profitable and cash generating.

> *"Today's DDoS attacks are increasingly waged not simply as modes of disruption for the purpose of extortion, but modes of distraction to mask fraud that's taking place in the background."*
>
> Neustar – Understanding DDoS attacks

	Progress in 2019	2020 Plan
Scaling the business and selling more DDoS protection	• Recruited VP Worldwide Sales to drive direct and indirect sales efforts. • Strong H2 2019 order intake growth with 62% growth over H1 2019 and 36% over H2 2018. • Juniper global resale partnership delivered six deals in 2019 (2018: 0) with the opportunity pipeline growing strongly. • GTT relationship growth – exited 2019 with a recurring revenue increase of 300%.	• Accelerate the sale of our products and services into our target market segments by leveraging our routes to market. • Grow revenue from go-to-market partners such as Juniper, GTT and Neustar. • Enable more Distributor and Reseller channel partners. • Establish additional go-to-market partner relationships.
Investment in sales and marketing to drive revenue growth	• Sales team investment plan executed under leadership of VP Worldwide Sales. • Senior Director Marketing recruited. • New web site launched in December 2019 to support sales effort.	• Implement Account Based Marketing for key Corero customer verticals. • Target larger opportunities by allocating additional resources. • Optimise lead generation spend with combination of third party and in-house resources.
Maintain competitive advantage	• Delivered major new SmartWall portfolio software releases to customers and partners.	• Deliver new SmartWall portfolio software releases to customers and partners. • Deliver new SmartWall DDoS appliance configuration options to track evolving market demand.
Focus on customer satisfaction	• Follow-on orders from existing customers up 35.0% over 2018 to $5.7 million. • Market leading services renewal rate of 98.8% (2018: 98.5%).	• Continue to leverage demand from existing customers to add capacity to their DDoS mitigation deployments as their businesses grow. • Continue to focus on delivering world class services and support by being proactive and responsive to customers.

CHIEF EXECUTIVE'S STRATEGIC UPDATE

Our strong order momentum in the second half of 2019, combined with our higher levels of recurring revenue and a growing new business pipeline, provide Corero with solid foundations for 2020.



Order intake growth

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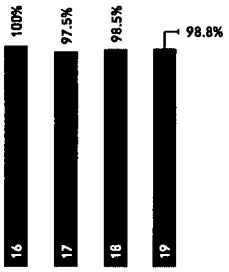


Security service and support contract renewals (%)

98.8%

Performance

Corero revenue for the year ended 31 December 2019 was $9.7 million (2018: $10.0 million). Recurring revenue increased to $5.9 million (2018: $5.1 million). The EBITDA loss was $2.8million (2018: EBITDA loss $2.1 million).

Revenue growth and progress towards EBITDA break-even was impacted by lower than expected revenue as a result of the higher mix of DDoS protection as a service ('DDPaaS') long-term contract orders in 2019, the revenue for which is recognised over the term of the contract (typically three years).

Operating performance against strategy

Corero continued to make good operational progress in 2019. Delivery against our 2019 strategic objectives is set out on page 11.

DDoS market dynamics

Organisations across the globe remain dependent on the internet as a means to conduct business and deliver their services to other businesses and consumers alike.

This increasingly internet-connected world grows faster and more complex every year with higher speed connections, the proliferation of IoT devices, the build-out of 5G and the continued growth of cloud services. Simultaneously, DDoS attacks have become more sophisticated, more frequent, and larger. Whilst unlawful in many countries, DDoS-for-hire services are still commonplace and inexpensive.

Internet resilience can be compromised in a fraction of a second. When the internet goes down, organisations that rely on that service go down with it. DDoS attacks are considered one of the most common and serious threats to internet availability today. Downtime or latency can significantly impact brand reputation, customer trust and revenue. Within Europe, the introduction of the GDPR and NIS legislation has significantly increased the risk of punitive fines.

Long considered the domain of cyber geeks and their friends, DDoS attacks are no longer the straightforward phenomenon they once were. Increasingly DDoS attacks are used as smokescreens to cover more nefarious activities aimed at business, financial institutions and governments, with additional damage potentially occurring simultaneously elsewhere in the network whilst the IT team are busy trying to stop the DDoS attack.

To keep up with the growing sophistication of well-equipped and well-funded threat actors, it is essential that organisations maintain comprehensive visibility and automated mitigation capabilities across their networks in order to detect and block any potential DDoS attacks as they arise.

When unprotected businesses are hit by a cyber-attack, the financial losses can be severe - from immediate crisis expenses and subsequent regulatory fines to longer-term, knock-on costs such as those related to reputational damage, a fall in share price or downgrading of their credit rating.

KEY INSIGHT

Increase in the use of multi-vector attacks

Corero continues to see an increase in the use of multi-vector attacks. In particular, the DNS and CLDAP vectors continue to dominate.

In 2019 Corero observed a 13% increase in the use of multi-vector attacks. These attacks present a significant challenge for both manual and legacy detection and mitigation solutions for the following reasons:

- For complete mitigation it is necessary to recognise each and every vector and respond with the appropriate mitigation without impacting legitimate traffic.
- Multi-vector attack rates are usually additive in terms of bandwidth and packet rate. The total attack rate will be the sum of vector1 + vector2 + vector3, etc.
- Multi-vector attacks often exhibit more variability in rate as different vectors join and leave. This presents challenges for many traditional detect and redirect DDoS solutions that typically provide partial mitigation capacity. Making a decision on the mitigation method (e.g. redirection vs. blackhole) based on the current attack rate is flawed as it can vary on a minute by minute basis.
- The most common contributors to multi-vector attacks continue to be volumetric UDP amplification vectors including DNS, CLDAP, NTP, Chargen, and SSDP.
- Attackers frequently mix resource exhausting TCP SYN floods from spoofed sources to make tracking and mitigation more challenging.
- These vectors and other variants may be added or removed multiple times during a typical 10 minute attack period. The aggregate attack amplitude often varies up to 10 times during the attack as vectors surge and fade.

Example customer attack – Corero regional service provider customer

CHIEF EXECUTIVE'S STRATEGIC UPDATE continued

Building cyber resilience within an organisation is crucial to heading off cyber threats - but it is a more complex task than ever. In the event of a cyber-attack, a well-prepared and practiced coherent response strategy can mean the difference between an organisation holding its nerve or going into meltdown.

These market dynamics and double-digit growth forecast by analysts for DDoS protection, gives us confidence that there is a significant durable market opportunity for Corero to address with our market leading SmartWall solutions.

Opportunities for Corero

Looking at 2020 and beyond, dependence on the internet shows no signs of abating as a platform for continued innovation in both business and service delivery models.

Given the global impact of COVID-19, and the substantial rise in home or remote working across businesses, society's reliance on being digitally connected has never been more relevant. Cyber security, and by definition Corero's SmartWall solutions, is fast becoming one of the single most important IT requirements.

More generally, advances in mobile communication, autonomous vehicles, artificial intelligence ('AI'), machine learning based services and the as-yet-unknown next generation 'Apps' to the ubiquitous connection of every 'thing' to the internet, there is no indication that cyber threats will diminish, or that denial of service will lose its potency as one of the weapons of choice for the cyber-criminals.

Corero intends to continue its path of innovation and growth whilst continuing to provide market leading solutions to secure its customers from the threat of DDoS attacks.

Outlook

The global COVID-19 pandemic has brought uncertainty globally in the wake of which we continue to be focused on remaining highly visible to our customers to support their ongoing requirements. Whilst we have not to date seen any significant short-term impact on the provision of our products and services, and the sector within which we operate, we are of course aware of the negative impact the pandemic is likely to have on our end-customers. The Board therefore continues to monitor the situation very closely.

Our strong sales order momentum achieved in the second half of 2019, combined with our higher levels of recurring revenue and a growing new business pipeline, provide Corero with solid foundations for 2020.

This improvement in our operational platform underpins our confidence in the growth potential of our business and reinforces our drive to deliver on our plans for 2020 and beyond.

Ashley Stephenson
Chief Executive Officer
3 April 2020

> *"DDoS attacks continue to grow in size and frequency. Most organizations need to understand their exposure and determine how much they should prepare for DDoS attacks."*
>
> **Gartner, DDoS: A Comparison of Defense Approaches, 24 April 2019**

> *"72.5% of the respondents rated their level of concern as high or medium-high when it comes to the potential impact of 5G on security. The rollout of 5G stands apart from previous generations of mobile communications in that 5G will eventually bring about major changes in technology and network architecture, as well as how businesses protect both through their cybersecurity approach."*
>
> **AT&T Cybersecurity Insights™ Report, Ninth Edition**

KEY INSIGHT

Traditional detect, redirect, mitigate solutions may be ineffective

DDoS attacks target victims for various reasons. Whatever the motivation, current data suggests that there is a 23% chance of a repeat attack to the same victim within 24 hours and a 36% chance of a repeat attack within 90 days.

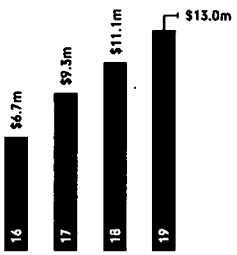
When combined with the data indicating that the majority of attacks are also less than 10 minutes, these findings call into question the efficacy of traditional detect, redirect and mitigate solutions that may need up to 10 minutes or more to initiate mitigation.

The only way to avoid repeat outages as a result of these attacks is to deploy active real-time protection against DDoS that can detect and mitigate in seconds or less.

> *"If you are attacked, there is a 23% chance the same IP address will be attacked again in the next 24 hours."*

Example customer attack – Corero media provider customer

KEY PERFORMANCE INDICATORS



SmartWall sales order intake ($)

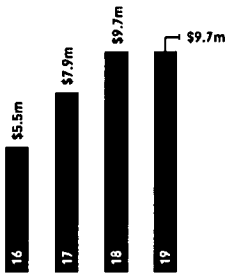
$13.0m

+18.0%

Represents purchase orders from customers including multi-year services and support orders.

Performance

SmartWall order intake for the year ended 31 December 2019 was $13.0 million up 18.0% versus 2018 (2018: $11.1 million), with $8.7 million (66.9%) representing recurring revenue in the form of support, services, and as-a-service contracts (2018: order intake was $11.1 million including recurring revenue order intake of $6.2 million). Corero had a record H2 2019 order intake of $8.0 million, an increase of 61.8% over H1 2019 and 35.8% over H2 2018.



SmartWall revenue ($)

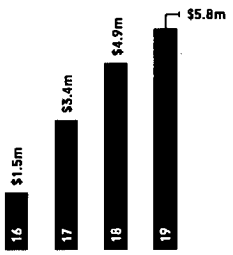
$9.7m

-0.8%

Represents statutory revenue for the SmartWall product, which is generated from the sales of SmartWall products and services and DDPaaS services. This revenue excludes the legacy product revenue of $0.05 million (2018: $0.2 million).

Performance

SmartWall revenue decreased by 0.8% to $9.66 million (2018: $9.74 million) due to a higher mix of DDPaaS long-term contract orders in 2019, the revenue for which is recognised over the term of the contract (typically three years).



SmartWall recurring revenue ($)

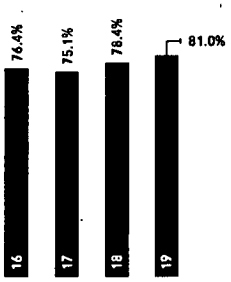
$5.8m

+19.9%

Represents maintenance, support services and as-a-service revenue for the SmartWall product, which is generated from the sales of SmartWall products and services and DDPaaS services. This revenue excludes the legacy product revenue of $0.05 million (2018: $0.2 million).

Performance

SmartWall recurring revenue grew by 19.9% in the year ended 31 December 2019 to $5.8 million (2018: $4.9 million) excluding $0.05 million relating to legacy products (2018: $0.2 million), representing 60.7% of total revenue (2018: 51.1%). Revenue from DDPaaS contracts increased over 57.0% to $1.3 million (2018: $0.8 million).



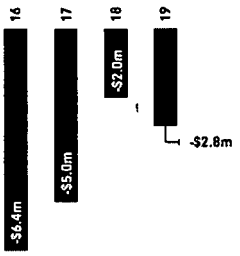
Gross margin (%)

81.0%

Represents statutory gross profit divided by statutory revenue. It measures the Group's underlying profitability before overheads.

Performance

Corero's gross margin increased to 81.0% (2018: 78.0%) as a result of the increase in recurring revenue services.



EBITDA ($)

-$2.8m

-33.3%

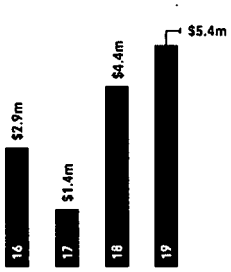
Represents the operating loss less unrealised foreign exchange differences on an intercompany loan, depreciation excluding DDoS protection as-a-service assets depreciation which is charged to cost of sales, amortisation and impairment of goodwill. The Directors consider EBITDA to be a better measure of profitability as it excludes non-cash items.

Performance

The EBITDA loss increased to $2.8 million in 2019 as a result of the 8.8% increase in adjusted operating expenses[1] in the year due to an increased share options charge, lower capitalised development costs and lower research and development government funding.

The share options charge in 2019 amounted to $0.3 million (2018: $0.02 million) as a result of the option grant to employees and Directors in October 2018 (see note 26). During the year the Group enhanced its existing products and developed new products with capital investment of $1.4 million (2018: $1.7 million). Development costs not capitalised and charged to the Statement of Comprehensive Income of $1.4 million during the year was higher than the prior year (2018: $0.9 million) due to the SmartWall product portfolio maturing and the development strategy focused on enhancements to the product portfolio as opposed to new product development. The overall development costs incurred in 2019 of $2.8 million was in line with the prior year (2018: $2.6 million). The research and development government funding reduced by $0.2 million in 2019 as a result of a reduction in research and development tax credit claims and the completion in 2018 of a Smart Scotland software development project grant, awarded in 2016.

1 comprises the operating loss less unrealised foreign exchange differences' on an intercompany loan, depreciation excluding DDPaaS assets depreciation which is charged to cost of sales, amortisation and impairment of goodwill. The Directors consider EBITDA to be a better measure of profitability as it excludes non-cash items and higher headcount related costs



Net cash ($)

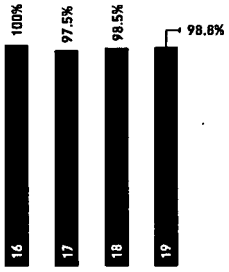
$5.4m

+22.7%

Represents cash at bank less total debt.

Performance

The cash at bank balance at 31 December 2019 was $8.3 million (2018: $8.0 million). The debt balance at 31 December 2019 was $2.9 million (2018: $3.6 million). The net cash used in operating activities in the year ended 31 December 2019 was $0.6 million (2018: $1.8 million). In the year ended 31 December 2019, the Company raised $4.0 million (after costs) from an equity fund raise in December 2019.



Security service and support contract renewals (%)

98.8%

Renewal rate of annuity SecureWatch service contracts (typically one-year contracts) by value.

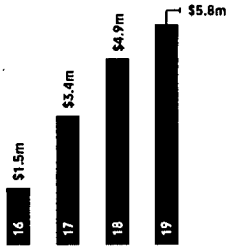
Performance

Corero continues to generate market leading renewal rates of 98.8% in 2018 (2018: 98.5%), a strong endorsement of customer satisfaction.

The renewal rate for the year ended 31 December 2016 reflects that 2016 was the first contract renewal cycle following the SmartWall product launch in the second half of 2014. The number of SmartWall customers has increased from less than 30 at 31 December 2015 to 120 at 31 December 2019.

FINANCIAL REVIEW

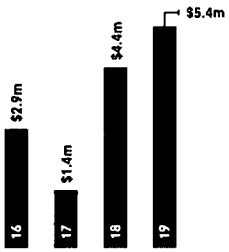
Corero ended the year strongly with a record final quarter order intake and a strengthened balance sheet following the equity fund raise in December 2019.



Smartwall recurring revenue ($)

$5.8m

+19.9%



Net cash ($)

$5.4m

+22.7%

Revenue growth and progress towards EBITDA break-even was impacted by lower than expected revenue as a result of the higher mix of DDPaaS long-term contract orders in 2019, the revenue for which is recognised over the term of the contract (typically three years).

The EBITDA[1] loss increased to $2.8 million as a result of an 8.8% increase in adjusted operating expenses[2] due to an increased share options charge, lower capitalised development costs and lower research and development government funding.

The 2019 operating loss of $6.2 million (2018: loss $5.0 million) includes amortisation of capitalised development expenditure of $2.6 million (2018: $2.9 million). In 2019 $1.4 million was spent on the continuing development of the SmartWall product portfolio (2018: $1.7 million).

The loss for the year after taxation amounted to $6.6 million (2018: $5.2 million) and includes:

- unrealised exchange loss of $0.3 million (2018: gain $0.4 million) arising on an intercompany loan; and
- finance costs of $0.4 million (2018: $0.3 million).

The loss for the year reflects the continuing investment in Corero's technology and sales and marketing activities. Corero is focused on delivering accelerated sales growth through expanded routes to market, which, with gross margins of 80%+ is expected to result in improved profitability.

The cash at bank balance at 31 December 2019 was $8.3 million (2018: $8.0 million). The debt balance at 31 December 2019 was $2.9 million (2018: $3.6 million). The net cash used in operating activities in the year ended 31 December 2019 was $0.6 million (2018: $1.8 million). In the year ended 31 December 2019, the Company raised $4.0 million (after costs) from an equity fund raise in December 2019.

Andrew Miller
Chief Financial Officer
3 April 2020

Loss per share

1.6 cents

(2018: loss per share 1.4 cents)

Group net assets at 31 December 2019

$17.1m

(2018: $19.0 million)

1 comprises the operating loss less unrealised foreign exchange differences on an intercompany loan, depreciation excluding DDoS protection as-a-service assets depreciation which is charged to cost of sales, amortisation and impairment of goodwill. The Directors consider EBITDA to be a better measure of profitability as it excludes non-cash items

2 operating expenses less unrealised foreign exchange differences on an intercompany loan, depreciation excluding DDoS protection as-a-service assets depreciation which is charged to cost of sales, amortisation and impairment of goodwill

KEY INSIGHT

Majority of DDoS attacks do not saturate uplinks

Corero analysed hundreds of thousands of attacks during 2019 and found that less than 0.6% resulted in a 10Gbps link being saturated, which is judged as more than 95% utilisation, also known as 'full pipe'.

99.4% of attacks do not reach 95% link saturation levels.

Furthermore, of those 0.6% of attacks that caused a link to reach saturation of 95% utilisation, the large majority (>95%) of those saturating attacks lasted less than 10 minutes.

> *"Over 99% of attacks do not reach 95% link saturation levels."*

Example customer attack – Corero hosting provider customer

PRINCIPAL RISKS AND UNCERTAINTIES

Corero is dependent on revenue growth to deliver on its strategy.

Lower sales growth will reduce the Company's cash resources which could impact the Company's investment in sales and marketing and product development.

Market awareness

Corero is an emerging player in the DDoS prevention market and competes with much larger organisations. If Corero is not successful in connecting with the market and raising its profile this will compromise growth plans.

To raise market awareness of Corero and its DDoS protection solutions, the Company will invest in targeted digital marketing and lead generation programmes.

Technology change and innovation

The DDoS mitigation market is competitive and characterised by changes in technology, customer requirements and frequent new product introductions and improvements. Cybersecurity and DDoS attacks are constantly evolving and changing as attackers develop new methods and tools to evade defences.

Corero is focused on its chosen markets and delivering continuous innovation by adding new DDoS attack defences and new machine learning and artificial intelligence capabilities, and striving to provide market leading solutions to secure customers from the threat of DDoS attacks.

People

Retaining and recruiting people with the necessary skills and experience. To grow and address the challenges resulting from technology change and innovation in the DDoS protection market, the Company needs to retain and recruit the required sales, business development, and software development skills. Corero operates in a high growth market with new players emerging. If Corero is unable to recruit and retain the right skills this will compromise growth plans.

Corero targets paying in the upper quartile for comparable positions and has a share options plan to provide an incentive for employees.

Sales growth

Corero's business success depends on growing SmartWall product and SecureWatch and DDPaaS service sales to new customers in its target market. If Corero is not successful in identifying customer prospects with a business need Corero can solve, or developing go-to-market partner and channel partner relationships which generate revenue, this will compromise growth plans and success.

To be successful Corero will:

- focus its lead generation and sales resources, and product development, on its target markets;
- work closely with go-to-market partners to progress sales opportunities and generate revenue; and
- develop relationships with new go-to-market partners and channel partners to expand its routes to market.

