

# F-Secure

Company report

9/2020

# Wait for the acceleration of growth continues

For the last five years, F-Secure has been making significant investments in corporate security, and the fruits of the new product and service areas are beginning to be ready to be harvested in the form of accelerating growth once the COVID-19 situation stabilises. The stable performance of consumer security provides background support for continuing investments in corporate growth areas, while the company's steady and continuous software business on the whole balances risks as COVID-19 is still increasing uncertainty in the short term. To our minds, F-Secure's stable growth outlook has already been priced in the share, and therefore the risk-reward ratio is neutral. We reiterate F-Secure's reduce recommendation and adjust the target price to EUR 3.0 (previously EUR 2.9).

## Transformation from an endpoint protection company into a cyber security company is in the home stretch

During its history, F-Secure has developed a strong expertise, reputation and brand in the prevention of malware and security threats. The company's business model emphasising endpoint protection products is on a very steady foundation and continuous and scalable by nature, which lays down a solid foundation for the company to invest in growth areas in the cyber security market. Over the last 5 years, the market changing from preventing threats to detection and response has also caused challenge and pressure to change to an established company that has historically focused on the consumer business, like F-Secure. F-Secure has responded to the change through acquisitions, by developing and harmonising its product and service portfolio and building distribution channels for the medium-sized and large company segment.

## Growth in corporate security is the key value driver

In its strategy, F-Secure pursues growth in corporate security through new Managed Detection and Response (MDR) and Endpoint Detection and Response (EDR) solutions, which markets are currently undergoing strong growth. F-Secure's current corporate security products and services (2020e: 55% of revenue) are, according to our view, very competitive and the expansion of the offering in recent years creates cross-selling potential. Building sales channels has, however, taken longer than expected, which has been visible in organic growth falling slightly short of expectations in recent years. Now, the pieces are falling into place with regard to sales partners, which should support post-COVID-19 growth. The biggest investments in corporate security are also behind, and therefore growth should also be reflected in profitability going forward. In consumer security, F-Secure pursues steady growth and strong profitability, and the outlook is currently positive.

## Wave of investments in the industry can be seen as tightened competition

Cyber security companies are solving one of the biggest problems of digitizing society, and therefore the demand fundamentals of the market are excellent, even though the COVID-19 pandemic has made sales more difficult and forced companies to postpone and cancel some cyber security projects. The global cyber security market is approximately USD 124 billion this year, growing at an annual rate of some 8%. F-Secure's business is still focused on established product areas with slower growth than the general market, but the share of fast-growing detection and response products and cyber security services of the company's business is continuously growing as the strategy progresses. As an investment, we consider the cyber security sector to have become challenging in spite of its growth prospects, as the wave of investments that has taken place in the sector over the last 10 years has been seen as a considerable tightening of competition in recent years. We consider tightening competition both in the company's established product areas and targeted growth areas to still be an obvious threat.

## Stable growth outlook has already been priced in the share

F-Secure's EV/S multiples (2020e-2021e EV/S 2.2x-2.0x) are, in the light of the cyber security sector (2020e median EV/S 7.3x), low. However, we do not consider the multiples to have justified room for increase in the short term, as slow-growing product areas (EPP and consumers) and consulting, which is less scalable, still generate a significant share of the company's revenue. With the current growth outlook, the valuation of the share also appears neutral in the light of our sum of the parts calculation. The earnings multiples (2020e-2021e adj. P/E 39x-33x) hardly support the valuation.

## Analysts

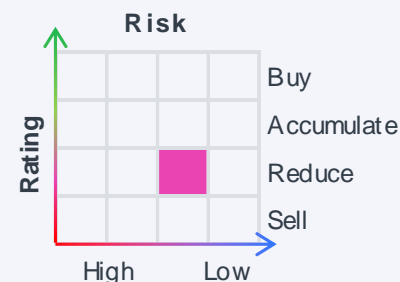


**Atte Riikola**  
+358 44 593 4500  
atte.riikola@inderes.fi



**Mikael Rautanen**  
+358 50 346 0321  
mikael.rautanen@inderes.fi

## Recommendation



**Reduce**  
(prev. Reduce)

**3,0 EUR**  
(prev. 2,9 EUR)

**Stock price:**  
3,06 EUR

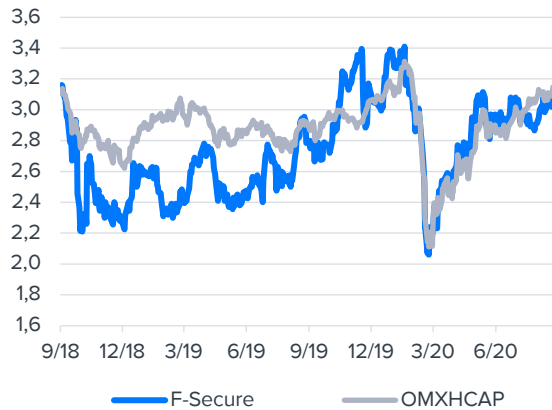
**Potential:**  
-2,0 %

## Key figures

	2019	2020e	2021e	2022e
<b>Revenue</b>	217	218	229	242
<b>growth-%</b>	14%	0%	5%	5%
<b>EBIT adj.</b>	9.6	20.1	21.0	25.2
<b>EBIT-% adj.</b>	4.4%	9.2%	9.2%	10.4%
<b>Net Income</b>	3.4	9.7	11.8	15.4
<b>EPS (adj.)</b>	0.03	0.08	0.09	0.11
<b>P/E (adj.)</b>	92.5	39.3	33.0	26.7
<b>P/B</b>	6.3	5.6	5.0	4.5
<b>Dividend yield-%</b>	0.0%	0.0%	1.3%	1.6%
<b>EV/EBIT (adj.)</b>	51.8	23.8	21.9	17.7
<b>EV/EBITDA</b>	15.9	14.4	13.6	12.0
<b>EV/S</b>	2.3	2.2	2.0	1.8

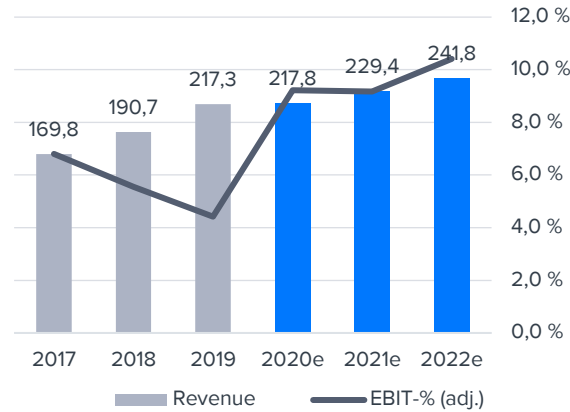
Source: Inderes

### Stock price



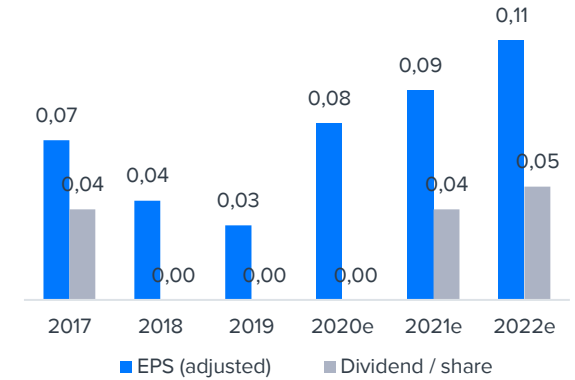
Source: Thomson Reuters

### Revenue and EBIT-% development



Source: Inderes

### EPS and DPS



Lähde: Inderes



### Value Drivers

- Growth in corporate security
- Strategic fit of the MWR acquisition
- Strong demand outlook in corporate security
- F-Secure has good preconditions to invest in growth
- Consumer security creates stable cash flow
- Scalable and continuous business model by nature

### Risk factors

- Tight competition and rapid market change
- Success in corporate security growth investments
- Cyber security market potentially over-invested
- Transformation process into a comprehensive cyber security company partly in progress

### Valuation

- Valuation levels in sector are high, F-Secure's EV/S-multiple is low compared to the sector
- Earnings multiples are high and don't give support to valuation
- Sum of the parts indicates that the share is fairly valued

# Contents

Company description and business model	<b>5-13</b>
Investment profile	<b>14-16</b>
Industry	<b>17-22</b>
Competition	<b>23-24</b>
Strategy	<b>25-27</b>
Financial situation	<b>28-30</b>
Estimates and valuation	<b>31-36</b>
Tables	<b>37-41</b>
Disclaimer and recommendation history	<b>42</b>

# F-Secure in brief

F-Secure is a company that offers cyber security products and services, whose solutions help thousands of companies and millions of consumers to protect themselves from security threats.