Brexit

The impact of Brexit, whilst giving rise to uncertainty, is not expected to have a significant impact on Corero.

EU customer impact

In the year ended 31 December 2019, 5.6% (2018: 7.5%) of Corero's order intake was generated from customers in the EU (excluding the UK), and 19.0% from customers in the UK (2018: 25.4%). Any potential short-term Brexit related impact on the movement of goods from the UK is not expected to materially impact Corero as hardware products can be shipped to EU based customers from Corero's US subsidiary.

The risk of a downturn in the UK and EU economies. Brexit may impact economic conditions in the UK and EU which may have an impact of customers' IT budgets. It is too early to forecast whether such an impact would materially impact Corero's business.

Sustained reduction in the value of GBP sterling

Corero equity fund raises are in GBP and its debt is denominated in GBP. To the extent such funds are required to support US dollar denominated funding requirements, the lower value of GBP reduces the value of US dollar denominated funding requirements that can be funded from such fund raises. The Group mitigates this risk by utilising US denominated funds received by the Group's UK subsidiary to fund the Group's US subsidiary to the extent such funding is required, with the GBP funding requirements satisfied from the GBP denominated funds generated from GBP equity and debt fund raises.

EU citizen employees UK working rights

Corero's UK workforce includes EU citizens. The rights of EU workers post the Brexit transition period have not been agreed and the uncertainty regarding Brexit is having a negative impact on such EU citizens.

Corero believes such uncertainty can be managed and that sufficient talent will be available post Brexit. Corero operates in the cyber security sector and employs high skilled workers; future EU citizen recruits are likely to qualify under a points based immigration system that is being considered by the UK government, albeit that salary costs may increase.

COVID-19 Pandemic

The global COVID-19 pandemic has brought uncertainty and wider market disruption globally. Whilst Corero has to date not seen any significant short-term impact on the provision of its products and services, and the sector within which the Company operates, there is likely to be a negative impact on Corero customers.

Operationally, remote working across the Group is fully operational worldwide, as the health and wellbeing of Corero's workforce is of the utmost importance.

The Company is closely monitoring its supply chain for the supply and delivery of hardware appliances to customers. There is a risk of COVID-19 resulting in possible supply chain constraints in the short-term and some IT purchasing decisions being delayed in the medium-term as the virus progressively shuts down operations.

As noted in the Director's Report on page 40, the uncertainties as a result of the COVID-19 pandemic could have an impact on the achievability of the Group's financial projections and working capital position which may cast significant doubt on the Company and the Group's ability to continue as a going concern for the foreseeable future.

The Board will continue to monitor the situation very closely.

RISK MANAGEMENT

The Company operates a risk assessment process, which is embedded in day-to-day management and governance processes. As part of the annual planning and budgeting process, Corero management document the significant risks identified, the probability of those risks occurring, their potential impact and the plans for managing and mitigating each of those risks.

The Board reviews the annual risk assessment including an annual assessment of the effectiveness of the Company's internal control system, comprising financial, operational and compliance controls, to ensure that the Company's risk management framework identifies and addresses all relevant risks in order to execute and deliver the Company's strategy.

The Directors are responsible for the Company's system of internal control and for reviewing its effectiveness, whilst the role of management is to implement policies on risk management and control. The Company's system of internal control is designed to manage, rather than eliminate, the risk of failure to achieve the Company's business objectives and can only provide reasonable, and not absolute, assurance against material misstatement or loss.

The Company operates a series of controls to meet its needs. These controls include, but are not limited to, the annual strategic planning and budgeting process, a clearly defined organisational structure with authorisation limits, reviews by senior management of monthly financial and operating information including comparisons with budgets, and forecasts to the Board.

The Audit, Risk and Compliance Committee ('ARCC') reviews the effectiveness of internal controls. The ARCC receives reports from management and observations from the external auditors concerning the system of internal control and any material control weaknesses. Significant risk issues, if any, are referred to the Board for consideration. The Corero Risk Register, auditor's report, assessment of the effectiveness of the internal control system and key judgements report for the Annual Report and Accounts were tabled and reviewed by the ARCC.

Given the size of the Company, the Board has concluded it is not appropriate to establish a separate, independent internal audit function. The Board will keep this under review.

SECTION 172 STATEMENT

The Directors are aware of their duty under Section 172 of the Companies Act 2006 to act in the way which they consider, in good faith, would be most likely to promote the success of the Company for the benefit of its members as a whole and, in doing so, to have regard (amongst other matters) to the:

- likely consequences of any decisions in the long-term;
- interests of the Company's employees;
- need to foster the Company's business relationships with suppliers, customers and others;
- impact of the Company's operations on the community and environment;
- Company's reputation for high standards of business conduct; and
- need to act fairly as between members of the Company.

The Board reviewed and confirmed the Company's key stakeholder groups during the year. These are set out below along with details of the forms of engagement undertaken by the Board.

Stakeholders	Why they matter	What matters to them
Shareholders	• Providers of capital to grow and invest for future success.	• Concerned with a broad range of issues including, but not limited to, Corero's financial and operational performance, strategic execution, investment plans and governance.
Employees	• Corero employees are a key resource, dedicated to creating, selling and supporting solutions that protect Corero's customers from the threat of DDoS attacks.	• Opportunities for personal development and career progression, a culture of inclusion and diversity, compensation and benefits, and the ability to make a difference within Corero.
Customers	• High availability of cloud services and applications are critical for modern businesses and institutions. As enterprises increasingly rely on technology to deliver products and solutions to their customers, their revenue streams rely on having internet connectivity protected from the threat of DDoS attacks.	• Corero customers are concerned with having products and services that protect their online presence and operations from the threat of DDoS attacks.
Partners	• Partners are an extension of Corero, representing the Corero brand in the market, providing an additional route to market to scale the business.	• Corero's partners harness Corero's innovative technology to deliver customer success through creation of unique joint value propositions. They share insights into what current and future customers want, ultimately impacting product strategy and roadmaps and accelerating business growth through sales and marketing programmes, as well as technical training.

SECTION 172 STATEMENT continued

> *"DDoS attacks are a frequent occurrence, with providers reporting thousands of attacks each day."*
>
> **Gartner, DDoS: A Comparison of Defense Approaches, 24 April 2019**

Stakeholders	Types of engagement	How the Board engages
Shareholders	• Communications such as annual reports, interim reports and notices of general meetings. • Investor roadshows. • Stock Exchange announcements and press releases. • Information about Corero and matters of interest to investors at www.corero.com.	• Board attendance at the AGM to answer questions. • Feedback on investor meetings held by the Chairman. • Executive Director meetings with investors in the UK.
Employees	• Various activities and forums to foster participation in Group events, invite opinions, questions and ideas. • Quarterly 'All Hands' Company employee briefings.	• Non-executive Directors attending 'town hall' meetings for employees at Corero's key locations to participate in a Q&A session.
Customers	• Executive Directors meet with customers throughout the year and feed back issues to the Board.	• Reviews strategy and monitors performance during the year with the aim of meeting customers' needs more effectively. • Receives regular competitor updates to understand Corero's competitive performance and its strengths and weaknesses as regards meeting customer needs.
Partners	• Partner Code of Conduct defining expectations of responsible business and behaviour. • Board reports, including updates on performance and key partner issues.	• Board updates regarding partner relationships, development and engagement. • Consideration of key strategic partnerships.

Key Board decisions made in the year are set out below:

Significant events/ decisions	Key Stakeholders impacted	Actions and impact
Recruitment of VP Worldwide Sales and investment in sales and marketing	Shareholders, employees, partners, customers	• Decision made to undertake a search with a specialist sales search firm to recruit an experienced sales leader. • Board approved appointment of VP Worldwide Sales in June 2019. • VP Worldwide Sales presented a sales plan to the Board to reshape and grow sales team with a focus on leveraging go-to-market and channel partners. • The strengthening of the sales team contributed to a strong H2 2019 order intake growth with 62% growth over H1 2019 and 36% growth over H2 2018.
Equity fund raise	Shareholders, employees, partners, customers	• In conjunction with the Company NOMAD, consulted with major shareholders and key strategic partner regarding funding requirements. • $4.0 million equity fund raise closed in December 2019, with participation from Juniper ($1.4 million).
Continued operational investment in the Juniper relationship	Partners, customers, employees	• Board engaged in quarterly review of progress of the Corero-Juniper engagement. • Regular Board member engagement with Juniper including senior Juniper management engagement. • Additional license pricing options added to the Juniper price list. • Focus and engagement resulted in five new customer deals in H2 2019 and a growing pipeline going into 2020.

RESPONSIBLE BUSINESS

Corero recognises that long-term success is underpinned by good relations with its key stakeholders, both internal (employees) and external (partners, suppliers, customers, shareholders, regulators and others). As part of Corero's annual planning and budgeting process, the Company identifies its stakeholders and their respective needs, interests and expectations. In addition, the strategy for engaging with these stakeholder groups is formulated and implemented. Corero values feedback from its stakeholders and proactively endeavours to address any matter identified. To date feedback has been gathered from: customers and partners feedback relating to Corero's products and services; employees as part of quarterly Company updates; and shareholders.

Our employees are one of Corero's most important assets and the continued and sustained development of the Company relies on its ability to retain and attract high calibre employees. Corero is proud to have over one-third of its employees with more than five years' service.

The Corero equal opportunities policy ensures that all job applicants and employees are treated fairly and without favour or prejudice. We are committed to applying this policy throughout all areas of employment, recruitment and selection, training, development and promotion.

The Corero equal opportunity policy sets out the Company's position on equal opportunity in all aspects of employment. The policy has been developed to maintain the following policy objectives:

To provide a safe and welcoming environment, in which individuals are valued, included and respected

To eliminate unfair discrimination

To advance equality of opportunity

To foster good relations between different groups of people

Corero aspires to carry out its business to the highest ethical standards, treating employees, partners, suppliers and customers in a professional, courteous and honest manner.

Employees are regularly informed of matters concerning their interest and the financial factors affecting the Company. The Company uses company-wide forums to communicate matters as well as team and individual meetings.

Corero operates an all-employee share option plan, with awards approved by the Corero Remuneration Committee.

Corero is committed to promoting sustainability. We aim to follow and to promote good sustainability practice, to carry out our operations in a way which manages and minimises any adverse environmental impacts from our activities.

Corero encourages the reuse or recycling of office waste, including paper, packaging, computer supplies and redundant equipment.

Wherever possible we seek to ensure that waste materials are disposed of in an environmentally safe manner and in accordance with regulations.

Corero is committed to the fundamental values of integrity, transparency and accountability. Corero has adopted an Ethics and Anti-Bribery Policy to record the ethical way in which we conduct business and to make our ethical standards clear to everyone, including those with whom we do business.

The Strategic Report on pages 6 to 27 is signed by order of the Board.

Duncan Swallow
Company Secretary
3 April 2020

BOARD OF DIRECTORS

Jens Montanana
Non-executive Chairman

Appointed
9 August 2010

Background & Experience

Jens has spent the majority of his over 30-year career in the technology industry with considerable operational and commercial experience in the resale and distribution of information technology hardware and software solutions. He is the founder and CEO of Datatec Limited, established in 1986 which listed on the Johannesburg Stock Exchange in 1994. Between 1989 and 1993 Jens served as Managing Director and Vice-President of US Robotics (UK) Limited, a wholly owned subsidiary of US Robotics Inc., which was acquired by 3Com. In 1993, he co-founded US start-up Xedia Corporation in Boston, an early pioneer of network switching and IP bandwidth management, which was subsequently sold to Lucent Corporation in 1999 for $246 million. He has previously served on the boards and sub-committees of various public companies.

Current Appointments

CEO of Datatec Limited and Director of various Datatec Limited subsidiary companies.

Committee Membership

Richard Last
Independent Non-executive Director*

22 May 2008

Richard has over 20 years' senior experience in information technology having worked at board level for a number of publicly quoted and private companies in the technology sector. He is a Fellow of the Institute of Chartered Accountants in England and Wales ('FCA').

* as Richard Last is a Corero shareholder and has been a Non-executive Director of the Company for over 10 years, his independence has been considered by the Board. The Board is satisfied that Richard Last is independent

Chairman of Hyve Group plc, an international events and exhibitions group listed on the London Stock Exchange. Chairman of AIM listed Gamma Communications plc, a UK telecommunications service provider, Tribal Group plc, a technology company, and Arcontech Group plc, a provider of IT solutions for the financial services sector.

Peter George
Independent Non-executive Director

3 January 2019

Peter George is a US based executive with over 30 years' experience in the IT networking and cybersecurity industry.

He has a successful track record as CEO of leading IT network and security companies and provides sales and marketing leadership experience to the Board.

Peter is the CEO of Evolv Technology, a US based leader in human security screening. Prior to that he was President and CEO of empow cybersecurity, a market innovator in AI, machine learning and advanced security analytics. Prior to empow, between 2008 to 2017, he was President and CEO of Fidelis Cybersecurity, a leading US-based Advanced Threat Defense business. Before joining Fidelis, Peter was President and CEO of Crossbeam Systems, a market leader in Unified Threat Management. Prior to that he was the President of Nortel Networks' enterprise business where he was responsible for growing a $2 billion and 5,000 employee voice and data business in EMEA.

CEO of Evolv Technology Inc.

Committee Membership

- ● Nomination Committee
- ⁘ Remuneration Committee
- ◌ Audit, Risk and Compliance Committee
- © Chairman

Ashley Stephenson Chief Executive Officer	**Andrew Miller** Chief Financial Officer	**Duncan Swallow** Company Secretary
6 September 2013	**9 August 2010**	**1 November 2007**
Ashley is an IT industry executive and internet technology entrepreneur, with operating experience in the United States, Europe and Asia. His previous experience includes: CEO of Reva Systems, which was acquired by ODIN, and CEO of Xedia Corporation, which was acquired by Lucent. He has provided strategic advisory services to a number of leading multinational IT companies including technology vendors, distributors and services companies. Ashley began his career at IBM Research & Development in the UK. He is a graduate of Imperial College, London with a degree in Physics and is an Associate of the Royal College of Science. Ashley has deep technology and software development skills and experience. Ashley also acts as Corero's Chief Technology Officer.	Prior to joining the Company, Andrew was with the Datatec Limited group in a number of roles between 2000 and 2009 including Logicalis Group Operations Director and Corporate Finance and Strategy Director. He ran the Logicalis acquisition strategy, acquiring and integrating 12 companies in the US, UK, Europe and South America. Prior to this, Andrew gained considerable corporate finance experience in London with Standard Bank, West Deutsche Landesbank and Coopers & Lybrand. He trained and qualified as a Chartered Accountant and has a bachelor's degree in Commerce from the University of Natal, South Africa. Andrew is a Chartered Accountant with 20 years' experience in the technology industry.	Duncan is responsible for the Company secretarial function and is also the Group Financial Controller. Prior to joining the Company, Duncan was Divisional Financial Controller for CCH, a Wolters Kluwer business, specialising in providing books, online information, software, CPD and fee protection to tax and accounting professionals. He is a fellow of the Association of Chartered Certified Accountants.
Director of Eyealike, Inc. and StepVest LLC.	None	None
N/A	N/A	N/A

CHAIRMAN'S GOVERNANCE INTRODUCTION

Following the fundraising in December 2019, we have commenced our investment programme, which includes expanding our routes to market and broadening our sales coverage.

Board commitment to governance

The Board is committed to upholding high standards of corporate governance, protecting and growing shareholder value, and engaging in a fair and transparent manner with all of the Group's stakeholders.

The Board therefore supports and is committed to the principles of the QCA Corporate Governance Code. Details of our governance processes and procedures are set in out on pages 32 and 33.

Board leadership and effectiveness

The Board recognises that to remain effective it must ensure that it has the right balance of skills, experience, knowledge and independence to enable it to discharge its duties and responsibilities. The Directors believe in the necessity for open debate in the boardroom and consider that existing Board dynamics and processes encourage honest and open debate with the Executive Directors. We conduct an annual internal Board evaluation review. The most recent review conducted in February 2020 showed that the Board is operating effectively.

Our culture

The Board undertakes informal enquiries of employees to ensure our values are upheld and promoted to maintain a healthy corporate culture. Board meetings are held at Corero's offices in the US and UK which gives the Board the opportunity to informally interact with employees based at those office locations.

Board composition

The Board comprises two Executive Directors and three Non-executive Directors (including the Chairman), two of whom are independent. Peter George was appointed to the Board on 3 January 2019 to both broaden our US reach and deliver a greater balance of independence to our Board.

As previously announced, Andrew Miller will be stepping down from his role as Chief Financial Officer in the coming months to take up a position with a private equity business, at which time he will take up the role of Non-executive Director of Corero. The Board has commenced a process to identify and appoint a successor.

Stakeholder engagement

We seek to maintain an open dialogue with all stakeholders including shareholders, customers, partners, suppliers and our employees.

Details of our stakeholders along with details of the forms of engagement undertaken by the Board are set out on pages 23 to 25.

Looking ahead

Corero enters 2020 following a strong 2019 second half performance and a growing recurring revenue base. Improvements in our operating platform and investment in sales and marketing, against a backdrop of strong forecast growth in the DDoS market, underpins our confidence in the growth potential of the business. The Corero management team is focused on delivering revenue growth and adding new customers.

I would like to give thanks to our institutional and private investors for their continued support. Finally, thank you to all our employees for their hard work and commitment.

Jens Montanana
Chairman
3 April 2020

KEY TREND

Continued increase in DDoS attacks over 10Gbps

The continuing trend is that the average size of attacks is increasing. There is a trend shifting from smaller sub 1Gbps attacks to larger 1Gbps-5Gbps attacks as a percentage of all attacks during 2019.

There is a measurable increase of 35% in the ratio of attacks over 10Gbps in 2019 compared to 2018 levels. This trend continues and is around double the 2016 levels.

"We have seen a 35% increase in attacks greater than 10Gbps over the past year."

35%

Increase in DDoS Attacks Over 10Gbps

Size	2017	2018	2019
< 1Gbps	82%	82%	75%
1Gbps-5Gbps	14%	13%	17%
5Gbps-10Gbps	3%	3%	3%
> 10Gbps	1.5%	1.7%	2.3%

QCA CODE COMPLIANCE

1	2	3	4	5
Establish a strategy and business model to promote long-term value for shareholders	**Understand and meet shareholder needs and expectations**	**Take into account wider stakeholder and social responsibilities and their implications for long-term success**	**Embed effective risk management, considering both opportunities and threat, throughout the organisation**	**Maintain the Board as a well-functioning, balanced team led by the chair**
Corero's strategy is focused on being the leader in real-time, high performance DDoS protection and scaling the business for profitability though sales growth.	The CEO and CFO communicate regularly with shareholders, investors and analysts, including at our half-yearly results roadshows. The full Board is available at the AGM to communicate with shareholders.	Aside from our shareholders, our customers, partners and employees are our most important stakeholders. We engage with these communities via regular communications in our day-to-day activities, and via formal feedback requests.	Ultimate responsibility for risk management rests with the Board. Day-to-day management of risk is delivered through the way we do business and our culture.	The Board has three established Committees: Audit, Risk and Compliance Committee; Nomination Committee; and Remuneration Committee. The composition and experience of the Board is reviewed regularly, primarily by the Nomination Committee.
For more information see pages 10 and 11	For more information visit **https://www.corero.com/who-we-are/investor-relations**	For more information see pages 23 and 24	For more information see page 22	For more information see pages 34 to 39

6	7	8	9	10
Ensure that between them the Directors have the necessary up-to-date experience, skills and capabilities	**Evaluate Board performance based on clear and relevant objectives, seeking continuous improvement**	**Promote a corporate culture that is based on ethical values and behaviours**	**Maintain governance structures and processes that are fit for purpose and support good decision making by the Board**	**Communicate how the Company is governed and is performing by maintaining a dialogue with shareholders and other relevant stakeholders**
The Board is satisfied that its current composition includes an appropriate balance of skills, experience and capabilities, including experience of the cyber security market and international markets.	The Board regularly considers the effectiveness and relevance of its contributions, any learning and development needs and the level of scrutiny of the senior management team. An annual Board effectiveness review is undertaken to enable the Board to stand back and assess its strengths and areas for development.	Corero recognises the importance of culture and values and in conjunction with employees defined the Company's agreed values which are reinforced via training and performance management.	The Board is responsible for the Group's overall strategic direction and management, and for the establishment and maintenance of a framework of delegated authorities and controls to ensure the efficient and effective management of the Group's operations. The Board is satisfied that the necessary controls and resources exist within the Company to enable these responsibilities to be met.	The investors section of our website includes our annual report, results, presentations, notice of AGM and results of the AGM and general meetings.
For more information see pages 28, 29 and 34	For more information see page 37	For more information see page 02	For more information see pages 34 to 39	For more information visit **https://www.corero.com/who-we-are/investor-relations**

CORPORATE GOVERNANCE REPORT

Board composition and responsibilities

The Board sets Corero's overall strategic direction, reviews management performance and ensures that the Company has the necessary financial and human resource in place to meet its objectives. Operational management of the Company is delegated to the Chief Executive Officer.