**1988**

Year of establishment

**1999**

IPO

**EUR 217.3 million** (+14 % vs. 2018)

Revenue 2019

**+22 %** 2015-2019

Corporate security revenue CAGR

**EUR 23.2 million** (10.7 % margin)

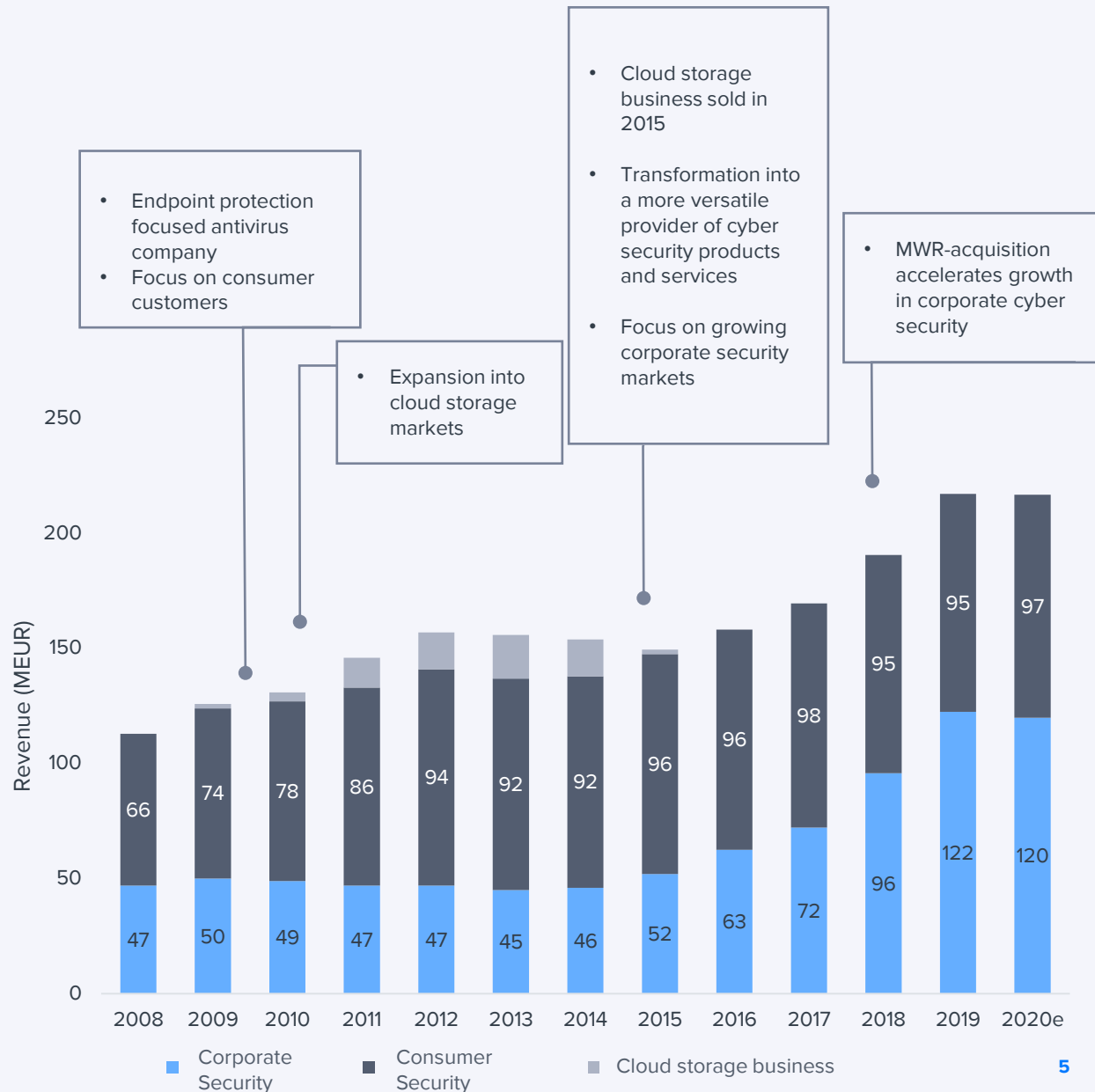
Adj. EBITDA 2019

**1696**

Personnel at the end of 2019

**44 % / 56 %**

Share of consumer/corporate security in net sales 2019



# Company description and business model 1/6

## Company description

### Software company focusing on cyber security

F-Secure is a cyber security software company established in 1988. The company's roots are deep in antivirus software, where the company has operated since it was founded and, in practice, for as long as computer viruses have existed. Through its history, the company has developed a strong reputation and brand in preventing malware and cyber security threats and in how malware develop and how their industrial logic works. F-Secure's antivirus software for endpoints have won numerous awards in international cyber security tests and the company's endpoint protection products have been sold to millions of consumer and hundreds of thousands of companies worldwide.