The Board comprises the Non-executive Chairman, two independent Non-executive Directors and two Executive Directors whose Board and Committee responsibilities are set out below:

	Non-executive / Executive Director	Board	Audit, Risk and Compliance Committee	Remuneration Committee	Nomination Committee
Jens Montanana	Non-executive	Chairman		Member	Chairman
Richard Last	Non-executive	Member	Chairman	Member	Member
Peter George	Non-executive	Member	Member	Chairman	Member
Ashley Stephenson	Executive	Member			
Andrew Miller	Executive	Member			

One third of all Directors are subject to annual reappointment by shareholders, as well as any Director appointed to the Board in the period since the last AGM, and any Non-executive Director whose tenure is more than nine years or whose independence is the subject of Board judgement. Jens Montanana, Richard Last and Andrew Miller will be offering themselves for re-election at the forthcoming AGM.

The Corero Board members biographies and their relevant experience, capabilities and skills and are set out on pages 28 and 29.

Board balance and independence

The composition of the Board is reviewed regularly. Appropriate training, briefings, and inductions are available to all Directors on appointment and subsequently as necessary, taking into account existing qualifications and experience.

The Board is satisfied that, between the Directors, it has an effective and appropriate balance of skills and experience, including operational, commercial and technology expertise and experience. All members of the Board have more than 20 years' technology experience through investing in and working for a range of companies from start-ups to large established technology companies, with complementary financial, commercial, sales and marketing skills.

The skills and experience of the Board is summarised in the table below:

	Technology	Cyber security	Sales and marketing	People	International	Governance	Finance
Jens Montanana	✓	✓	✓	✓	✓	✓	
Richard Last	✓			✓	✓	✓	✓
Peter George	✓	✓	✓	✓	✓		
Ashley Stephenson	✓	✓		✓	✓		
Andrew Miller	✓			✓	✓	✓	✓

The Board is cognisant of the lack of gender diversity and plans to address this as the Company grows.

All Directors are able to take independent legal advice in relation to their duties, if necessary at the Company's expense. In addition, the Directors have direct access to the advice and services of the Company Secretary and Chief Financial Officer. The Directors keep their skills up to date through a combination of their other roles (if applicable), attending appropriate training courses and seminars funded by the Company if appropriate, and by reading widely.

There are no external advisers to the Board or any of its Committees, other than the auditors (BDO LLP).

Corero's Chairman, Jens Montanana, is a material shareholder with an equity interest in Corero of 37.85% at 3 April 2020. His interests are strongly aligned with all shareholders.

Richard Last is a Corero shareholder with a 0.5% equity interest in Corero at 3 April 2020 and has been a Non-executive Director of the Company for over 10 years. His independence has been considered by the Board. The Board is satisfied that Richard Last is independent.

Employment and service agreements

The Director employment and service contracts are summarised below:

- Ashley Stephenson has an employment agreement which provides for the payment of six months' base salary if the agreement is terminated by the Company without cause.
- Andrew Miller, Executive Director, has an employment agreement which can be terminated by either party on not less than six months' written notice. The agreement contains provisions for early termination in certain circumstances.
- The Non-executive Director's letters of appointment are for 12-month terms and provide that the appointment may be terminated by either party giving to the other not less than three months' notice.

Non-executive Directors, per their letters of appointment, have a time commitment to the Company of not less than eight days per annum including the attendance of Board meetings and the Company AGM. In addition, Non-executive Directors are expected to devote appropriate preparation time ahead of each meeting.

Board responsibilities

The Board meets on average once a quarter; additional meetings or conference calls are held as required. Each Director is provided with sufficient information to enable them to consider matters in good time for meetings and enable them to discharge their duties properly.

The Board also ensures that the principal goal of the Company is to create shareholder value, while having regard to other stakeholder interests, and takes responsibility for setting the Company's values and standards.

The Board has a formal schedule of matters reserved to it for consideration and approval. These include:

Strategy and management

- Responsibility for the overall strategy and management of the Company.
- Approval of strategic plans and budgets and any material changes to them.
- Approval of the acquisition or disposal of subsidiaries and major investments, projects and contracts.
- Changes relating to the Company's capital structure.
- Delegation of the Board's powers and authorities.

Financial matters and internal controls

- Oversight of the Company's operations ensuring competent and prudent management, sound planning and management of adequate accounting and other records.
- Approval of the annual and interim financial statements and accounting policies.
- Approval of the dividend policy.
- Ensuring an appropriate system of internal control and risk management is in place.

Corporate Governance

- Approval of changes to the structure, size and composition of the Board.
- Review of the management structure and senior management responsibilities.
- With the assistance of the Remuneration Committee, approval of remuneration policies.
- Consideration of the independence of the Non-executive Directors.
- Receiving reports on the views of the Company's shareholders.

The Board receives monthly briefings on the Company's performance (including commentary and analysis), key issues and risks affecting the Company's business.

CORPORATE GOVERNANCE REPORT continued

The Company maintains liability insurance for its Directors and Officers. The Company has also entered into indemnity agreements with the Directors, in terms of which the Company has indemnified its Directors, subject to the Companies Act limitations, against any liability arising out of the exercise of the Directors' powers, duties and responsibilities as a Director or Officer.

In the year ended 31 December 2019, the Board met on five scheduled occasions; further meetings and conference calls were held as and when necessary (with six additional such meetings in the year ended 31 December 2019). Details of Directors' attendance at scheduled meetings in the year to 31 December 2019 is shown in the table below:

	Meetings attended
Jens Montanana	5/5
Richard Last	5/5
Peter George	5/5
Ashley Stephenson	5/5
Andrew Miller	5/5

Directors' conflict of interest

The Company has effective procedures in place to monitor and deal with conflicts of interest. The Board is aware of the other commitments and interests of the Directors, and changes to these commitments and interests are reported to and, where appropriate, agreed with the rest of the Board.

Evolution of the Company's governance framework

The Board will, on an on-going basis, and as the Company's business develops and grows, review the appropriateness of the governance framework, including the composition of the Board and the requirement for an internal audit function, to ensure the Company delivers on its strategy and goals whilst maintaining appropriate governance structures.

BOARD PERFORMANCE AND REMUNERATION POLICY

An annual Board effectiveness review is undertaken to enable the Board to stand back and assess its strengths and areas for development. This review is conducted internally. A review was conducted in February 2020, the results of which showed that the Board is operating effectively. Each Board members' performance over the past twelve months will be formally reviewed by the Chairman before the next Board meeting.

The Board plans to refresh the performance assessment process based on external advice and if appropriate engage a third-party facilitator to assist in the performance of such effectiveness reviews every three years.

The Remuneration Committee's ('RC') remit is to measure the performance of and determine the remuneration policy relating to Directors and senior employees. To support this responsibility, it has access to professional and other advice external to the Group. Taking the performance factors into account, it then makes recommendations to the Board.

To assist the work of the RC, the views of the Chief Executive Officer and Chief Financial Officer are also invited where appropriate. However, they do not participate in any decision related to their own remuneration.

The Nomination Committee reviews and recommends nominees as new Directors to the Board. Senior management appointments are required to be approved by the RC.

The Group is committed to the governing objective of maximising shareholder value over time. Each year the remuneration framework and the packages of the Directors are reviewed to ensure they continue to achieve this objective.

The Group operates in the cyber security market which is a market with significant growth potential. It is also a competitive market with a number of companies who are significantly larger than Corero. The Group's Executive Director remuneration policy is designed to attract and retain Directors of the calibre required to maintain the Group's position in its marketplace. This is maintained through the use of bonus and share option schemes, as follows:

Bonus

A cash bonus designed to incentivise specific short-term financial goals. Goals and objectives are set for the Executive Directors with a significant weight being on key financial performance metrics. Executive Directors' on-target bonuses are set at two-thirds of base salary.

Share options

Share options are granted to encourage and reward delivery of the Company's long-term strategic objectives and provide alignment with shareholders through the use of share-based incentives.

All share-based incentives offered to Directors have a three year vesting schedule, with one-third vesting on the first anniversary of the grant/start date, a further third on the second anniversary of the grant/start date and the final third the third anniversary of the grant/start date. Shares acquired on the exercise of options may not be sold until the second anniversary of the grant date. Share options are granted with an exercise price set at the higher of market price or such other price as determined by the RC.

Conflicts of interest

The members of the RC do not have any conflicts from cross-directorships that relate to the business of the Committee. The members of the RC do not have any day-to-day involvement in the running of the Group.

Given Corero's size, the Company does not have internal succession candidates for the Executive Directors. In the event an Executive Director replacement is required, the Company would seek to recruit a replacement through a recruitment search process. The Board are satisfied that the Company's middle management will ensure the Company's business is not adversely impacted in the period between an Executive Director leaving and a replacement being recruited.

COMMITTEE REPORTS

The Board has three established Committees:

- Audit, Risk and Compliance Committee: responsible for reviewing the Group's interim and year end results announcements, and the annual report and accounts; determining the application of the financial reporting and internal control and risk management procedures and assessing the scope, quality and results of the external audit.
- Remuneration Committee: responsible for the policy for the remuneration of the Executive Directors and senior management; setting the remuneration of the Executive Directors, determining the payment of bonuses to Executive Directors; and approving the Company's bonus and incentive arrangements for employees.
- Nomination Committee: responsible for reviewing the composition, structure and size of the Board; assessing the leadership needs of the Group; and recommending nominees as new Directors to the Board.

Audit, Risk and Compliance Committee ('ARCC') Report

The ARCC members comprise Richard Last, who is the Committee Chairman, and Peter George, and meets at least twice a year. The Company's Chief Financial Officer and Group Financial Controller, and the Company's external auditors attend the meetings.

In the year ended 31 December 2019, the ARCC met on two occasions. The attendance of individual Committee members at ARCC meetings in the year to 31 December 2019 is shown in the table below:

	Meetings attended
Richard Last	2/2
Jens Montanana (stepped down on 3 June 2019)	1/1
Peter George (appointed 3 June 2019)	1/1

The ARCC's activities during the year, based on its terms of reference, are set out below:

- Reviewed the scope and results of the external audit, its cost effectiveness and the objectivity of the auditors.
- Reviewed, prior to publication, the interim financial statements, preliminary results announcement, the annual financial statements and the other information included in the Annual Report.
- Considered the regulatory, technical and operational risks of the Company and ensured these risks are properly assessed, monitored and reported on and the appropriate policies and procedures are in place.

The key financial reporting judgements relating to the financial statements for the year ended 31 December 2019 which the ARCC have considered and discussed with the auditors, include:

	Financial Statements note
Going concern basis for financial statements	2.2
Revenue recognition and the application of IFRS 15	2.5
Carrying value of goodwill and intangible assets	2.12 and 8

The ARCC are satisfied with the treatment in the financial statements and the disclosure in the notes.

Remuneration Committee ('RC') Report

The RC comprises Peter George (appointed on 8 April 2019 and appointed Committee Chairman on 3 June 2019), Jens Montanana (who was the Committee Chairman up to 3 June 2019), and Richard Last. The RC meets at least twice a year.

In the year ended 31 December 2019, the RC met on two scheduled occasions; further meetings and conference calls were held as and when necessary (with one additional meeting in the year ended 31 December 2019). The attendance of individual Committee members at scheduled RC meetings in the year to 31 December 2019 is shown in the table below:

	Meetings attended
Peter George	2/2
Richard Last	2/2
Jens Montanana	2/2

The RC's activities during the year, which are based on its terms of reference, are set out below:

- Reviewed the performance of the Executive Directors and set the remuneration of the Executive Directors.
- Determined the payment of bonuses to Executive Directors and approved the Company's bonus and incentive arrangements for employees.
- Ensured the Company's share option schemes were operated properly and approved the share option grants to Executive Directors and employees.

The remuneration of the Chairman and Non-executive Directors is decided upon by the Board.

Details of Directors' remuneration for the year ended 31 December 2019 is set out in note 23 of the financial statements.

Nomination Committee ('NC') Report

The NC was established on 3 June 2019 and comprises Jens Montanana (Chairman), Richard Last and Peter George. The NC meets as required.

In the year ended 31 December 2019, the NC met on one scheduled occasion. The attendance of individual Committee members at NC meetings in the year to 31 December 2019 is shown in the table below:

	Meetings attended
Jens Montanana	1/1
Richard Last	1/1
Peter George	1/1

The NC's activities during the year, which are based on its terms of reference, are set out below:

- Reviewed the composition, structure, and size of the Board.
- Reviewed the leadership needs of the Group.

DIRECTORS' REPORT

Group results

The Group's Statement of Comprehensive Income on page 48 shows a loss for the year of $6.6 million (2018: loss $5.2 million).

Going concern

The financial position and cash flows are described in the Financial Review on page 18. An indication of likely future developments affecting the Company is included in the Strategic Report on pages 8 to 27.

The Directors are, based on detailed financial projections, of the opinion that the Group and Company has adequate working capital to continue as a going concern for the foreseeable future and, in particular, for a period of at least 12 months from the date of approval of these financial statements. The financial projections take into account the operational progress made by the Company over the past year and future opportunities as described in the Chief Executive Strategic Update on pages 12 to 14, and the Group's Strategy as detailed on page 11 which is focused on scaling the business towards profitability.

However, the ability of the Company and Group to achieve the future profit and cash flow projections cannot be predicted with certainty. Additionally the potential impact of the COVID-19 global pandemic on the business of the Company and Group is uncertain.

Failure of the Company and the Group to meet these projections and deliver revenue growth may adversely impact the achievability of the bank loan covenants which may result in the bank loan being required to be repaid before the maturity date if the revenue and cash consumption covenants are not met and cannot be renegotiated. This would adversely impact the Company and the Group's working capital position and would require the Company to raise additional funding, with no guarantee such funding would be secured.

These circumstances indicate a material uncertainty that may cast significant doubt on the Company and the Group's ability to continue as a going concern for the foreseeable future. However, although the Directors are confident, based on the forecast assumptions and information available at the present time, that the Company and Group will achieve the forecasts, they consider if it becomes necessary that the covenants could be renegotiated or further funds raised, and have therefore concluded that it is appropriate to prepare the financial statements on a going concern basis. The financial statements do not include the adjustments that would result if the Group and Company were unable to continue as a going concern. Further details are included within notes 2 and 3 to the financial statements.

Dividends

The Directors have not recommended a dividend (2018: $nil).

Share capital

The issued share capital of the Company, together with details of movements in the Company's issued share capital during the financial period are shown in note 21 to the financial statements. As at the date of this report, 494,852,304 ordinary shares of 1p each ('ordinary shares') were in issue and fully paid with an aggregate nominal value of $6.9 million.

The market price of the ordinary shares at 31 December 2019 was 5.88p and the shares traded in the range 2.44p to 12.89p during the year.

Issue of shares

At the AGM held on 21 May 2019, shareholders granted authority to the Board under the Articles and section 551 of the Companies Act 2006 (the 'Act') to exercise all powers of the Company to allot relevant securities up to an aggregate nominal amount of £1,339,972.76.

Also at the AGM held on 21 May 2019, shareholders granted authority to the Board under the Articles and section 570(1) of the Act to exercise all powers of the Company to allot equity securities wholly for cash up to an aggregate nominal amount of £401,991.83 without application of the statutory pre-emption rights contained in section 561 (1) of the Act.

Substantial shareholdings

The Company has been notified of the following holdings that are 3% or more of the Group's ordinary share capital as at 3 April 2020:

Ordinary shares of 1 pence each	Number	%
Jens Montanana*	187,300,406	37.85
Premier Miton Group PLC	65,126,137	13.16
Juniper Networks, Inc.	49,179,772	9.94
Sabvest Capital Holdings Limited	36,250,000	7.33
Herald Investment Management	34,592,121	6.99
Richard John Koch	32,936,500	6.66
Peter Kennedy Gain**	25,815,241	5.22

* of which 33,674,846 are held in the name of JPM International Limited, which is wholly owned by Jens Montanana, and 125,871,751 are held in the name of The New Millennium Technology Trust of which Jens Montanana is a beneficiary

** of which 4,900,000 shares are held in the name of Draper Gain Investments Ltd

Directors' shareholdings

	3 April 2020		31 December 2019		31 December 2018	
	Number	%	Number	%	Number	%
Jens Montanana	187,300,406	37.85	187,300,406	37.85	154,382,609	38.40
Richard Last	2,500,000	0.51	2,500,000	0.51	2,000,000	0.50
Peter George	-	-	-	-	-	-
Ashley Stephenson	38,000	0.01	38,000	0.01	38,000	0.01
Andrew Miller	1,091,437	0.22	1,091,437	0.22	1,091,437	0.27

Directors' indemnities

The Company has qualifying third-party indemnity provisions in place for the benefit of its Directors. These remain in force at the date of this report.

Directors and Directors' interests

The Directors who served in office during the year and up to the date of this report and their interests in the Company's shares were as above.

The biographical details of the current Directors of the Company are set out on pages 28 and 29.

Jens Montanana, Richard Last, Peter George, Ashley Stephenson, and Andrew Miller hold share options, details of which are shown in note 26 to the financial statements.

Financial risk management objectives and policies

The Group's business activities expose it to a variety of financial risks. The policies for managing these risks are described below:

- Liquidity risk - arises from the Group's management of working capital and finance charges. It is a risk that the Group will encounter difficulty in meeting its financial obligations, including a repayment term bank loan drawn down by the Company in May 2018 ($2.9 million at 31 December 2019) details of which are set out in note 17, as they fall due. Liquidity risk is managed by the finance function. Annual budgets are agreed by the Board, enabling the Group's cash flow requirements to be anticipated.
- Credit risk - arises from cash and cash equivalents and from credit exposures to the Group's customers including outstanding receivables and committed transactions. Credit risk is managed with regular reports of exposures reviewed by management. The Group does not set individual credit limits but seeks to ensure that customers enter into legally enforceable contracts that include settlement terms that demonstrate the customers' commitment to the transaction and minimise this risk exposure.

The amounts of trade receivables presented in the Statement of Financial Position are shown net of allowances for doubtful accounts estimated by management based on prior experience and their assessment of the current economic environment (note 14).

The Group has no significant concentration of credit risk, with exposure spread over a number of customers.

The credit risk on liquid funds and financial instruments is limited because the counterparties are banks with acceptable credit ratings assigned by international credit rating agencies.

- Cash flow interest rate risk - the Group's policy is to as far as possible minimise interest rate cash flow risk exposure on its financing. The Group is exposed to interest rate increases on the term bank loan ($2.9 million at 31 December 2019) details of which are set out in note 17, which bears interest at 3-month GBP Libor plus 7.5%. The bank loan does not have early repayment penalties and thus the Group can if GBP interest rates increase to punitive levels, seek to refinance the loan. The Group's policy is to balance the risk in relation to cash balances held by spreading these across a number of financial institutions as opposed to maximising interest income.
- Currency risk - there was no material impact from trading currency risk on the Group's profit or loss for the year from exchange rate movements, as foreign currency transactions are entered into by Group companies whose functional currency is aligned with the currencies in which it transacts. Exchange rate risks do arise in relation to (i) the bank loan which is GBP denominated and equity fund raises which are in GBP, given the Company's AIM listing, to the extent such funds are required to support US dollar denominated funding requirements, and (ii) GBP denominated obligations of the Group given the invoicing currency of the Group is US dollar denominated. The Group has not hedged such GBP debt and equity fund raises or GBP denominated expenses in the past as US denominated funds received by the Group's UK subsidiary have been used to fund the Group's US subsidiary to the extent such funding has been required, with the GBP funding requirements satisfied from the GBP denominated funds generated from GBP debt and equity fund raises. The Group keeps this policy under review based on the expected timing of US dollar and GBP operational funding requirements.

The global COVID-19 pandemic has brought uncertainty and wider market disruption globally. The Company is closely monitoring its supply chain for the supply and delivery of hardware appliances to customers. There is a risk of COVID-19 resulting in possible supply chain constraints in the short-term and some IT purchasing decisions being delayed in the medium-term as the virus progressively shuts down operations.

DIRECTORS' REPORT continued

The Group has undertaken financial scenario planning to identify actions that may need to be taken in the event that delays to customers decision making impacts revenue and cash. These actions will be implemented as required.

The principal risk which applies to the Parent Company's financial statements is the risk that the returns generated by the subsidiaries might not support the carrying value of the cost of the investments in subsidiaries. The carrying value is tested at least annually for impairment and, if necessary, impaired.

Capital management

The Group monitors its available capital, which it considers to be all components of equity against its expected requirements.

The Group's objectives when maintaining capital are to safeguard the entity's ability to continue as a going concern, so that it can continue to provide returns for shareholders and benefits for other stakeholders, and to ensure that sufficient funds can be raised for investing activities. In order to maintain or adjust the capital structure, the Company may return capital to shareholders, issue new shares, or sell assets. The Group does not review its capital requirements according to any specified targets or ratios.

Treasury management

The objectives of Group treasury policies are to ensure that adequate financial resources are available for development of the business while at the same time managing financial risks. Financial instruments are used to reduce financial risk exposures arising from the Group's business activities and not for speculative purposes.

The Group's treasury activities are managed by the Group Financial Controller who reports to the Board on the implementation of Group treasury policy.

Environment

The Group's activities are primarily office based and as such the Directors believe that there is no significant environmental impact arising from the Group's activities. The Group complies with local WEEE regulations. No environmental performance indicators are therefore included within this report. The Group's environmental policy states: "We endeavour to recycle appropriate materials where possible and to efficiently use natural resources and energy supplies so as to minimise our environmental impact. We will comply with the relevant statutes and legislation. Furthermore, employees are encouraged to be environmentally aware. Company cars are not provided."

Research and development

The development of computer software is an integral part of the Group's business and the Group continues to develop its software in response to user demand, and particularly the changing IT security threat landscape. During the year the Group enhanced its existing products and developed new products. A capital investment of $1.4 million (2018: $1.7 million) was made during the year. Amortisation of $2.6 million (2018: $2.9 million) and costs not capitalised of $1.4 million (2018: £0.9 million) were charged to the Statement of Comprehensive Income during the year.

Employees

The quality and commitment of the Group's employees has played a major role in the Company's progress. This has been demonstrated in many ways, including strong customer satisfaction, the development of new product offerings and the flexibility employees have shown in adapting to changing business requirements. The Group operates sales commission, incentive bonus plans and share option plans to provide incentives for achievements which add value to the business.

Annual General Meeting

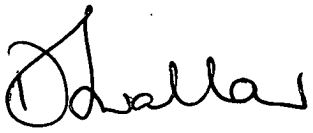
A circular including the notice convening the AGM together with details of the business to be considered will be sent to shareholders in due course.

Auditors

In so far as each Director is aware:

- there is no relevant audit information of which the Company's auditors are unaware; and
- the Directors have taken all the steps that they ought to have taken to make themselves aware of any relevant audit information and to establish that the Company's auditors are aware of that information.

By order of the Board



Duncan Swallow
Company Secretary
3 April 2020

STATEMENT OF DIRECTORS' RESPONSIBILITIES

The Directors are responsible for preparing the Annual Report and Financial Statements in accordance with applicable law and regulations.

Company law requires the Directors to prepare financial statements for each financial year. Under that law the Directors have elected to prepare the Group financial statements in accordance with International Financial Reporting Standards as adopted by the European Union ('IFRSs'). The Directors have chosen to prepare the Company financial statements in accordance with FRS101. Under company law the Directors must not approve the financial statements unless they give a true and fair view of the state of affairs of the Group and Parent Company and of the profit or loss of the Group for that period. The Directors are also required to prepare financial statements in accordance with the rules of the London Stock Exchange for companies trading securities on the AIM. In preparing these financial statements, the Directors are required to:

- select suitable accounting policies and then apply them consistently;
- make judgements and estimates that are reasonable and prudent;
- state whether they have been prepared in accordance with IFRSs as adopted by the European Union, subject to any material departures disclosed and explained in the financial statements; and
- prepare the financial statements on the going concern basis unless it is inappropriate to presume that the Group will continue in business.

The Directors are responsible for keeping adequate accounting records that are sufficient to show and explain the Group's transactions and disclose with reasonable accuracy at any time the financial position of the Group and enable them to ensure that the financial statements comply with the Companies Act 2006. They are also responsible for safeguarding the assets of the Group and hence for taking reasonable steps for the prevention and detection of fraud and other irregularities.

The Directors are responsible for ensuring the annual report and the financial statements are made available on a website. Financial statements are published on the Company's website in accordance with legislation in the United Kingdom governing the preparation and dissemination of financial statements, which may vary from legislation in other jurisdictions. The maintenance and integrity of the Company's website is the responsibility of the Directors. The Directors' responsibility also extends to the ongoing integrity of the financial statements contained therein.

INDEPENDENT AUDITOR'S REPORT

to the members of Corero Network Security plc

Opinion

We have audited the financial statements of Corero Network Security plc (the 'Parent Company') and its subsidiaries (the 'Group') for the year ended 31 December 2019 which comprise the Consolidated Statement of Comprehensive Income, the Consolidated and Company Statements of Financial Position; the Consolidated Statement of Cash Flows, the Consolidated and Company Statements of Changes in Equity and the Notes to the Financial Statements, including a summary of significant accounting policies.

The financial reporting framework that has been applied in the preparation of the Group financial statements is applicable law and International Financial Reporting Standards ('IFRSs') as adopted by the European Union. The financial reporting framework that has been applied in the preparation of the Parent Company financial statements is applicable law and United Kingdom Accounting Standards, including Financial Reporting Standard 101 Reduced Disclosure Framework (United Kingdom Generally Accepted Accounting Practice).

In our opinion:

- the financial statements give a true and fair view of the state of the Group's and of the Parent Company's affairs as at 31 December 2019 and of the Group's loss for the year then ended;
- the Group financial statements have been properly prepared in accordance with IFRSs as adopted by the European Union;
- the Parent Company financial statements have been properly prepared in accordance with United Kingdom Generally Accepted Accounting Practice; and
- the financial statements have been prepared in accordance with the requirements of the Companies Act 2006.

Basis for opinion

We conducted our audit in accordance with International Standards on Auditing (UK) ('ISAs' (UK)) and applicable law. Our responsibilities under those standards are further described in the Auditor's responsibilities for the audit of the financial statements section of our report. We are independent of the Group and the Parent Company in accordance with the ethical requirements that are relevant to our audit of the financial statements in the UK, including the FRC's Ethical Standard as applied to listed entities, and we have fulfilled our other ethical responsibilities in accordance with these requirements. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Material uncertainty related to going concern

We draw attention to note 2.2 to the financial statements which states that the ability of the Group and Parent Company to continue as a going concern is reliant on the continued availability of its bank loan, the terms of which require compliance with certain covenants. Failure to achieve revenue and cashflow projections may adversely impact the achievability of the bank loan covenants which could result in the bank calling in the loan. This would require the Company to raise additional funding, with no guarantee such funding would be secured.

As stated in note 2.2, these events and conditions indicate that a material uncertainty exists that may cast significant doubt on the Group and Parent Company's ability to continue as a going concern. Our opinion is not modified in respect of this matter.

Given the conditions and uncertainties noted above, we considered going concern to be a key audit matter. We have performed the following work as part of our audit:

- we reviewed the bank loan documents to understand the terms and covenants which the Group and Parent Company is required to comply with, comparing these to the Group's forecasts;
- we recalculated management's covenant compliance calculations for the period under audit and using the Directors' forecasts for a period of at least 12 months from the date of approval of the financial statements, and compared them to the covenants in place for each period;
- we obtained confirmations from the lending bank in relation to covenant requirements and compliance during 2019 and to the date of our report; and
- we challenged the forecasts and sensitivity analysis used by the Directors to assess the Group's and Parent Company's ability to meet its financial obligations as they fall due for a period of at least 12 months from the date of approval of the financial statements, by examining post year end order values compared to forecast financial information and by comparing previous forecast financial performance to subsequent actual results. We challenged the Directors' assessment of the impact of the Covid-19 pandemic.

Key audit matters

Key audit matters are those matters that, in our professional judgement, were of most significance in our audit of the financial statements of the current period and include the most significant assessed risks of material misstatement (whether or not due to fraud) we identified, including those which had the greatest effect on: the overall audit strategy, the allocation of resources in the audit; and directing the efforts of the engagement team. These matters were addressed in the context of our audit of the financial statements as a whole, and in forming our opinion thereon, and we do not provide a separate opinion on these matters. In addition to the matter referred to in the Material uncertainty related to going concern section above, the following matters were identified:

Key Audit matter	How we addressed the matter in our audit
Revenue recognition See accounting policy at note 2.5, the key accounting estimate at note 3.2 and note 4. The Group generates revenue primarily from the sale of hardware and associated software and related maintenance and support contracts. It does this directly through arrangements with end-users (either through the sale of hardware and a software licence or by selling the software as a service) as well as to distributors. The sales of licences may be on a perpetual or a fixed term basis. We considered there to be a significant audit risk arising from the allocation of the value of the transaction between the multiple elements or deliverables included in the sale as well as the timing of revenue recognition with regard to proper deferral of maintenance and support revenues and cut off around the year end.	We assessed the appropriateness of the revenue recognition policy in accordance with applicable accounting standards and management's related accounting treatments. We gained an understanding of the detail of the Group's methodology in determining the fair value of the different deliverables in multiple element arrangements as set out in note 2.5 and examined management's approach and resulting fair value measurements, to check that it provided a suitable basis on which to recognise revenues. We selected a sample of contracts for testing covering the Group's different sales models and assessed whether the revenue recognised was calculated in accordance with the Group's accounting policy and in the correct period. We also tested the accuracy of the deferred income balance and tested a sample of transactions around the year end to check that they were recorded in the correct period. Key observations: We are satisfied through the testing performed that revenue and the related deferred income balance has been appropriately recognised.
Goodwill and intangible asset impairment review See accounting policy at note 2.12 and note 8. In accordance with applicable accounting standards, goodwill is tested for impairment annually and other non-current tangible assets with finite lives are tested for impairment whenever an indicator of impairment arises. Management performed an impairment review over its sole cash generating unit ('CGU') - Corero Network Security ('CNS') - as at 31 December 2019 using a discounted cash flow model to calculate fair value less costs to sell. The impairment review necessitates significant management judgement over the timing and degree of certainty attaching to forecast net cash flows and the rate at which those future cash flows should be discounted to present value. Certain key assumptions and data points are required to be disclosed along with sensitivity calculations where reasonably possible changes in key assumptions could give rise to an impairment. The accurate disclosure of such information formed part of the risk we assessed as being present.	Our work on the impairment review prepared by management had a dual focus: firstly, to check that the model was mechanically accurate and prepared in accordance with the requirements of applicable accounting standards and secondly, to check that the assumptions regarding future cash flows and the rate at which they had been discounted were appropriate to the Group's circumstances. We used our internal valuations experts and tax specialists in order to assist with our interrogation of the model and access the appropriateness of the discount rate, and to support our assessment of the treatment of future tax savings arising from available losses. This work also included comparison to industry data, historic trading, and macro-economic factors. Our audit procedures relating to the review of forecst operating cash flows included agreeing the existence of these to selected post year end sales and gaining an understanding of company internal sales initiatives which are expected to drive growth in 2020, as well as a comparison of previous forecast to actual outcomes. We checked that no additional impairment indicators in respect of that no additional impairment indicators in respect of development costs, intangible assets and property, plant and equipment were present. We also considered the appropriateness of the disclosures made in the financial statements with reference to the requirements of applicable accounting standards. Key observations: Based on the procedures we performed we consider the carrying value of goodwill and intangible assets to be reasonable. We reviewed the disclosures in note 8 and are satisfied that they are appropriate.

INDEPENDENT AUDITOR'S REPORT continued

to the members of Corero Network Security plc

Our application of materiality

We apply the concept of materiality both in planning and performing our audit, and in evaluating the effect of misstatements. For planning, we consider materiality to be the magnitude by which misstatements, including omissions, could influence the economic decisions of reasonable users that are taken on the basis of the financial statements. In order to reduce to an appropriately low level the probability that any misstatements exceed materiality, we use a lower materiality level, performance materiality, to determine the extent of testing needed. Misstatements below these levels will not necessarily be evaluated as immaterial as we also take account of the nature of identified misstatements, and the particular circumstances of their occurrence, when evaluating their effect on the financial statements as a whole.

Level of materiality applied and rationale

We determined that using aggregate operating expenses and cost of sales as a benchmark is, at the current time, still the most appropriate measure of the users of the financial statements for assessing the Group's scale of operations and level of activity. This is consistent with the prior year. Using this benchmark, we set materiality at $318,000, being 2% of aggregate operating expenses and cost of sales (2018: $297,000).

Materiality in respect of the audit of the Parent Company has been set at $159,000 (2018: $148,500) based on 50% of Group materiality.

Performance materiality was set at 75% (2018: 75%) of materiality for both the Group and Parent Company audits. In setting the level of performance materiality we considered a number of factors including the expected total value of known and likely misstatements (based on past experience and other factors) and management's attitude towards proposed adjustments.

Component materiality

We set materiality for the Corero Network Security, Inc. component of the Group based on 90% (2018: 80%) of Group materiality as it makes up the majority of the Group's external revenue generating activities. UK components were audited to a lower materiality of between 5% and 30% (2018: between 5% and 25%) of Group materiality. In the audit of each component, we further applied a performance materiality level of 75% of the component materiality level to our testing to ensure that the risk of errors exceeding component materiality was appropriately mitigated.

Agreement with the Audit Committee

We agreed with the Audit Committee that we would report to the Committee all Group audit differences individually in excess of $15,900 (2018: $14,850) and, in our audit of the Parent Company, those in excess of $7,950 (2018: $7,500). We also agreed to report differences below this threshold that, in our view, warranted reporting on qualitative grounds.

An overview of the scope of our audit

Our Group audit was scoped by obtaining an understanding of the Group and its environment, including the Group's system of internal control, and assessing the risks of material misstatement in the financial statements at the Group level.

We obtained an understanding of the entity-level controls of the Group as a whole which assisted us in identifying and assessing risks of material misstatement due to fraud or error, as well as assisting us in determining the most appropriate audit strategy.

A full scope audit was performed for each component included in the consolidation. All audit work was undertaken by the Group audit team. There were no non-significant components.

Other information

The Directors are responsible for the other information. The other information comprises the information included in the Annual Report and Accounts, other than the financial statements and our auditor's report thereon. Our opinion on the financial statements does not cover the other information and, except to the extent otherwise explicitly stated in our report, we do not express any form of assurance conclusion thereon.

In connection with our audit of the financial statements, our responsibility is to read the other information and, in doing so, consider whether the other information is materially inconsistent with the financial statements or our knowledge obtained in the audit or otherwise appears to be materially misstated. If we identify such material inconsistencies or apparent material misstatements, we are required to determine whether there is a material misstatement in the financial statements or a material misstatement of the other information. If, based on the work we have performed, we conclude that there is a material misstatement of this other information, we are required to report that fact. We have nothing to report in this regard.

Opinions on other matters prescribed by the Companies Act 2006

In our opinion, based on the work undertaken in the course of the audit:

- the information given in the Strategic Report and the Directors' Report for the financial year for which the financial statements are prepared is consistent with the financial statements; and
- the Strategic Report and the Directors' Report have been prepared in accordance with applicable legal requirements.

Matters on which we are required to report by exception

In the light of the knowledge and understanding of the Group and the Parent Company and its environment obtained in the course of the audit, we have not identified material misstatements in the Strategic Report or the Directors' Report.

We have nothing to report in respect of the following matters in relation to which the Companies Act 2006 requires us to report to you if, in our opinion:

- adequate accounting records have not been kept by the Parent Company, or returns adequate for our audit have not been received from branches not visited by us; or
- the Parent Company financial statements are not in agreement with the accounting records and returns; or
- certain disclosures of Directors' remuneration specified by law are not made; or
- we have not received all the information and explanations we require for our audit.

Responsibilities of Directors

As explained more fully in the statement of Directors' responsibilities set out on page 43, the Directors are responsible for the preparation of the financial statements and for being satisfied that they give a true and fair view, and for such internal control as the Directors determine is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, the Directors are responsible for assessing the Group's and the Parent Company's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless the Directors either intend to liquidate the Group or the Parent Company or to cease operations, or have no realistic alternative but to do so.

Auditor's responsibilities for the audit of the financial statements

Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with ISAs (UK) will always detect a material misstatement when it exists.

Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these financial statements.

A further description of our responsibilities for the audit of the financial statements is located on the Financial Reporting Council's website: www.frc.org.uk/auditorsresponsibilities. This description forms part of our auditor's report.

Use of our report

This report is made solely to the Parent Company's members, as a body, in accordance with Chapter 3 of Part 16 of the Companies Act 2006. Our audit work has been undertaken so that we might state to the Parent Company's members those matters we are required to state to them in an auditor's report and for no other purpose. To the fullest extent permitted by law, we do not accept or assume responsibility to anyone other than the Parent Company and the Parent Company's members as a body, for our audit work, for this report, or for the opinions we have formed.

Julian Frost BDO LLP
(Senior Statutory Auditor)
For and on behalf of BDO LLP, Statutory Auditor
London
United Kingdom
3 April 2020

BDO LLP is a limited liability partnership registered in England and Wales (with registered number OC305127).

CONSOLIDATED STATEMENT OF COMPREHENSIVE INCOME

for the year ended 31 December 2019

	Note	Total 2019 $'000	Total 2018 $'000
Revenue	4	9,714	9,951
Cost of sales		(1,842)	(2,188)
Gross profit		7,872	7,763
Operating expenses before highlighted items		(11,032)	(9,427)
Depreciation and amortisation of intangible assets	9,10,11	(3,041)	(3,300)
Operating expenses		(14,073)	(12,727)
Operating loss		(6,201)	(4,964)
Finance income		15	9
Finance costs	5	(375)	(268)
Loss before taxation		(6,561)	(5,223)
Taxation	6	-	-
Loss for the year		(6,561)	(5,223)
Other comprehensive expense			
Items that will or may be reclassified to profit and loss:			
Difference on translation of UK functional currency entities		429	(711)
Total comprehensive expense for the year		(6,132)	(5,934)
Total loss for the year attributable to:			
Equity holders of the Parent		(6,561)	(5,223)
Total		(6,561)	(5,223)
Total comprehensive expense for the year attributable to:			
Equity holders of the Parent		(6,132)	(5,934)
Total		(6,132)	(5,934)

		2019 Cents	2018 Cents
Basic and diluted loss per share			
Basic and diluted loss per share	7	(1.6)	(1.4)

The notes on pages 54 to 84 form part of these financial statements.

CONSOLIDATED STATEMENT OF FINANCIAL POSITION

as at 31 December 2019

	Note	2019 $'000	2018 $'000
Assets			
Non-current assets			
Goodwill	8	8,991	8,991
Acquired intangible assets	9	7	14
Capitalised development expenditure	10	5,169	6,447
Property, plant and equipment	11	1,009	611
Trade and other receivables	14	307	227
		15,483	16,290
Current assets			
Inventories	13	65	125
Trade and other receivables	14	2,572	2,977
Cash and cash equivalents		8,321	8,026
		10,956	11,128
Liabilities			
Current liabilities			
Trade and other payables	17	(2,008)	(1,799)
Lease liabilities	17	(112)	-
Borrowings	17	(1,149)	(849)
Deferred income	19	(2,800)	(2,034)
		(6,069)	(4,682)
Net current assets		4,887	6,446
Non-current liabilities			
Trade and other payables	17	(139)	(134)
Lease liabilities	17	(257)	-
Borrowings	17	(1,788)	(2,757)
Deferred income	19	(1,096)	(846)
		(3,280)	(3,737)
Net assets		17,090	18,999
Total equity attributable to owners of the Parent			
Ordinary share capital	21	6,914	5,740
Capital redemption reserve		7,051	7,051
Share premium	22	82,122	79,338
Share options reserve		609	344
Translation reserve		(1,600)	(2,029)
Retained earnings		(78,006)	(71,445)
Total equity		17,090	18,999

These financial statements were approved by the Board of Directors on 3 April 2020 and signed on their behalf.

Andrew Miller
Director

The notes on pages 54 to 84 form part of these financial statements.