Historically, F-Secure's business has focused on strong antivirus know-how, where the basis is the prevention of attacks and threats. However, a paradigm shift has happened on the cyber security markets. Nowadays, the assumption that all attacks could be prevented has become impossible. With the development of technology, malware and hacking have also become clearly smarter and constantly evolving, which is why it is practically impossible to prevent all modern attacks in advance with security software. Thus the market is shifting from attack prevention increasingly towards detecting and responding to threats, a mindset where cyber security is seen more as processes than products. This has been an important change for the market and F-Secure.

Especially on the corporate security markets focus has shifted from preventive blocking of threats to quick detection of threats that have passed

security and responding to them. The corporate security market is, therefore, growing strongly. In consumer security, the market is extremely mature and growth is slow.

F-Secure has reacted to the market change. In 2015, the company started transforming from an antivirus company towards a company that offers more versatile cyber security services and products and focused its growth investments on the growing corporate security markets. This transition has required a change in the company's organization, mindset, product offering and strategy. The MWR acquisition in 2018 accelerated the transformation of the company, and today, corporate security accounts for more than one half of F-Secure's net sales.

The change process required by the market disruption is still ongoing at F-Secure. Thanks to its history, the company's clear strength is its stable and profitable consumer business, as well as established position and well-known brand on the security markets. In corporate security, many competitors are clearly unprofitable and dependent on external financing when investing aggressively in growth, while F-Secure can make similar investments in this area with cash flow.

In light of current market trends, the shift in F-Secure's strategic focus to the growing corporate business could have started earlier as the company was still in the early 2010s investing heavily in the consumer business, for example, in cloud storage. Expansion into the cloud storage business and selling of this business in 2015 did, however, create clear shareholder value and provided the company with capital to invest in growth in corporate security.



## Market change

### Previously

- Mass viruses
- Prevention
- Cyber security is technology
- Point-like solutions

### Now

- Intelligent, targeted attacks
- Detection and response
- Cyber security is a process
- Holistic solutions



## F-Secure's transition

- Focus from consumer security to corporate security
- New product areas (detection and response)
- Integration of products and services
- Products accompanied with services

# Company description and business model 2/6

## Business model

### Two business areas

F-Secure’s business currently comprises developing, offering and selling of corporate security products and services, as well as consumer security products. The company’s basis is the stable and healthy antivirus products business on top of which it is building its current growth strategy.

In 2019, the company’s net sales were EUR 217 million and adjusted EBITDA was EUR 23.2 million. The share of corporate security in the company’s net sales was 56% and that of consumer security was 44%. On the corporate side, company growth has been strong and on the consumer side stable. Net sales is by nature very resilient and is based on annual licenses of various durations and, increasingly, on monthly SaaS fees. Geographically the company focuses on Europe. The share of the Nordic countries in the company’s net sales was 33% and that of the rest of Europe was 44% in 2019. The rest of net sales came from North America (9%) and elsewhere in the world (13%). At the end of 2019, the company had 1,696 employees.

The company's strategic focus in terms of growth lies in corporate security, where the market is growing rapidly. Consumer security is, however, an important pillar for F-Secure, where the company is aiming for moderate growth in line with the market and good profitability and cash flow, which in part can be used to finance the growth investments in corporate security. The synergy between the consumer and corporate business derive primarily from shared technologies.