COMPANY STATEMENT OF FINANCIAL POSITION

as at 31 December 2019

	Note	2019 $'000	2018 $'000
Assets			
Non-current assets			
Investments in subsidiaries	12	20,772	25,118
Trade and other receivables	14	74	72
		20,846	25,190
Current assets			
Trade and other receivables	14	8	6
Cash and cash equivalents		7,636	7,294
		7,644	7,300
Liabilities			
Current liabilities			
Trade and other payables	15	(5)	-
Borrowings	17	(1,149)	(849)
		(1,154)	(849)
Net current assets		6,490	6,451
Non-current liabilities			
Trade and other payables	15	(139)	(134)
Borrowings	17	(1,788)	(2,757)
		(1,927)	(2,891)
Net assets		25,409	28,750
Total equity attributable to owners of the Parent			
Ordinary share capital	21	6,914	5,740
Capital redemption reserve		7,051	7,051
Share premium	22	82,122	79,338
Share options reserve		609	344
Translation reserve		(10,724)	(12,073)
Retained earnings		(60,563)	(51,650)
Total equity		25,409	28,750

The Company financial statements were prepared in accordance with Financial Reporting Standard 101 Reduced Disclosure Framework. The Company has taken advantage of the following disclosure exemptions:

The requirements of IAS 7 Statement of Cash Flows, IFRS 7 Financial Instruments: Disclosures and IAS 24 Related Party Disclosures.

The Company has taken advantage of section 408 of the Companies Act 2006 and has not included an income statement in these financial statements. The Parent Company's loss for the year was $8.9 million (2018: loss $3.5 million).

These financial statements were approved by the Board of Directors on 3 April 2020 and signed on their behalf.

Andrew Miller
Director

The notes on pages 54 to 84 form part of these financial statements.

CONSOLIDATED STATEMENT OF CHANGES IN EQUITY

for the year ended 31 December 2019

	Share capital $'000	Capital redemption reserve $'000	Share premium account $'000	Share options reserve $'000	Translation reserve $'000	Retained earnings $'000	Total attributable to equity holders of the parent $'000
1 January 2018	4,556	7,051	73,239	322	(1,318)	(66,222)	17,628
Loss for the year	-	-	-	-	-	(5,223)	(5,223)
Other comprehensive loss	-	-	-	-	(711)	-	(711)
Total comprehensive expense for the year	-	-	-	-	(711)	(5,223)	(5,934)
Contributions by and distributions to owners							
Share-based payments	-	-	-	22	-	-	22
Issue of share capital	1,184	-	6,099	-	-	-	7,283
Total contributions by and distributions to owners	1,184	-	6,099	22	-	-	7,305
31 December 2018 and 1 January 2019	5,740	7,051	79,338	344	(2,029)	(71,445)	18,999
Loss for the year	-	-	-	-	-	(6,561)	(6,561)
Other comprehensive income	-	-	-	-	429	-	429
Total comprehensive expense for the year	-	-	-	-	429	(6,561)	(6,132)
Contributions by and distributions to owners							
Share-based payments	-	-	-	265	-	-	265
Issue of share capital	1,174	-	2,784	-	-	-	3,958
Total contributions by and distributions to owners	1,174	-	2,784	265	-	-	4,223
31 December 2019	6,914	7,051	82,122	609	(1,600)	(78,006)	17,090

The share capital comprises the nominal values of all shares issued.

The capital redemption reserve comprises the amount transferred from deferred shares on redemption of the deferred shares.

The share premium account comprises the amounts subscribed for share capital in excess of the nominal value, net of issuance costs.

The share options reserve represents the cost to the Group of share options.

The translation reserve arises on retranslating the net assets of UK operations into US dollars.

The retained earnings are all other net gains and losses and transactions with owners not recognised elsewhere.

The notes on pages 54 to 84 form part of these financial statements.

CONSOLIDATED STATEMENT OF CASH FLOWS

for the year ended 31 December 2019

		Group	
Cash flows from operating activities	**Note**	**2019 $'000**	**2018 $'000**
Loss for the year		(6,561)	(5,223)
Adjustments for non-cash movements:			
Amortisation of acquired intangible assets	9	13	23
Amortisation of capitalised development expenditure	10	2,638	2,918
Depreciation	11	515	483
Finance income		(15)	(9)
Finance expense	5	375	268
Taxation	6	-	-
Share-based payment charge	26	268	22
Decrease in inventories and sales evaluation units		153	100
Decrease/(increase) in trade and other receivables		937	(701)
Increase in payables		1,126	293
Net cash used in operating activities		(551)	(1,826)
Cash flows from investing activities			
Purchase of intangible assets	9	(6)	-
Capitalised development expenditure	10	(1,360)	(1,701)
Purchase of property, plant and equipment	11	(579)	(459)
Net cash used in investing activities		(1,945)	(2,160)
Cash flows from financing activities			
Net proceeds from issue of ordinary share capital after costs of $149,000 (2018: $232,000)		3,958	7,283
Net proceeds from borrowings after costs of $143,000		-	3,938
Finance income		15	9
Finance expense		(296)	(222)
Lease payments		(74)	-
Loan capital repayments		(856)	-
Net cash generated from financing activities		2,747	11,008
Effects of exchange rates on cash and cash equivalents		44	(361)
Net increase in cash and cash equivalents		295	6,661
Cash and cash equivalents at 1 January		8,026	1,365
Cash and cash equivalents at 31 December		8,321	8,026

The notes on pages 54 to 84 form part of these financial statements.

CONSOLIDATED STATEMENT OF CHANGES IN EQUITY

for the year ended 31 December 2019

	Share capital $'000	Capital redemption reserve $'000	Share premium account $'000	Share options reserve $'000	Translation reserve $'000	Retained earnings $'000	Total attributable to equity holders of the parent $'000
1 January 2018	4,556	7,051	73,239	322	(1,318)	(66,222)	17,628
Loss for the year	-	-	-	-	-	(5,223)	(5,223)
Other comprehensive loss	-	-	-	-	(711)	-	(711)
Total comprehensive expense for the year	-	-	-	-	(711)	(5,223)	(5,934)
Contributions by and distributions to owners							
Share-based payments	-	-	-	22	-	-	22
Issue of share capital	1,184	-	6,099	-	-	-	7,283
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31 December 2018 and 1 January 2019	5,740	7,051	79,338	344	(2,029)	(71,445)	18,999
Loss for the year	-	-	-	-	-	(6,561)	(6,561)
Other comprehensive income	-	-	-	-	429	-	429
Total comprehensive expense for the year	-	-	-	-	429	(6,561)	(6,132)
Contributions by and distributions to owners							
Share-based payments	-	-	-	265	-	-	265
Issue of share capital	1,174	-	2,784	-	-	-	3,958
Total contributions by and distributions to owners	1,174	-	2,784	265	-	-	4,223
31 December 2019	6,914	7,051	82,122	609	(1,600)	(78,006)	17,090

The share capital comprises the nominal values of all shares issued.

The capital redemption reserve comprises the amount transferred from deferred shares on redemption of the deferred shares.

The share premium account comprises the amounts subscribed for share capital in excess of the nominal value, net of issuance costs.

The share options reserve represents the cost to the Group of share options.

The translation reserve arises on retranslating the net assets of UK operations into US dollars.

The retained earnings are all other net gains and losses and transactions with owners not recognised elsewhere.

The notes on pages 54 to 84 form part of these financial statements.

CONSOLIDATED STATEMENT OF CASH FLOWS

for the year ended 31 December 2019

	Note	Group 2019 $'000	Group 2018 $'000
Cash flows from operating activities			
Loss for the year		(6,561)	(5,223)
Adjustments for non-cash movements:			
Amortisation of acquired intangible assets	9	13	23
Amortisation of capitalised development expenditure	10	2,638	2,918
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Increase in payables		1,126	293
Net cash used in operating activities		(551)	(1,826)
Cash flows from investing activities			
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Purchase of property, plant and equipment	11	(579)	(459)
Net cash used in investing activities		(1,945)	(2,160)
Cash flows from financing activities			
Net proceeds from issue of ordinary share capital after costs of $149,000 (2018: $232,000)		3,958	7,283
Net proceeds from borrowings after costs of $143,000		-	3,938
Finance income		15	9
Finance expense		(296)	(222)
Lease payments		(74)	-
Loan capital repayments		(856)	-
Net cash generated from financing activities		2,747	11,008
Effects of exchange rates on cash and cash equivalents		44	(361)
Net increase in cash and cash equivalents		295	6,661
Cash and cash equivalents at 1 January		8,026	1,365
Cash and cash equivalents at 31 December		8,321	8,026

The notes on pages 54 to 84 form part of these financial statements.

COMPANY STATEMENT OF CHANGES IN EQUITY

for the year ended 31 December 2019

	Share capital $'000	Capital redemption reserve $'000	Share premium account $'000	Share options reserve $'000	Translation reserve $'000	Retained earnings $'000	Total equity $'000
1 January 2018	4,556	7,051	73,239	322	(10,019)	(48,156)	26,993
Loss for the year	-	-	-	-	-	(3,494)	(3,494)
Other comprehensive loss	-	-	-	-	(2,054)	-	(2,054)
Total comprehensive expense for the year	-	-	-	-	(2,054)	(3,494)	(5,548)
Contributions by and distributions to owners							
Share-based payments	-	-	-	22	-	-	22
Issue of share capital	1,184	-	6,099	-	-	-	7,283
Total contributions by and distributions to owners	1,184	-	6,099	22	-	-	7,305
1 January 2019	5,740	7,051	79,338	344	(12,073)	(51,650)	28,750
Loss for the year	-	-	-	-	-	(8,913)	(8,913)
Other comprehensive income	-	-	-	-	1,349	-	1,349
Total comprehensive expense for the year	-	-	-	-	1,349	(8,913)	(7,564)
Contributions by and distributions to owners							
Share-based payments	-	-	-	265	-	-	265
Issue of share capital	1,174	-	2,784	-	-	-	3,958
Total contributions by and distributions to owners	1,174	-	2,784	265	-	-	4,223
31 December 2019	6,914	7,051	82,122	609	(10,724)	(60,563)	25,409

The notes on pages 54 to 84 form part of these financial statements.

NOTES TO THE FINANCIAL STATEMENTS

1. General information

Presentation currency

These consolidated financial statements are presented in US dollars ('$') which represents the presentation currency of the Group.

The average $-GBP sterling ('GBP') exchange rate used for the conversion of the Statement of Comprehensive Income for the 12 months ended 31 December 2019 was 1.28 (2018: 1.33). The closing $-GBP exchange rate used for the conversion of the Group's assets and liabilities at 31 December 2019 was 1.33 (2018: 1.28).

Corero Network Security plc is a public limited company incorporated in the United Kingdom under the Companies Act 2006 and registered in England and Wales. The functional currency of the Company is GBP.

2. Significant accounting policies

2.1 Basis of preparation

The Group financial statements have been prepared in accordance with EU endorsed International Financial Reporting Standards ('IFRS'), International Financial Reporting Interpretations Committee ('IFRIC') interpretations and those parts of the Companies Act 2006 applicable to companies reporting under IFRS. The Parent Company financial statements have been prepared in accordance with FRS 101 (Financial Reporting Standard 101) 'Reduced Disclosure Framework'.

The new IFRS 16 Leases standard, which give rise to a change in the Group's accounting policies, has been adopted in the annual financial statements for the year ended 31 December 2019.

2.2 Going Concern

The financial statements have been prepared on a going concern basis.

The Directors have prepared detailed income statement, balance sheet and cash flow projections for the period to 31 December 2021. The cash flow projections have been subjected to sensitivity analysis at the revenue, cost and combined revenue and cost levels. The cash flow projections show that the Group and Company will maintain a positive cash balance until at least December 2021. In addition, the projections and sensitivity analyses confirm that the bank loan covenants will be met for a period of at least 12 months from the date of approval of these financial statements.

On this basis, the Directors have therefore concluded that it is appropriate to prepare the financial statements on a going concern basis.

However, the ability of the Company and Group to achieve the future profit and cash flow projections cannot be predicted with certainty. Additionally the potential impact of the COVID-19 global pandemic on the business of the Company and Group is uncertain.

Failure of the Company and the Group to meet these projections and deliver revenue growth may adversely impact the achievability of the bank loan covenants which may result in the bank loan being required to be repaid before the maturity date if the revenue and cash consumption covenants are not met and cannot be renegotiated. This would adversely impact the Company and the Group's working capital position and would require the Company to raise additional funding, with no guarantee such funding would be secured.

These circumstances indicate a material uncertainty that may cast significant doubt on the Company and the Group's ability to continue as a going concern for the foreseeable future. However, although the Directors are confident, based on the forecast assumptions and information available at the present time, that the Company and Group will achieve the forecasts, they consider if it becomes necessary that the covenants could be renegotiated or further funds raised, and have therefore concluded that it is appropriate to prepare the financial statements on a going concern basis. The financial statements do not include the adjustments that would result if the Group and Company were unable to continue as a going concern. Further details are included within notes 2 and 3 to the financial statements.

2.3 Basis of consolidation

The consolidated financial statements incorporate the results, assets, liabilities and cash flows of the Company and each of its subsidiaries for the financial year ended 31 December 2019.

Subsidiaries are entities controlled by the Group. Control is deemed to exist when the Group has all of the following elements: a) power over the subsidiary, b) exposure or rights to variable returns from that subsidiary, c) ability to use its power to affect the amount of the return from the subsidiary. The results, assets, liabilities and cash flows of subsidiaries are included in the consolidated financial statements from the date control commences until the date that control ceases.

Where necessary, adjustments are made to the financial statements of subsidiaries to bring the accounting policies used into line with those used by the Group.

Intra-group balances and transactions are eliminated on consolidation.

COMPANY STATEMENT OF CHANGES IN EQUITY

for the year ended 31 December 2019

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Total comprehensive expense for the year	-	-	-	-	(2,054)	(3,494)	(5,548)
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On this basis, the Directors have therefore concluded that it is appropriate to prepare the financial statements on a going concern basis.

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Failure of the Company and the Group to meet these projections and deliver revenue growth may adversely impact the achievability of the bank loan covenants which may result in the bank loan being required to be repaid before the maturity date if the revenue and cash consumption covenants are not met and cannot be renegotiated. This would adversely impact the Company and the Group's working capital position and would require the Company to raise additional funding, with no guarantee such funding would be secured.

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Where necessary, adjustments are made to the financial statements of subsidiaries to bring the accounting policies used into line with those used by the Group.

Intra-group balances and transactions are eliminated on consolidation.

2.4 Business combinations

The acquisition method is used to account for all acquisitions. The cost of an acquisition is measured at the fair values, on the date of acquisition, of assets given, liabilities incurred or assumed, and equity instruments issued.

At the date of acquisition, the identifiable assets and liabilities and contingent liabilities of a subsidiary are measured at their fair values. Any excess of the cost of acquisition over the fair values of the identifiable net assets acquired is recognised as goodwill.

2.5 Revenue

The Group's revenue is derived from the following products and services:

- hardware and perpetual software licenses;
- support services for a defined term;
- installation and training services;
- DDoS protection as-a-service ('DDPaaS') for a defined term;
- SecureWatch Managed Service (enhanced security monitoring services) for a defined term; and
- software subscription licenses for a defined term.

The element of DDPaaS revenues pertaining to the lease of as-a-service assets is included in reported revenues and is recognised on a straight line basis over the term of the contract.

Performance obligations, timing of revenue recognition and revenue recognition

Revenue is recognised when control of the goods (hardware and software) transfer to the customer and services are delivered. Goods are shipped free on board ('FOB') from Corero, or Corero's contract manufacturer, to the customer. The point of transfer of control for hardware is at the point of FOB shipment to the customer and for software at the point of electronic transfer to the customer.

Revenue recognised on transfer of control of hardware and software products	Hardware, perpetual software licenses and software subscription licenses
Revenue recognised over-time (over the term of the contract)	Support, DDPaaS and SecureWatch Managed services
Revenue recognised once the service has been delivered	Installation and training services

Determining the transaction price

The contract price is determined by reference to the Corero Sales Quotation or DDPaaS Agreement and is a fixed price. Certain DDPaaS contracts have an element of the transaction value or all of the transaction value determined by reference to a share of the customers' revenue generated from the Corero solution ('Revenue Share'). This Revenue Share revenue is recognised when the Revenue Share is determined.

Corero does not have any other variable consideration payable by the customer and does not pay any consideration to the customer. There is no provision for purchase price adjustments, right of return or price concessions.

Allocating amounts to performance obligations

For contracts containing only a single performance obligation (annual support services, 'DDPaaS' and SecureWatch Managed Service) there is no requirement to make an allocation of the contract price. For contracts containing multiple products, the transaction price is allocated to the separate performance obligations based on relative stand-alone selling prices ('SSP'). SSP equates to the historic best estimated selling price methodology previously applied consistently by Corero in prior year financial statements. The SSP is determined using defined price lists and historic customer discount rates.

NOTES TO THE FINANCIAL STATEMENTS continued

2. Significant accounting policies continued

2.5 Revenue continued

Incremental costs of obtaining a contract

Sales commission paid to Corero sales employees is an incremental cost of obtaining a contract. Sales commission relating to the support revenue from a new sales contract is recorded in prepayments and amortised over five years. Corero has considered the requirements of the IFRS 15 standard with regards to the amortisation period which requires amortisation on a systematic basis that is consistent with the transfer to the customer of the goods or services to which the asset relates. The expectation, supported by historic evidence, is that customers will generally renew their support contracts for more than three years with the additional expectation of follow-on hardware and software (and associated services) business from a significant number of existing customers. Based on this, Corero has assessed that a reasonable period for capitalised sales commission to be amortised is five years. Periodic customer reviews will be undertaken to ascertain if there is any evidence that the value of the customer relationship has been negatively impacted, in which case the prepayment will be appropriately written down. Applying the practical expedient, Corero recognises the incremental costs of obtaining contracts as an expense when incurred if the amortisation period of the prepayment that Corero otherwise would have recognised is one year or less.

Fulfilment costs

Corero's principal fulfilment costs relate to the costs of the Corero customer support team which delivers the customer support services, DDPaaS services and the SecureWatch Managed services. These costs are not separately allocated or identifiable against specific customers. Therefore, these costs are recognised in the period in which they are incurred.

Contract assets and liabilities

Contract assets arise when goods and services have been delivered and invoiced but payment is not yet due. Contract liabilities arise for future delivery of services which have been invoiced and payment is due. Contract liabilities are shown as deferred income in the Statement of Financial Position.

2.6 Government grants

Government grants are recognised at fair value when there is reasonable assurance that the Group will comply with the conditions attaching to them and the grant will be received. Grants related to purchase of assets are treated as deferred income and allocated to the Statement of Comprehensive Income over the useful lives of the related assets while grants related to expenses are netted off against the related item of expenditure in the Statement of Comprehensive Income - Profit and Loss.

2.7 Cost of sales

Cost of sales includes all direct costs associated with revenue generation, including goods directly related to revenue, services delivery, operation costs, DDoS as-a-service depreciation and amounts charged by external third parties for services. Examples of such costs would include third party hardware costs and third party software license costs.

2.8 Foreign currencies

Transactions in foreign currencies are translated at the exchange rate ruling at the date of each transaction. Foreign currency monetary assets and liabilities are retranslated using the exchange rates at the reporting date. Gains and losses arising from changes in exchange rates after the date of the transaction are recognised in profit or loss in the Statement of Comprehensive Income.

Non-monetary assets and liabilities that are measured in terms of historical cost in a foreign currency are translated at the exchange rate at the date of the original transaction.

In the consolidated financial statements, the net assets of the Group's UK operations are translated from GBP into US dollars at the exchange rate at the reporting date. Income and expense items are translated into US dollars at the average exchange rates for the period. The resulting exchange differences are recognised in the translation reserve.

2.9 Intangible assets

Internally generated intangible assets

The Group's internally generated intangible asset relates to its development expenditure.

Development expenditure is capitalised only when it is probable that future economic benefit will result from the project and the following criteria are met:

- the technical feasibility of the product has been ascertained;
- adequate technical, financial and other resources are available to complete and sell or use the intangible asset;
- the Group can demonstrate how the intangible asset will generate future economic benefits and the ability to use or sell the intangible asset can be demonstrated;
- it is the intention of management to complete the intangible asset and use it or sell it; and
- the development costs can be measured reliably.

Expenditure not meeting these criteria is expensed in the Statement of Comprehensive Income - Profit and Loss.

After initial recognition, internally generated intangible assets are carried at cost less accumulated amortisation and any impairment losses. Amortisation is charged once the asset is capable of generating economic benefits.

Acquired intangible assets

Identifiable intangible assets acquired as part of a business combination are initially recognised separately from goodwill, irrespective of whether the assets have been recognised by the acquiree before the business combination. An intangible asset is considered identifiable only if it is separable or if it arises from contractual or other legal rights, regardless of whether those rights are transferable or separable from the entity or from other rights and obligations.

Intangible assets acquired as part of a business combination and recognised by the Group are computer software and customer relationships.

Purchased computer software is carried at cost less accumulated amortisation and any impairment losses.

Customer contracts and the related customer relationships are carried at cost less accumulated amortisation and any impairment losses.

Amortisation

Intangible assets are amortised on a straight line basis to reduce their carrying value to zero over their estimated useful lives. The following useful lives were applied during the year:

- Computer software acquired - three years straight line.
- Capitalised development expenditure - five years straight line.

Amortisation costs are included within operating expenses in the Statement of Comprehensive Income. Methods of amortisation and useful lives are reviewed, and if necessary adjusted, at each reporting date.

2.10 Property, plant and equipment

Depreciation commences when an asset is available for use. Depreciation is calculated so as to write off the cost or value of an asset, net of anticipated disposal proceeds, over the useful life of that asset as follows:

- Leasehold improvements - period of the lease (straight line).
- Right-of-use assets - period of the lease (straight line).
- Computer equipment, evaluation assets and DDoS protection as-a-service assets - three years (straight line).
- Fixtures and fittings - five years (straight line).

NOTES TO THE FINANCIAL STATEMENTS continued

2. Significant accounting policies continued

2.10 Property, plant and equipment continued

Property, plant and equipment is stated at cost less accumulated depreciation and any impairment losses. Cost comprises the purchase cost of property, plant and equipment together with any directly attributable costs. Evaluation assets are used by customers during proof of concept trials. Evaluation assets are stated at cost less accumulated depreciation. When an evaluation asset is retained by a customer as part of a sale, the net book value of the evaluation asset is charged to cost of sales. Depreciation of DDoS protection as-a-service assets is charged to cost of sales.

Subsequent costs are included in an asset carrying value or are recognised as a separate asset when it is probable that future economic benefits associated with the additional expenditure will flow to the Group and the cost of the item can be measured reliably. All other costs are charged to the Statement of Comprehensive Income - Profit and Loss as incurred.

Methods of depreciation, residual values and useful lives are reviewed, and if necessary adjusted, at each balance sheet date.

The gain or loss arising from the disposal or retirement of an item of property, plant and equipment is determined as the difference between the net disposal proceeds and the carrying amount of the item and included in the Statement of Comprehensive Income - Profit and Loss.

2.11 Inventory

Inventory is stated at the lower of cost or net realisable value. Cost is computed using standard cost, which approximates actual cost, on a first-in, first-out basis. Rapid technological change and new product introductions and enhancements could result in excess or obsolete inventory, the value of which may not be recoverable.

To minimise this risk, the Group evaluates inventory levels and expected usage on a periodic basis and records valuation allowances as required.

2.12 Impairment

At each reporting date, the Group assesses whether there is any indication that its assets have been impaired. If any such indication exists, the recoverable amount of the asset is estimated in order to determine the extent of any impairment. If it is not possible to estimate the recoverable amount of the individual asset, the recoverable amount of the cash-generating unit ('CGU') to which the asset belongs is determined.

The recoverable amount of an asset or a CGU is the higher of its fair value less costs to sell and its value in use. The recoverable amount is calculated using the present value of the future cash flows expected to be derived from an asset or CGU. This present value is derived using a cost of capital rate that reflects current market assessments of the time value of money and of the risks specific to the asset for which future cash flow estimates have not been adjusted. If the recoverable amount of an asset is less than its carrying amount, the carrying amount of the asset or CGU is reduced to its recoverable amount. That reduction is recognised as an impairment loss.

An impairment loss relating to assets carried at cost less any accumulated depreciation or amortisation is recognised immediately in the Statement of Comprehensive Income - Profit and Loss.

Goodwill acquired in a business combination is, from the acquisition date, allocated to each of the CGU's or groups of CGU's that are expected to benefit from the synergies of the combination.

Goodwill is tested for impairment at least annually, and whenever there is an indication that the asset may be impaired.

An impairment loss is recognised for CGU's if the recoverable amount of the CGU is less than the carrying amount of the CGU. The impairment loss is allocated to reduce the carrying amount of the assets of the CGU by first reducing the carrying amount of any goodwill allocated to the CGU, and then reducing the carrying amounts of the other assets of the CGU pro rata.

If an impairment loss subsequently reverses, the carrying amount of the asset or CGU is increased to the revised estimate of its recoverable amount but limited to the carrying amount that would have been determined had no impairment loss been recognised in prior years.

A reversal of an impairment loss is recognised in the Statement of Comprehensive Income - Profit and Loss. Impairment losses on goodwill are not subsequently reversed.

2.13 Leases

All leases are accounted for by recognising a right-of-use asset and a lease liability except for:

- leases with a duration of 12 months or less; and
- leases of low value assets.

Lease liabilities are measured at the present value of the contractual payments due to the lessor over the lease term, with the discount rate determined by reference to the rate inherent in the lease unless this is not readily determinable, in which case the Group's incremental borrowing rate on commencement of the lease is used.

On initial recognition, the carrying value of the lease liability also includes:

- amounts expected to be payable under any residual value guarantee;
- the exercise price of any purchase option granted in favour of the Group if it is reasonably certain to assess that option; and
- any penalties payable for terminating the lease, if the term of the lease has been estimated on the basis of termination option being exercised.

Right-of-use assets are initially measured at the amount of the lease liability, reduced for any lease incentives received, and increased for:

- lease payments made at or before commencement of the lease;
- initial direct costs incurred; and
- the amount of any provision recognised where the Group is contractually required to dismantle, remove or restore the lease.

Subsequent to initial measurement, lease liabilities increase as a result of interest charged at a constant rate on the balance outstanding and are reduced for lease payments made. Lease payments are analysed between capital and interest. The interest element is charged to the Statement of Comprehensive Income - Profit and Loss over the period of the lease. The capital element reduces the balance owed to the lessor.

Right-of-use assets are amortised on a straight-line basis over the remaining term of the lease or over the remaining economic life of the asset.

The total rentals payable under leases which are not recognised as a right-of-use asset and a lease liability (an 'operating lease') are charged to the Statement of Comprehensive Income - Profit and Loss on a straight-line basis over the lease term.

Effect of change in Accounting Policy

IFRS 16 - Leases was adopted on 1 January 2019 by the application of the modified retrospective method without restatement of comparative figures.

The Group elected to apply the practical expedient to not reassess whether a contract is or contains a lease at the date of initial application. Contracts entered into before the transition date that were not identified as leases under IAS 17 and IFRIC 4 were not reassessed. The definition of a lease under IFRS 16 was applied only to contracts in effect at 1 January 2019 or entered into or changed on or after 1 January 2019.

IFRS 16 provides for certain optional practical expedients. The Group applied the exemption not to recognise right-of-use assets and liabilities for leases with less than 12 months of lease term remaining as of the date of initial application when applying IFRS 16 to leases previously classified as operating leases under IAS 17.

The Group previously classified leases as operating or finance leases based on its assessment of whether the lease transferred substantially all of the risks and rewards of ownership. Under IFRS 16, the Group recognises right-of-use assets and lease liabilities for most leases. (Other than short-term leases with a lease term of 12 months or less).

NOTES TO THE FINANCIAL STATEMENTS continued

2. Significant accounting policies continued

2.13 Leases continued

On adoption of IFRS 16, the Group recognised a right-of-use asset and lease liability for the Group's Edinburgh property lease. The lease liability measured at the present value of the remaining lease payments, discounted using the Group's incremental borrowing rate of 8.4%, resulting in a $77,000 right-of-use asset and a $77,000 lease liability at 1 January 2019.

The following table reconciles the minimum lease commitments disclosed in the Group's 31 December 2018 annual financial statements to the amount of lease liabilities recognised on 1 January 2019:

	$'000
Minimum operating lease commitment at 31 December 2018	235
Less: short-term leases not recognised under IFRS 16	(144)
Undiscounted lease payments	91
Less: effect of discounting using the incremental borrowing rate as at the date of initial application	(7)
Less lease payments paid in advance	(7)
Lease liability as at 1 January 2019	77

2.14 Investments in subsidiaries

In the Company's separate financial statements, investments in subsidiaries are carried at cost less any impairment provisions.

2.15 Taxation

The tax expense represents the sum of current tax and deferred tax.

Current tax

Current tax is based on taxable profit for the year and is calculated using tax rates enacted or substantively enacted at the reporting date. Taxable profit differs from accounting profit either because items are taxable or deductible in periods different to those in which they are recognised in the financial statements, or because they are never taxable or deductible.

Deferred tax

Deferred tax on temporary differences at the reporting date between the tax bases of assets and liabilities and their carrying amounts for financial reporting purposes is accounted for using the balance sheet liability method.

Using the balance sheet liability method, deferred tax liabilities are recognised in full for all taxable temporary differences and deferred tax assets are recognised to the extent that it is probable that taxable profits will be available against which deductible temporary differences can be utilised. However, if the temporary difference arises from the initial recognition of goodwill or the initial recognition of an asset or liability in a transaction other than a business combination, that at the time of the transaction affects neither accounting nor taxable profit, it is not recognised as deferred tax asset or liability.

Deferred taxation is measured at the tax rates that are expected to apply when the asset is realised, or the liability settled, based on tax rates and laws enacted or substantively enacted at the reporting date.

2.16 Post-retirement benefits

The Group makes contributions in respect of certain employees to defined contribution pension plans under which it is required to pay fixed contributions to group and personal pension funds.

Contributions to the schemes are based on a proportion of the employees' earnings and are charged to the Statement of Comprehensive Income - Profit and Loss when incurred. The Group has no obligation beyond these contributions.

2.17 Financial instruments

The Group classifies financial instruments, or their component parts, on initial recognition as a financial asset, a financial liability or an equity instrument in accordance with the substance of the contractual arrangement.

Financial assets and financial liabilities are recognised in the Group's Statement of Financial Position when the Group becomes party to the contractual provisions of the instrument.

The particular recognition and measurement methods adopted for the Group's financial instruments are disclosed below:

Trade and other receivables

Trade and other receivables are stated at their fair value at time of initial recognition, reflecting, where material, the time value of money. A provision for impairment of trade receivables is established when there is evidence that the Group will not be able to collect all amounts due. The simplified approach is used for assessing the expected credit loss on trade receivables, requiring the lifetime expected credit loss to be recorded as the provision for impairment.

An impairment provision is recorded against the loan note instrument between the Company and Corero Network Security, Inc. based on calculating the risk adjusted carrying value of the loan to take account of the credit loss which is expected to arise over the period until the cash is realised. The amount of the provision is based on whether there has been a significant increase in credit risk since the initial recognition of the loan. In situations where the credit risk has not increased significantly and the loan amount is expected to be recovered, the expected credit loss is limited to the effect of discounting the loan over the period until repayment is realised at the effective interest rate.

Cash and cash equivalents

Cash and cash equivalents include cash in hand and deposits on call with banks.

Trade and other payables

Trade and other payables are not interest bearing and are stated at their fair value at time of initial recognition. Thereafter they are accounted for at amortised cost.

Debt obligations

Debt obligations include interest bearing bank borrowings which are stated at their fair value less transaction costs at time of initial recognition. Debt obligations are subsequently measured at amortised cost.

2.18 Equity instruments

An equity instrument is any contract that evidences a residual interest in the assets of the Company after deducting all its liabilities. Equity instruments issued by the Company are recorded at the proceeds received, net of directly attributable issue costs.

2.19 Employee share option schemes

The Group operates an equity-settled share-based compensation plan. The fair value of the employees' services received in exchange for the grant of share options is measured at grant date and recognised as an expense on a straight line basis over the vesting period, based on the Group's estimate of shares that will eventually vest. Fair value is determined by reference to the Black-Scholes option pricing model. If an option grant is cancelled the previously recorded expense is credited to the Statement of Comprehensive Income - Profit and Loss.

At each reporting date, the Group revises its estimate of the number of options that are expected to become exercisable.

When share options are exercised, the proceeds received, net of any transaction costs, are credited to share capital (nominal value) and share premium.

2.20 Standards and Interpretations not yet effective

There are a number of standards, amendments to standards, and interpretations which have been issued that are effective in future accounting periods that the Group has decided not to adopt early as they will not have a significant impact on the presentation of the Group financial statements.

NOTES TO THE FINANCIAL STATEMENTS continued

3. Critical accounting judgements and key sources of estimation uncertainty

3.1 Critical judgements in applying the Group's accounting policies

In the process of applying the Group accounting policies, the following judgements have had a significant effect on the amounts recognised in the financial statements:

Internally generated research and development costs

Management monitors progress of internal research and development projects. Judgement is required in distinguishing the research phase from the development phase. Development costs are recognised as an asset when all criteria are met and a project has passed the feasibility phase, whereas research costs are expensed as incurred. Management monitors whether the recognition requirements for development costs continue to be met. This is necessary as the economic success of any product development is uncertain.

3.2 Key accounting estimates and assumptions

Key assumptions concerning the future and other key sources of estimation uncertainty that have a significant risk of causing a material adjustment to the carrying amounts of assets and liabilities within the next financial year are as follows:

Impairment of intangible assets and property, plant and equipment

The Group tests goodwill at least annually for impairment, and whenever there is an indication that the asset may be impaired. All other intangible assets and property, plant and equipment are tested for impairment when indicators of impairment exist. Impairment is determined with reference to the higher of fair value less costs to sell and value in use. Fair value less costs to sell is estimated using discounted future cash flows. Significant assumptions are made in estimating future cash flows about future events including future market conditions, future growth rates and appropriate discount rates. Changes in these assumptions could affect the outcome of impairment reviews. Details of the main assumptions used in the assessment of the carrying value of the Group's CGU are set out in note 8.

Impairment of investments (applies to the Company financial statements only)

The Directors have reviewed the cost of investments in subsidiaries of the Company with reference to current and future trading conditions. The investment in subsidiaries has been reviewed with reference to a valuation based on a discounted free cash flow, in conjunction with the goodwill impairment review, which the Directors consider to be an appropriate valuation methodology.

Going concern

The Directors have reviewed the future profit and cash flow projections in conjunction with the current economic climate in order to express an opinion on the adequacy of working capital and the ability to continue as a going concern for the foreseeable future. The methodology contained in the projections is detailed in the note 2.2.

Standalone Selling Price - Revenue recognition

On a quarterly basis the Group analyses the selling prices for each deal compared to the current Standalone Selling Price ('SSP'). This analysis includes grouping similar deals based on qualitative factors such as customer profile, size, and region, together with a quantitative comparison to the then current SSP. SSP fair value prices are adjusted for future quarters if management identifies a pattern of variances of greater than 10% between actual selling prices and the then current SSP.

4. Segment reporting

Business segments

The Group is managed according to one business unit, Corero Network Security, which makes up the Group's reportable operating segment. This business unit forms the basis on which the Group reports its primary segment information to the Board, which management consider to be the Chief Operating Decision maker for the purposes of IFRS 8 Operating Segments.

The Group's revenues from external customers and its non-current assets are divided into the following countries:

	2019		2018	
	Revenue $'000	Non-current assets $'000	Revenue $'000	Non-current assets $'000
USA	6,552	15,094	5,372	16,060
UK	1,844	389	2,526	230
Australia	372	-	523	-
Rest of World	299	-	154	-
Germany	187	-	390	-
Belgium	126	-	-	-
Holland	107	-	39	-
Other European countries	106	-	198	-
Switzerland	77	-	440	-
APAC	23	-	190	-
Ireland	21	-	119	-
Total	9,714	15,483	9,951	16,290

Revenues from external customers are identified on the basis of invoicing systems and adjusted to take into account the difference between invoiced amounts and deferred revenue adjustments required by IFRS.

An international SaaS customer, the Group's largest customer, accounted for 11% of 2019 revenue (2018: 14%).

The revenue is analysed as follows for each revenue category:

	2019 $'000	2018 $'000
Hardware and licence revenue	3,821	4,866
DDoS protection as-a-service revenue	1,287	819
Maintenance and support services revenue	4,606	4,266
Total	9,714	9,951

The revenue is analysed by timing of delivery of goods or services as:

	2019 $'000	2018 $'000
Point in time delivery	3,821	4,866
Over time	5,893	5,085
Total	9,714	9,951

No unsatisfied performance obligations arise except from those revenues which are recognised over time. See note 19 for further details. The as-a-service assets element of DDoS protection as-a service revenues arise under operating lease arrangements.

NOTES TO THE FINANCIAL STATEMENTS continued

4. Segment reporting continued

Contract balances

	Contract assets		Contract liabilities	
	2019 $'000	2018 $'000	2019 $'000	2018 $'000
At 1 January	1,360	764	2,880	1,989
Transfers in the period to/from trade receivables from/to contract assets	(34)	596	-	-
Amounts included in contract liabilities that were recognised as revenue in the period from the opening balance	-	-	(1,974)	(1,702)
Amounts included in contract liabilities that were recognised as revenue from amounts invoiced in the period	-	-	(3,919)	(3,383)
Amounts invoiced in the period and not recognised as revenue in the period	-	-	6,909	5,976
At 31 December	1,326	1,360	3,896	2,880

Company

The Company has no contract assets or liabilities (2018: $nil).

5. Loss for the year

The following items have been included in arriving at the Group loss for the year before taxation:

	2019 $'000	2018 $'000
DDoS protection as-a-service asset depreciation	125	124
Unrealised loss/(gain) on intercompany loan	313	(425)
Finance expense - Clydesdale loan including loan fees	364	268
Finance expense - lease liability	11	-
Development expenditure not capitalised	1,423	853
Amortisation of acquired intangible assets (note 9)	13	23
Amortisation of capitalised development expenditure (note 10)	2,638	2,918
Depreciation of property, plant and equipment (note 11)	515	483
Operating lease rentals payable	267	308

Auditor's remuneration

	2019 $'000	2018 $'000
Remuneration received by the Company's auditor for the audit of these Financial Statements	85	80
The audit of the financial statements of other Group companies	37	29
Fees payable to the Company's auditor for corporate services	-	2
Fees payable to the Company's auditor for taxation compliance services	30	30
Fees payable to the Company's auditor for taxation advisory services	-	6
	152	147

6. Tax on loss on ordinary activities

The tax assessed on the loss on ordinary activities for the year differs from the weighted average UK corporate rate of tax of 19.0% (2018: 19.0%). The differences are reconciled below:

	2019 $'000	2018 $'000
Total tax reconciliation		
Loss before taxation	(6,561)	(5,223)
Theoretical tax credit at UK Corporation tax rate 19.0% (2018: 19.0%)	(1,247)	(992)
Effect of:		
- expenditure that is not tax deductible	296	241
- accelerated capital allowances	(31)	(10)
- other timing differences	1	(1)
- losses not utilised	981	762
Actual taxation charge	-	-

Factors affecting future tax charges

As at 31 December 2019, the Group's cumulative fixed asset timing differences were $195,000 (2018: $394,000) and no deferred tax asset has been recognised in respect of these items.

In addition, the tax losses at that date amounted to $91.1 million (2018: $85.4 million). This comprised UK tax losses of $13.0 million and US tax losses of $78.1 million. $9.0 million of the tax losses relate to pre-acquisition US tax losses which can be offset against taxable profits over 15 years (there is a limit on the utilisation of pre-acquisition tax losses of $0.7 million per annum and any unused loss may be carried forward to subsequent periods). All other US tax losses expire 20 years from the end of the accounting period in which the loss arose. UK tax losses do not expire.

Deferred tax assets of $2.4 million (2018: $2.0 million) relating to the UK tax losses (applying a tax rate of 19.0%) and the deferred tax assets of $16.5 million (2018: $15.5 million) relating to the US tax losses and taxable temporary fixed asset differences (applying a tax rate of 21.0%) have not been recognised due to uncertainties as to the extent and timing of their future recovery.

7. Loss per share

Loss per share is calculated by dividing the earnings attributable to ordinary shareholders of the Company by the weighted average number of ordinary shares in issue during the year. The effects of anti-dilutive ordinary shares resulting from the exercise of share options are excluded from the calculation of the loss per share. Therefore, the diluted loss per share is equal to the loss per share.