### Sales, marketing and distribution channels

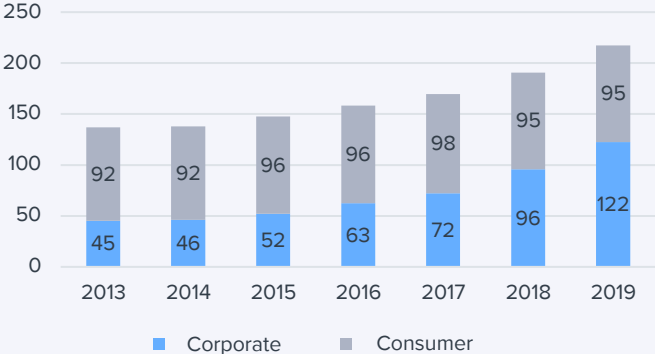
F-Secure is currently investing heavily in increasing

the net sales from corporate security and the company has clearly increased its resources in terms of sales and marketing in recent years. In 2019 there was 516 employees in sales and marketing and those expenses were 49% of net sales. We estimate that the share of sales and marketing expenses will decrease in the future as the largest growth investments have already been made.

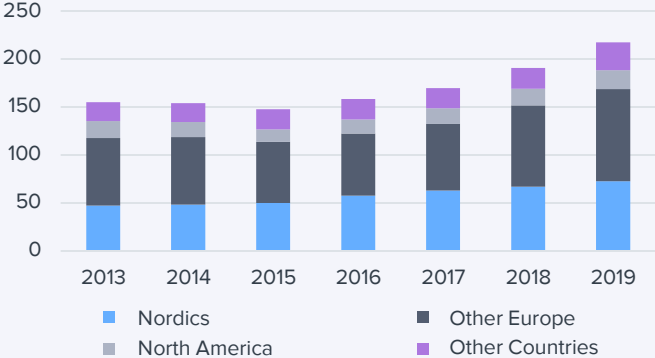
F-Secure sells its corporate security products through an extensive retailer network, which globally consists of over 6,000 IT service partners. The task of the company’s own sales organization is to support and provide services for the retailers, as well as develop and grow this network in order to accelerate the growth in corporate security products. Critical in terms of success is that selling of F-Secure’s products and related services is good business for the retailers. The current clientele of F-Secure’s cyber security products consists mainly of small companies but the company is shifting its focus towards medium sized and large companies with its new security products, which has required development of the existing partner channels. The company primarily offers cyber security consulting as direct sales through its own sales organization.

In consumer security, a majority of net sales is created globally through a network that covers approximately 200 operators, which is one of the company’s key strengths and competitive advantages. F-Secure started building a sales channel through operators already at the beginning of the 2000s and its operator network is clearly the largest compared to other cyber security companies. Consumer products are also sold through many partners operating online and retailer partners, and also in the company’s own online store.

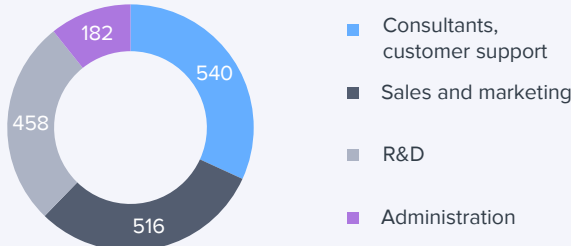
Distribution of revenue (MEUR)



Geographic distribution of revenue



Employees 2019



Source: Inderes

## Partners



IT service partners



Telecom operators



Retailers

## Operations

R&D



Sales and marketing



F-Secure Labs research center



## Resources

Long-term cyber security expertise



Cyber security technology and software



Extensive retailer network



Strong brand, especially in Europe



## Business idea

F-Secure offers a comprehensive selection of cyber security solutions and services to both corporates and consumers.



- Solid expertise in virus prevention
- New products for detection and response
- Ability to deliver comprehensive product and service packages
- High value-added services complement the products

## Go-to-market

### Corporate security

IT service partners: +6000 partners

### Consumer security

+200 operators  
Retailers

Own online store

## Customer segments



Large companies and governments



Small and medium sized companies



Consumers

## Products

### Prevention solutions (EPP)

- Protection Service for Business
- Business Suite
- Cloud protection for Salesforce

*Significant product area, stable growth*

### Prediction solutions

- Radar and phishd

*Small product area*

### Detection and response solutions

- Rapid Detection & Response (EDR)
- Rapid Detection & Response Service (MDR)
- Countercept (MDR)

*Rapidly growing, important product area*

### Cyber security services

- Premium consultancy services for all areas of cyber security

*Significant business area, good growth*

### Consumer Security

- Safe, Freedom, Key and Sense

*Significant product area, stable growth*

## Cost structure (2019)

1696 employees (2019)