	2019 loss $'000	2019 weighted average number of 1p shares Thousand	2019 loss per share Cents	2018 loss $'000	2018 weighted average number of 1p shares Thousand	2018 loss per share Cents
Basic and diluted loss per share	(6,561)	406,574	(1.6)	(5,223)	362,684	(1.4)

NOTES TO THE FINANCIAL STATEMENTS continued

8. Goodwill

Group

	$'000
Cost	
At 1 January 2018	17,983
At 31 December 2018	17,983
At 31 December 2019	17,983
Impairment	
At 1 January 2018	(8,992)
At 31 December 2018	(8,992)
At 31 December 2019	(8,992)
Carrying amount	
At 31 December 2019	8,991
At 31 December 2018	8,991
At 1 January 2018	8,991

Goodwill is tested at least annually for impairment and whenever there are indications that goodwill might be impaired.

Goodwill is allocated to the Group's single CGU, Corero Network Security ('CNS').

The recoverable amount for the CNS CGU was determined based on a discounted cash flow calculation to calculate fair values less costs to sell using cash flow projections over a 10 year period (2018: 10 year period). The discounted cash flow approach is a level 3 fair value calculation in the IFRS 13 fair value hierarchy.

The key assumptions for the discounted cash flow calculation are those regarding revenue growth and discount rates as summarised in the table below and commented on below:

	2019	2018
Forecast cash flow period	Years 1-2	Years 1-2
Extrapolated cash flow period	Years 3-10	Years 3-10
Cumulative annual growth rate ('CAGR') for revenue used for the forecast/extrapolated periods	14.2%	16.4%
Growth rates ('CAGR') used for the forecast/extrapolated periods:		
Year 1-2 (forecast period)	36.4%	28.1%
Years 3-5 (extrapolated period)	14.0%	24.9%
Years 6-10 (extrapolated period)	6.5%	7.4%
Revenue growth rate used beyond the extrapolated period	2.5%	2.5%
Discount rate	14.0%	14.4%

The pre-tax cash flows for the forecast period are derived from the most recent financial budget for the year ending 31 December 2020 ('2020 Budget') and the plan for the year ending 31 December 2021 ('2021 Plan') approved by the Board, with a sensitivity reflecting prior year experience and progress made in 2019 (30.0% applied to the 2020 budget and 40% to the 2021 Plan). The extrapolation for the period 2022 to 2029 is based on management estimates (with the key assumptions set out below).

The future pre-tax cash flows are discounted by a WACC of 14.0% (2018: 14.4%).

The key assumptions underlying the cash flow projections and which the recoverable amount is most sensitive to are (i) the revenue growth rates forecast and extrapolated for the period 2020 to 2024 (ii) and the discount rate.

The cash flow forecasts assume a CAGR revenue growth of 22.5% in the period 2019 to 2024 (36.4% for the period 2019 to 2021) and 6.5% for the period 2024 to 2029 (a 'CAGR' of 14.2% for 10-year forecast period). The cashflow forecasts reflect a sensitivity of 30.0% applied to the CNS 2020 Budget revenues and a sensitivity of 40% applied to the 2021 Plan revenues (and a sensitivity of 15.0% to 2020 operating costs and capital expenditure, and a sensitivity of 20% to 2021 operating costs and capital expenditure) reflecting prior year experience. The management of the Group believe these growth rates are appropriate for the forecasts given the progress the business made in 2019, the strategy for 2020 which is focused on scaling the business for profitability through leveraging the Group's expanded routes to market and the investment in sales and marketing in the second half of 2019. This strategy is expected to deliver a step change in revenue in the forecast period.

The global COVID-19 pandemic has brought uncertainty and wider market disruption globally. Whilst Corero has to date not seen any significant short-term impact on the provision of its products and services, and the sector within which the Company operates, there is likely to be a negative impact on Corero customers. The impact on the carrying value of goodwill of the COVID-19 pandemic will need to be assessed at future reporting dates.

The assumed growth rates are supported by the fact that the IT security market is forecast to grow strongly for the foreseeable future.

- According to Gartner (one of the leading global IT analyst firms), the global spending on infrastructure Protection and Network Security Equipment to grow to $14.1 billion and $16.9 billion in 2024 respectively (a 'CAGR' of 10.3% and 8.7% over the 2019-2023 forecast period) (Source: Gartner Forecast: Information Security and Risk Management, Worldwide, 2017-2023, Q4-19 Update).
- The DDoS market is expected to reach $4.7billion by 2024 (Source: MarketsandMarkets DDoS Protection and Mitigation market - Global Forecast to 2024, June 2019) - a CAGR of 14.0% in the period 2019 to 2024.

The above market growth rates used in the future cash flow assumptions reflect that CNS is in the early stages of the commercial exploitation of its intellectual property. In addition, the business's strategy is to continue to develop its product and solution offerings to remain a market leader in its chosen markets thereby providing the opportunity to generate above market average growth rates.

The growth rate assumed in the period beyond the 10-year extrapolation period of 2.5% is considered reasonable as historically IT spend has exceeded GDP growth.

The discount rate is based on a cost of equity using the Capital Asset Pricing Model with the key inputs being a risk-free interest rate estimate of 1.75% (based on 10-year US government bonds) (2018: 2.68%), comparable company betas, an equity risk premium of 7.4% (2018: 7.4%), and small company risk premium of 4.5% (2018: 4.5%). The WACC has been assessed based on that fact that the Company had debt at 31 December 2019 of $2.9 million. The WACC used in the valuation reflects current market assessments of the time value of money and the risks specific to CNS.

As stated above, the valuation to support the value in use of the CNS CGU is highly sensitive to changes in the cash flow forecasts and the discount rate assumptions, and there is no guarantee that the expected growth will be achieved. If the discount rate is increased by 25%, which in the assessment of management is reasonably possible, from 14.0% to 17.5%, this would result in an impairment of the carrying value of goodwill of $9.0 million meaning the goodwill would be fully impaired. If the sensitivity of 30.0% applied to the CNS 2020 Budget and 40% to the 2021 Plan revenues (and sensitivity of 15.0% to CNS 2020 Budget operating costs and capital expenditure, and 20% to the 2021 Plan operating costs and capital expenditure) was increased by 20%, which in the assessment of management is reasonably possible, this would result in a $9.0 million impairment in the carrying value of goodwill meaning the goodwill would be fully impaired.

Apart from the considerations in determining the value in use of the CNS CGU described above, the management of the Group is not currently aware of any other reasonably possible changes that would necessitate changes in its key estimates.

NOTES TO THE FINANCIAL STATEMENTS continued

9. Acquired intangible assets

Group

	Computer software $'000	Customer relationships $'000	Total $'000
Cost			
At 1 January 2018	6,003	197	6,200
Additions	-	-	-
At 31 December 2018 and at 1 January 2019	6,003	197	6,200
Additions	6	-	6
At 31 December 2019	6,009	197	6,206
Amortisation			
At 1 January 2018	(5,966)	(197)	(6,163)
Charge for year	(23)	-	(23)
At 31 December 2018 and at 1 January 2019	(5,989)	(197)	(6,186)
Charge for year	(13)	-	(13)
At 31 December 2019	(6,002)	(197)	(6,199)
Net book value			
At 31 December 2019	7	-	7
At 31 December 2018	14	-	14
At 1 January 2018	37	-	37

Company

The Company has no intangible fixed assets (2018: $nil).

10. Capitalised development expenditure

Group

	Total $'000
Cost	
At 1 January 2018	17,839
Additions	1,701
At 31 December 2018 and at 1 January 2019	19,540
Additions	1,360
At 31 December 2019	20,900
Amortisation	
At 1 January 2018	(10,175)
Charge for year	(2,918)
At 31 December 2018 and at 1 January 2019	(13,093)
Charge for year	(2,638)
At 31 December 2019	(15,731)
Net book value	
At 31 December 2019	5,169
At 31 December 2018	6,447
At 1 January 2018	7,664

Company

The Company has no capitalised development expenditure (2018: $nil).

NOTES TO THE FINANCIAL STATEMENTS continued

11. Property, plant and equipment

Group

	Computer Equipment $'000	Sales evaluation assets $'000	DDoS protection as-a-service assets $'000	Fixtures and Fittings $'000	Leasehold Improvements $'000	Right-of-use assets $'000	Total $'000
Cost							
At 1 January 2018	2,306	553	380	70	23	-	3,332
Additions	243	216	-	-	-	-	459
Transfers	-	(22)	22	-	-	-	-
Disposals	-	(273)	-	-	-	-	(273)
Foreign currency translation	(9)	-	-	(1)	(1)	-	(11)
At 31 December 2018 (as previously stated)	2,540	474	402	69	22	-	3,507
IFRS 16 - Leases	-	-	-	-	-	77	77
1 January 2019 (as restated)	2,540	474	402	69	22	77	3,584
Additions	87	184	204	34	70	343	922
Transfers	(2)	(8)	10	-	-	-	-
Disposals	-	(140)	-	-	-	-	(140)
Foreign currency translation	7	1	5	1	1	3	18
At 31 December 2019	2,632	511	621	104	93	423	4,384
Depreciation							
At 1 January 2018	(2,008)	(362)	(142)	(38)	(12)	-	(2,562)
Charge for year	(211)	(132)	(124)	(9)	(7)	-	(483)
Transfers	-	13	(13)	-	-	-	-
Disposals	-	143	-	-	-	-	143
Foreign currency translation	6	-	(1)	-	1	-	6
At 31 December 2018 and at 1 January 2019	(2,213)	(338)	(280)	(47)	(18)	-	(2,896)
Charge for year	(213)	(90)	(125)	(11)	(11)	(65)	(515)
Transfers	2	1	(3)	-	-	-	-
Disposals	-	49	-	-	-	-	49
Foreign currency translation	(5)	(1)	(5)	-	(1)	(1)	(13)
At 31 December 2019	(2,429)	(379)	(413)	(58)	(30)	(66)	(3,375)
Net book value							
At 31 December 2019	203	132	208	46	63	357	1,009
At 31 December 2018	327	136	122	22	4	-	611
At 1 January 2018	298	191	238	32	11	-	770

DDoS protection as-a-service assets depreciation is charged to cost of sales.

Company

The Company has no property, plant and equipment (2018: $nil).

12. Investment in subsidiaries

Company

	Investment in Corero Network Security, Inc. and Corero Network Security (UK) Limited $'000	Investment in Corero Group Services Limited $'000	Loan note $'000	Total $'000
Cost				
At 1 January 2018	63,884	-	7,341	71,225
Capitalisation of intercompany balances	2,736	7,565	-	10,301
Additions	-	-	370	370
Foreign currency translation	(3,515)	-	(419)	(3,934)
At 31 December 2018 and at 1 January 2019	63,105	7,565	7,292	77,962
Capitalisation of intercompany balances	1,828	1,202	-	3,030
Additions	-	-	373	373
Foreign currency translation	2,512	301	305	3,118
At 31 December 2019	67,445	9,068	7,970	84,483
Impairment				
At 1 January 2018	(50,210)	-	(1,745)	(51,955)
Impairment charge	-	(3,652)	-	(3,652)
Foreign currency translation	2,763	-	-	2,763
At 31 December 2018 and at 1 January 2019	(47,447)	(3,652)	(1,745)	(52,844)
Impairment charge	(7,816)	(533)	(414)	(8,763)
Foreign currency translation	(1,889)	(146)	(69)	(2,104)
At 31 December 2019	(57,152)	(4,331)	(2,228)	(63,711)
Net book value				
At 31 December 2019	10,293	4,737	5,742	20,772
At 31 December 2018	15,658	3,913	5,547	25,118
At 1 January 2018	13,674	-	5,596	19,270

The Directors have reviewed the carrying value of the cost of investments in subsidiaries of the Company with reference to current and future trading conditions and on a discounted free cash flow valuation which the Directors consider to be an appropriate valuation methodology. The cash flows used for the valuation are the cash flow forecasts used for the goodwill impairment test as set out in note 8. As at 31 December 2019 the provision against the investment in subsidiaries was $59.4 million (2018: $51.1 million), comprising a provision against the investment in Corero Network Security, Inc. and Corero Network Security (UK) Limited (together 'CNS') of $57.2 million and a provision against the investment in Corero Group Services Limited of $4.3 million. As noted in note 8, the discounted cash flow valuation for CNS is highly sensitive to changes in the cash flow forecast and the discount rate assumptions. If the sensitivity applied to the CNS 2020 Budget and 2021 Plan revenues (and the 'CNS' 2020 Budget operating costs and capital expenditure, and 2021 Plan operating costs and capital expenditure) was increased by 20%, the impairment charge for the year ended 31 December 2019 against the investment in CNS would be $18.1 million, meaning the investment in CNS would be fully impaired. If the discount rate is increased from 14.0% to 17.5%, the impairment charge for the year ended 31 December 2019 against the investment in CNS would be $14.7 million, with the net book value of the investment in CNS at 31 December being $3.4 million.

The Company's investment in Corero Network Security, Inc. includes a loan note instrument. These loan notes bear interest at 5.0% per annum which at the election of Corero Network Security, Inc. is payable quarterly or added to the principal amount which is due on 31 October 2021. As at 31 December 2019 the expected credit loss provision was $2.2 million (2018: $1.7 million).

NOTES TO THE FINANCIAL STATEMENTS continued

12. Investment in subsidiaries continued

The Company owns:

- 100% of the issued share capital of Corero Network Security, Inc. a company incorporated in Delaware, USA. The company's business address is 293 Boston Post Road, Marlborough, MA 01752, USA. The principal business of the company consists of the development and sale of hardware and software security products.
- 100% of the issued share capital of Corero Group Services Limited, a company incorporated and registered in England and Wales. The company's business address is Regus House, Highbridge, Oxford Road, Uxbridge, Middlesex, UB8 1HR. The principal business of the company consists of providing administration services to the Group.
- 100% of the issued share capital of Corero Network Security (UK) Limited, a company incorporated and registered in England and Wales. The company's business address is 3rd Floor, 53 Hanover Street, Edinburgh, EH2 2PJ. The principal business of the company consists of providing development and sales and marketing services on behalf of Corero Network Security, Inc.

13. Inventories

	Group 2019 $'000	Group 2018 $'000
Gross inventory	104	282
Less: provision for impairment	(41)	(157)
Net inventory	63	125

Net inventory comprises finished goods and raw materials. The value of inventory recognised as an expense in cost of sales was $1.2 million (2018: $1.5 million).

Company

The Company holds no inventory (2018: $nil).

14. Trade and other receivables

	Group		Company	
	2019 $'000	2018 $'000	2019 $'000	2018 $'000
Trade receivables	345	831	-	-
Contract assets (note 4)	1,326	1,360	-	-
Less: provision for impairment of trade receivables	-	-	-	-
Net trade receivables	1,671	2,191	-	-
Other debtors	137	109	82	78
Prepayments	1,071	904	-	-
	2,879	3,204	82	78

None of the Company's trade and other receivables are secured by collateral or credit enhancements.

The Group applies the simplified approach to measuring expected credit losses using a lifetime expected credit loss for trade receivables and contract assets. To measure expected credit losses on a collective basis, trade receivables and contract assets are grouped based on a similar credit risk and aging. The expected loss rates are based on the Group's historical credit losses experienced over a two year period prior to the period end. The historical loss rates are then adjusted for current and forward-looking information on macroeconomic factors affecting the Group's customers. The Group has identified gross domestic product growth rates, unemployment rates and inflation rates as the key macroeconomic factors in the countries in which the Group operates. The calculated expected credit loss allowance for the current and prior reporting periods has not been included as an impairment provision as the Directors consider it to be immaterial.

The Directors consider that the carrying amount of trade and other receivables approximates their fair value.

The maturity profile of trade and other receivables is set out in the table below:

	Group		Company	
	2019 $'000	2018 $'000	2019 $'000	2018 $'000
In one year or less, or on demand	2,572	2,977	8	6
In more than one year, but not more than five years	307	227	74	72
	2,879	3,204	82	78

Balances due in more than one year, but not more than five years, are presented as non-current in the Statement of Financial Position.

The analysis of trade and other receivables by foreign currency is set out in the table below:

	Group		Company	
	2019 $'000	2018 $'000	2019 $'000	2018 $'000
US dollars	2,483	2,519	-	-
UK pound	396	685	82	78
	2,879	3,204	82	78

The Group's foreign currency receivables are denominated in the functional currency of the subsidiaries in which they arise. There is no impact on the loss for the year from exchange rate movements on such financial instruments.

15. Trade and other payables

	Group		Company	
	2019 $'000	2018 $'000	2019 $'000	2018 $'000
Trade payables	708	895	-	-
Other payables	103	186	-	-
Accruals	1,336	852	144	134
	2,147	1,933	144	134

None of the Group or Company's trade and other payables are secured by collateral or credit enhancements.

The Directors consider that the carrying amount of trade and other payables approximates their fair value.

61% (2018: 78%) of the trade and other payables are due in less than three months.

The analysis of trade and other payables by foreign currency is set out in the table below:

	Group		Company	
	2019 $'000	2018 $'000	2019 $'000	2018 $'000
US dollars	798	1,064	-	-
UK pound	1,349	869	144	134
	2,147	1,933	144	134

The Group's foreign currency payables are denominated in the functional currency of the subsidiaries in which they arise. There is no impact on the loss for the year from exchange rate movements on such financial instruments.

NOTES TO THE FINANCIAL STATEMENTS continued

16. Lease Liabilities

	Group 2019 $'000	Group 2018 $'000
Lease liabilities	369	-
	369	-

The Directors consider that the carrying amount of lease liabilities approximates their fair value.

Company

The Company has no lease liabilities (2018: $nil).

The analysis of lease liabilities by foreign currency is set out in the table below:

	Group 2019 $'000	Group 2018 $'000
US dollars	42	-
UK pound	327	-
	369	-

17. Borrowings

The Group and Company borrowings.

	2019 $'000	2018 $'000
Bank loan	2,937	3,606

The Company bank loan comprises a four-year term GBP sterling bank loan of £3.0 million, which was drawn down in May 2018, with quarterly repayments commencing on 31 March 2019. These quarterly repayments increase from £150,000 on 31 March 2019 to £310,000 on 31 March 2022 such that the loan will be repaid in full on 31 March 2022. The loan costs were $286,000, $143,000 of which is payable on 31 March 2022. The bank loan has no early repayment penalties or redemption premium. The bank loan terms include the payment of a fee equal to 1.0% of the disposal proceeds on a sale or a change of control of the Company above a threshold amount of £100 million if such disposal or change of control occurs before April 2025.

Interest is payable quarterly in arrears based on 3-month GBP Libor plus 7.5%. The loan principal repayment schedule by year for the bank loan is:

Year	$'000
2020	1,221
2021	1,466
2022	411
	3,098

The contractual future cash flows, including undiscounted interest based on the interest rate at 31 December 2019 of 8.292% for the bank loan, are:

Year	$'000
2020	1,442
2021	1,576
2022	559
	3,577

The bank loan is secured by debentures over the business assets of all Group companies and by Group company guarantees including a guarantee from the Company. The bank loan terms include typical covenants for such a loan, as well as revenue and cash consumption covenants, which are tested quarterly and monthly respectively. These covenants were met, or by agreement with the bank not tested, for each covenant reporting period in the reporting period ended 31 December 2019.

At 31 December 2019, the Group's liabilities have contractual maturities which are summarised below. These contractual maturities reflect the payment obligations which may differ from the carrying values of the liabilities at the balance sheet date.

Group

	In one year or less, or on demand		Between two and five years	
	2019 $'000	2018 $'000	2019 $'000	2018 $'000
Trade and other payables	2,008	1,799	139	134
Lease liabilities	112	-	257	-
Total	2,120	1,799	396	134

Company

	In one year or less, or on demand		Between two and five years	
	2019 $'000	2018 $'000	2019 $'000	2018 $'000
Trade and other payables	5	-	139	134
Total	5	-	139	134

18. Financial instruments

The Group's financial instruments are categorised as shown below:

Group

	Book Value 2019 $'000	Book Value 2018 $'000
Financial assets		
Trade and other receivables	1,776	2,274
Cash	8,321	8,026
	10,097	10,300

Group

	Book Value 2019 $'000	Book Value 2018 $'000
Financial liabilities		
Trade and other payables	2,516	1,933
Borrowings	3,098	3,828
	5,614	5,761

The Group manages liquidity and credit risk in line with the financial risk management objectives and policies as set out on page 22.

At the present time the Group does not have significant exposure to foreign exchange or interest rate risk. There are no differences between the fair values and book values held by the Group.

NOTES TO THE FINANCIAL STATEMENTS continued

19. Deferred income

Group

	2019 $'000	2018 $'000
Current	2,800	2,034
More than one year but less than five years	1,096	846
	3,896	2,880

The Group's deferred income balance will be recognised as revenue evenly over the remaining term of the service and support agreements in place. The service and support agreements expire at various times throughout the year with no particular seasonality.

Company

The Company has no deferred income (2018: $nil).

20. Pensions

The Group's pension arrangements are operated through defined contribution schemes.

Defined contribution schemes

	2019 $'000	2018 $'000
Defined contribution pension costs	145	160
Accounts accrued as payable to schemes	-	3

21. Share capital

Authorised share capital

The authorised share capital comprises 745,821,970 (2018: 745,821,970) ordinary shares of 1 penny ('p') (1.33 cents ('c')) each.

Issued ordinary share capital

	$'000
1 January 2018	
315,417,642 ordinary shares of 1p each	4,556
Issued	
69,565,217 ordinary shares of 1p each (1.38c)	959
17,008,969 ordinary shares of 1p each (1.32c)	225
3,333 ordinary shares of 1p each (1.28c)	-
31 December 2018 and 1 January 2019	
401,995,161 ordinary shares of 1p each	5,740
Issued	
92,857,143 ordinary shares of 1p each (1.26c)	1,174
31 December 2019	
494,852,304 ordinary shares of 1p each	6,914

On 13 December 2019, 92,857,143 ordinary shares with a nominal value of 1p were issued at 3.5p (4c) per share by way of a subscription and placing.

On 27 April 2018, 69,656,217 ordinary shares with a nominal value of 1p were issued at 5.75p (8c) per share by way of a subscription and placing. On 19 October 2018, 17,008,969 ordinary shares with a nominal value of 1p were issued at 8.9p (12c) per share by way of a subscription. On 1 November 2018, 3,333 ordinary shares with a nominal value of 1p were issued at 8.0p (10c) per share as the result of the exercise of employee share options.

22. Share premium

	$'000
1 January 2018	73,239
69,565,217 ordinary shares of 5.75p each (8c) less issue costs	4,355
17,008,969 ordinary shares of 8.9p each (12c) less issue costs	1,744
3,333 ordinary shares of 8.0p each (10c)	-
31 December 2018 and at 1 January 2019	79,338
92,857,143 ordinary shares ordinary shares of 3.5p each (4c) less issue costs	2,784
31 December 2019	82,122

Consideration received in excess of the nominal value of the 92,857,143 shares issued on 13 December 2019 as a result of the subscription and placing has been included in share premium, less registration, commission and professional fees of $149,000.

Consideration received in excess of the nominal value of the 69,565,217 shares issued on 27 April 2018 as a result of the subscription and placing has been included in share premium, less registration, commission and professional fees of $200,000. Consideration received in excess of the nominal value of the 17,008,969 shares issued on 19 October 2018 as a result of the subscription has been included in share premium, less registration and professional fees of $32,000.

23. Employees and Directors

Employee expenses, including Directors, during the period

Group

	Total 2019 $'000	Total 2018 $'000
Wages and salaries	7,059	6,958
Social security costs	622	671
Other pension costs (note 20)	145	160
	7,826	7,789

Average monthly numbers of employees (including Directors) employed

	2019 Number	2018 Number
Sales and marketing	13	14
Technical, support and services	32	31
Management, operations and administration	6	6
	51	51

Company

The Company has no employees (2018: nil).

NOTES TO THE FINANCIAL STATEMENTS continued

23. Employees and Directors continued

Directors, being the Key Management personnel

	Salary & fees $'000	Bonus $'000	Benefits $'000	Pension $'000	Subtotal $'000	Options $'000	Company National Insurance Contributions $'000	Total 2019 $'000	Total 2018 $'000
Directors									
Ashley Stephenson	313	105	17	-	435	-	8	443	474
Andrew Lloyd	-	-	-	-	-	-	-	-	416
Andrew Miller	222	70	7	21	320	-	29	349	387
Jens Montanana	41	-	-	-	41	-	-	41	54
Peter George	36	-	-	-	36	46	-	82	-
Richard Last	35	-	-	-	35	-	3	38	37
	647	175	24	21	867	46	40	953	1,368

Bonus payments of $175,000 were awarded to Directors in respect of the year to 31 December 2019 (2018: $109,000).

Ashley Stephenson has an employment agreement with a wholly owned subsidiary of the Company which provides for the payment of six months' base salary if the agreement is terminated by the Company without cause.

Andrew Miller has an employment agreement which can be terminated by either party on not less than six months' written notice. A subsidiary company provides for pension contributions (included in the table above) of 10% of basic salary payable to a personal pension plan.

Andrew Lloyd's employment agreement was terminated with effect from 4 January 2019, and he resigned as a Director of the Company on this date, with such termination having been agreed on 31 December 2018. The salary and fees paid to Andrew Lloyd for the year ended 31 December 2018 in the table above include contractual severance and holiday pay costs totalling $106,000. A subsidiary company provided for pension contributions (included in the table above) of 5% of basic salary payable to the Group's defined pension plan.

Jens Montanana waived his Non-executive Director fees for the year ended 31 December 2018 of $34,000.

24. Operating lease commitments

The Group has total future minimum lease payments under non-cancellable operating leases totalling $26,000 (2018: $235,000) analysed by year of expiry as follows:

	2019 $'000	2018 $'000
Land and building agreements expiring:		
Within one year	26	84
Within two to five years	-	91
Other agreements expiring:		
Within one year	-	60
	26	235

Company

The Company has no operating lease commitments (2018: $nil).

25. Contingent liabilities

Corero Network Security (UK) Limited was in December 2015 awarded a grant of £600,000 for a development project over three years from Scottish Enterprise. Any monies becoming repayable by Corero Network Security (UK) Limited under the grant terms for breaches of the grant conditions are guaranteed by the Company. These conditions which are typical for a grant of this nature, and which apply for a period of five years from the final grant payment date (being 14 March 2019), include maintaining minimum headcount in Scotland and no change of control.

26. Share options

The Company has the following share option schemes:

- Enterprise Management Incentive Scheme for its employees, which has been approved by HMRC.
- Executive Enterprise Management Incentive Scheme, which has been approved by HMRC.
- Unapproved Share Option Scheme.
- Deferred Payment Share Plan.

In August 2010, 1,257,000 options were granted to certain Directors and employees under the Executive Enterprise Management Incentive scheme and Unapproved Share Option Scheme. The options granted vested immediately upon grant.

All other options granted in the period 2010 to 2019 have a three year vesting period, vesting one third on the first anniversary of grant, one third on the second anniversary of grant and one third on the third anniversary of grant. Shares acquired on the exercise of an option may not be sold until the expiry of the second anniversary following the date of option grant. With the exception of options granted in April 2017 to Directors and certain employee which include a revenue growth performance vesting condition, there are no vesting conditions for options granted.

If an option holder ceases to be in employment or hold office within the Group, options granted shall immediately lapse unless such cessation is because of the option holder's death; the option holder's ill health or disability; the company that employs the option holder ceasing to be under the control of the Company or such company ceasing to be within the Group; the transfer of sale of the undertaking or part-undertaking in which the option holder is employed to a person who is neither under the control of the Company nor within the Group; or any other reason that the Board in its absolute discretion shall determine.

On a cessation of employment or office as set out above, options shall be exercisable to the extent they have vested according to the terms of the option agreement and the provisions of the relevant share option scheme and must be exercised within 30 days following such cessation unless otherwise determined by the Board or if such cessation is by reason of death in which case the option holder's personal representatives must exercise the option within 12 months following the date of the option holder's death.

On 18 March 2014, the Enterprise Management Incentive Scheme was extended by 10 years to 20 April 2021.

NOTES TO THE FINANCIAL STATEMENTS continued

26. Share options continued

Share options granted at 31 December 2019 were as follows:

Option holders	Date granted	Expiry date	Exercise price - pence (cents)	At 1 January 2019	Granted	Exercised	Forfeit/ cancelled	At 31 December 2019
Enterprise Management Incentive Scheme								
Other Holders	April 2015	April 2025	15p (23c)	500,000	-	-	-	500,000
	April 2017	April 2027	8p (10c)	1,591,569	-	-	(5,000)	1,586,569
	June 2017	June 2027	13.6 (18c)	1,705,305	-	-	(7,000)	1,698,305
	September 2017	September 2027	9.1p (12c)	20,000	-	-	(15,000)	5,000
	April 2018	April 2028	5.9p (7c)	13,000	-	-	(13,000)	-
	October 2018	October 2028	11.0p (14c)	2,712,432	-	-	(142,500)	2,569,932
	April 2019	April 2019	8.4p (10.9c)	-	247,500	-	(10,000)	237,500
	September 2019	September 2019	2.5p (3.1c)	-	5,000	-	-	5,000
Executive Enterprise Management Incentive Scheme								
Andrew Miller	May 2018	May 2028	13.6p (18c)	2,356,000	-	-	-	2,356,000
	October 2018	October 2028	11.0p (14c)	599,479	-	-	-	599,479
Andrew Lloyd	April 2017	April 2027	8p (10c)	3,124,999	-	-	(1,041,666)	2,083,333
Unapproved Share Option Scheme								
Jens Montanana	April 2017	April 2027	8p (10c)	994,000	-	-	-	994,000
	May 2018	May 2028	13.6p (18c)	425,000	-	-	-	425,000
	October 2018	October 2028	11.0p (14c)	400,000	-	-	-	400,000
Richard Last	April 2017	April 2027	8p (10c)	450,000	-	-	-	450,000
	June 2017	June 2027	13.6 (18c)	180,000	-	-	-	180,000
	October 2018	October 2028	11.0p (14c)	200,000	-	-	-	200,000
Andrew Lloyd	April 2017	April 2027	8p (10c)	870,001	-	-	(290,000)	580,001
	June 2017	June 2027	13.6 (18c)	200,000	-	-	-	200,000
Ashley Stephenson	April 2017	April 2027	8p (10c)	2,319,000	-	-	-	2,319,000
	June 2017	June 2027	13.6 (18c)	3,200,000	-	-	-	3,200,000
	October 2018	October 2028	11.0p (14c)	2,400,000	-	-	-	2,400,000
Andrew Miller	April 2017	April 2027	8p (10c)	1,919,000	-	-	-	1,919,000
	October 2018	October 2028	11.0p (14c)	900,521	-	-	-	900,521

Option holders	Date granted	Expiry date	Exercise price – pence (cents)	At 1 January 2019	Granted	Exercised	Forfeit/ cancelled	At 31 December 2019
Peter George	January 2019	January 2029	11.3p (14.9c)	-	750,000	-	-	750,000
Other holders	August 2010	August 2020	31p (50c)	308,000	-	-	-	308,000
	March 2011	March 2021	40p (65c)	290,000	-	-	-	290,000
	September 2011	September 2021	37.5p (61c)	40,000	-	-	-	40,000
	March 2012	March 2022	54.5p (89c)	140,000	-	-	-	140,000
	April 2013	April 2023	25p (38c)	100,000	-	-	-	100,000
	May 2014	May 2024	25p (42c)	670,666	-	-	-	670,666
	April 2015	April 2025	15p (23c)	53,000	-	-	-	53,000
	October 2015	September 2025	15p (23c)	105,000	-	-	-	105,000
	May 2016	May 2026	20p (29c)	20,000	-	-	-	20,000
	September 2016	September 2026	22.5p (33c)	455,000	-	-	-	455,000
	April 2017	April 2027	8p (10c)	623,626	-	-	-	623,626
	June 2017	June 2027	13.6 (18c)	765,500	-	-	(100,000)	665,500
	September 2017	September 2027	9.1p (12c)	505,000	-	-	(5,000)	500,000
	October 2018	October 2028	11.0p (14c)	3,338,568	-	-	(70,000)	3,268,568
	April 2019	April 2019	8.4p (10.9c)	-	600,000	-	(550,000)	50,000
	September 2019	September 2019	2.5p (3.1c)	-	4,430,000	-	-	4,430,000
				34,494,666	6,032,500	-	(2,249,166)	38,278,000

The closing mid-market price for the Company's shares at 31 December 2019 was 5.88p (8c) and the high and low for the year was 12.89p (16c) and 2.44p (3c).

In the 12 months to 31 December 2019, no options were exercised (2018: 3,333) and 2,249,166 options were forfeited (2018: 4,328,417).

NOTES TO THE FINANCIAL STATEMENTS continued

26. Share options continued

Share options granted at 31 December 2018 were as follows:

Option holders	Date granted	Expiry date	Exercise price – pence (cents)	At 1 January 2018	Granted	Exercised	Forfeit/ cancelled	At 31 December 2018
Enterprise Management Incentive Scheme								
Other Holders	April 2015	April 2025	15p (23c)	500,000	–	–	–	500,000
	April 2017	April 2027	8p (10c)	1,613,569	–	(3,333)	(18,667)	1,591,569
	June 2017	June 2027	13.6 (18c)	1,715,305	–	–	(10,000)	1,705,305
	September 2017	September 2027	9.1p (12c)	542,000	–	–	(522,000)	20,000
	April 2018	April 2028	5.9p (7c)	–	13,000	–	–	13,000
	October 2018	October 2028	11.0p (14c)	–	3,012,432	–	(300,000)	2,712,432
Executive Enterprise Management Incentive Scheme								
Andrew Miller	August 2010	August 2020	25p (41c)	476,000	–	–	(476,000)	–
	September 2012	March 2022	54.5p (89c)	80,000	–	–	(80,000)	–
	April 2013	April 2023	25p (38c)	250,000	–	–	(250,000)	–
	May 2014	May 2024	25p (42c)	362,570	–	–	(362,570)	–
	May 2018	May 2028	13.6p (18c)	–	2,356,000	–	–	2,356,000
	October 2018	October 2028	11.0p (14c)	–	599,479	–	–	599,479
Andrew Lloyd	April 2017	April 2027	8p (10c)	3,124,999	–	–	–	3,124,999
Unapproved Share Option Scheme								
Jens Montanana	August 2010	August 2020	25p (41c)	165,000	–	–	(165,000)	–
	March 2012	March 2022	54.5p (89c)	30,000	–	–	(30,000)	–
	April 2013	April 2023	25p (38c)	80,000	–	–	(80,000)	–
	January 2016	January 2026	20p (29c)	150,000	–	–	(150,000)	–
	April 2017	April 2027	8p (10c)	994,000	–	–	–	994,000
	May 2018	May 2028	13.6p (18c)	–	425,000	–	–	425,000
	October 2018	October 2028	11.0p (14c)	–	400,000	–	–	400,000
Richard Last	April 2017	April 2027	8p (10c)	450,000	–	–	–	450,000
	June 2017	June 2027	13.6 (18c)	180,000	–	–	–	180,000
	October 2018	October 2028	11.0p (14c)	–	200,000	–	–	200,000
Andrew Lloyd	April 2017	April 2027	8p (10c)	870,001	–	–	–	870,001
	June 2017	June 2027	13.6 (18c)	200,000	–	–	–	200,000
Ashley Stephenson	April 2017	April 2027	8p (10c)	2,319,000	–	–	–	2,319,000
	June 2017	June 2027	13.6 (18c)	3,200,000	–	–	–	3,200,000
	October 2018	October 2028	11.0p (14c)	–	2,400,000	–	–	2,400,000
Andrew Miller	May 2014	May 2024	25p (42c)	387,430	–	–	(387,430)	–
	April 2015	April 2025	15p (23c)	300,000	–	–	(300,000)	–
	January 2016	January 2026	20p (29c)	500,000	–	–	(500,000)	–
	April 2017	April 2027	8p (10c)	1,919,000	–	–	–	1,919,000
	October 2018	October 2028	11.0p (14c)	–	900,521	–	–	900,521

Option holders	Date granted	Expiry date	Exercise price – pence (cents)	At 1 January 2018	Granted	Exercised	Forfeit/ cancelled	At 31 December 2018
Other holders	August 2010	August 2020	31p (50c)	308,000	-	-	-	308,000
	March 2011	March 2021	40p (65c)	290,000	-	-	-	290,000
	September 2011	September 2021	37.5p (61c)	40,000	-	-	-	40,000
	March 2012	March 2022	54.5p (89c)	140,000	-	-	-	140,000
	April 2013	April 2023	25p (38c)	100,000	-	-	-	100,000
	May 2014	May 2024	25p (42c)	670,666	-	-	-	670,666
	September 2014	September 2024	25p (41c)	5,000	-	-	(5,000)	-
	April 2015	April 2025	15p (23c)	53,000	-	-	-	53,000
	October 2015	September 2025	15p (23c)	105,000	-	-	-	105,000
	May 2016	May 2026	20p (29c)	100,000	-	-	(80,000)	20,000
	September 2016	September 2026	22.5p (33c)	462,500	-	-	(7,500)	455,000
	April 2017	April 2027	8p (10c)	896,626	-	-	(273,000)	623,626
	June 2017	June 2027	13.6 (18c)	1,096,750	-	-	(331,250)	765,500
	September 2017	September 2027	9.1p (12c)	505,000	-	-	-	505,000
	October 2018	October 2028	11.0p (14c)	-	3,338,568	-	-	3,338,568
				25,181,416	13,645,000	(3,333)	(4,328,417)	34,494,666

Total number of options granted to Directors

	31 December 2019 Options granted	31 December 2018 Options granted	Relevant Share Option scheme
Ashley Stephenson	7,919,000	7,919,000	Unapproved Share Option Scheme
Andrew Lloyd	2,863,333	4,195,000	Executive Enterprise Management Scheme and Unapproved Share Option Scheme
Andrew Miller	5,915,000	5,915,000	Executive Enterprise Management Scheme and Unapproved Share Option Scheme
Jens Montanana	1,819,000	1,819,000	Unapproved Share Option Scheme
Peter George	750,000	-	Unapproved Share Option Scheme
Richard Last	830,000	830,000	Unapproved Share Option Scheme
	20,096,333	20,678,000	

None of the Directors holding office at the balance sheet date exercised options during the year.

The options held by Andrew Lloyd at 31 December 2018 included 1,331,667 share options which were forfeited in accordance with the settlement agreement with Andrew Lloyd dated 2 January 2019.

Andrew Miller has a contractual right (granted in March 2011) to purchase 140,000 ordinary shares in the Company from the Employee Share Ownership Trust at 40p per share pursuant to a grant made to him under the Deferred Payment Share Plan.

Share-based payments

The Remuneration Committee ('RC') approves the grant of share options to employees of the Group under the Group's share option schemes.

Share options are granted with a fixed exercise price which is equal to the market price at the date of the grant or higher price determined by the RC. The share options granted are required to be exercised within 10 years from the date of grant.

Share options are valued using the Black-Scholes option-pricing model.

NOTES TO THE FINANCIAL STATEMENTS continued

26. Share options continued

Share options granted

The weighted average fair value of the options granted in the year was 2.0p (2.6c). The value of share options granted during the year was calculated using the Black-Scholes option pricing model. The following variables and ranges were used:

	2019	2018
Share price at date of grants	2.5p-11.3p (3.1c-14.9c)	6p-11p (7c-14c)
Exercise price	2.5p-11.3p (3.1c-14.9c)	6p-13.6p (7c-18c)
Expected volatility	51.9-62.4%	56.1-61.5%
Estimated years to exercise	4.0-4.7	4.3-4.8
Risk free interest rate	0.3-0.9%	1.1%

The table below provides information on all options outstanding at the end of the year:

Weighted average remaining contractual life	7.9 years
Average remaining contractual life	6.0 years
Options exercisable	19,545,277
Exercise price range	2.5p-55p (3c-73c)
Weighted average share price	9p (12c)
Weighted average exercise price	11p (15c)
Expected volatility	0.2%-62.4%
Risk free rate - 5 year gilt rate	0.3%-2.5%
Expected dividend yield	Nil

Volatility is calculated as the standard deviation of the closing daily share price over a period of 24 months prior to the grant date.

Operating expenses in the Statement of Comprehensive Income included a charge of $265,000 (2018: $22,000) relating to employee share-based payments.

27. Related parties and transactions

As part of the subscription and placing on 13 December 2019, Jens Montanana contributed $1.5 million and Richard Last contributed $22,000 (note 21).

The Directors consider the Group's key management personnel to be the Board of Directors of the Company whose compensation is detailed in note 23.

Company key management compensation was $nil (2018: $nil) as the key management are employed by subsidiaries.

CORPORATE DIRECTORY

Directors

Jens Montanana (Non-executive Chairman)
Richard Last (Non-executive Director)
Peter George (Non-executive Director)
Ashley Stephenson (CEO)
Andrew Miller (CFO)

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