Materials and services  
(23.3 % of net sales)



Sales and marketing  
(48.8 %)



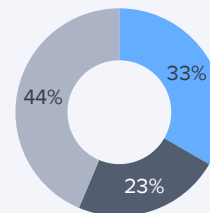
Research and development  
(18,2 %)



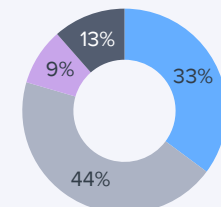
Administration  
(8.6 %)\*

## Revenue stream (2019)

Net sales 217.3 m€  
Adj. EBITDA 23.2 m€ (2019)



- Corporate security products
- Corporate security services
- Consumer security



- Nordics
- Other Europe
- North America
- Other Countries



# Company description and business model 3/6

## Product development

In 2019, there was 458 R&D employees and R&D costs corresponded with some 18% of net sales. R&D focuses in particular on developing the features of existing corporate security detection and response solutions (MDR and EDR). Another key development target is better integration of the product portfolio in order to be able to offer more comprehensive cyber security solutions to customers. In consumer security, there is low pressure to increase product development investments in endpoint protection products, but the company also invests in certain product areas on the consumer side (like Sense and ID Protection).

F-Secure's core technologies, especially in detecting malware, are basically very similar both in consumer and corporate security products, which creates a lot of synergy in product development. F-Secure's consulting business also enriches product development as F-Secure's consultants can investigate security breaches that have never been seen before and transfer the knowledge they gained to product development.

F-Secure's business model includes considerable economies of scale and network effects on product development. The company's products daily collect vast amounts of data from customers' online traffic that are processed with the help of AI and machine learning in order to detect malware and security threats. With the help of processed information from this constant data stream, F-Secure can refine its existing products and

develop new products. The more data the products that are in use produce, the more efficiently it can find vulnerabilities and the better existing products become. This is particularly true for endpoint protection products where the economies of scale are considerable.

## Corporate Security

F-Secure's corporate security business is comprised of product business, managed services in which product and service are combined, as well as pure service business. In 2019, product business accounted for 59 % of corporate security net sales and consulting for 41 %. Thanks to replicability, the product business is highly scalable. Managed services (MDR) are also well scalable in the long run. In consulting scalability is limited due to nature of the business. The transition from "cyber security as a technology" towards "cyber security as a process" also constantly blurs the line between products and services in F-Secure.

## Endpoint protection products (EPP)

A majority of F-Secure's corporate security net sales currently comes from selling of endpoint protection products (EPP), the demand of which is stable and the market is growing moderately. These products represent F-Secure's core competence, virus prevention, and are an integral part of the company's product portfolio. Products are sold with annual licenses of various lengths and as continuous subscriptions valid until further notice (SaaS). Traditionally, a majority of the total volume is fixed-term licenses whose renewal rates

are a key indicator for the company. Our view is that the renewal rates have constantly been on a good level. The market is, however, strongly shifting towards deliveries based on continuous monthly licenses.

The customer target segment for these products are small and medium sized companies and F-Secure's endpoint protection products are used by over 100,000 companies globally. The size category of annual contracts vary from hundreds of euros to some tens of thousands of euros.

Competition is tight in endpoint protection products and the field is quite established. F-Secure's competitors are numerous companies that offer antivirus software, like Symantec, Kaspersky, McAfee, Sophos and Trend Micro. F-Secure's customer base in this product group focuses heavily on small companies, where the role of the retailer is emphasized in the customer's purchase decision. Customers' know-how in cyber security issues is typically low and the purchase decision is often made based on the price or the retailer partner's recommendation. Comparisons made by research institutes that test security software also affect customers' purchase decision in this product group. F-Secure's endpoint protection products have performed very well in security tests within the industry (AV-Test, AV-LAB PL, V3) over the years and their ability to detect malware are of world class compared with the competition.

# Company description and business model 4/6

## Countercept (MDR)

F-Secure Countercept is the company's response to the "paradigm change" in the security market, with the transition from mere proactive prevention of malware and security breaches to rapid detection and response to security threats that have breached the protection. Countercept is a Managed Detection & Response (MDR) service by nature, with technology playing a major role.

The current Countercept product is comprised of the RDS solution launched in 2015 and Countercept, obtained in the MWR acquisition, which have been integrated into a uniform MDR turnkey solution in recent years. The integration of the technologies is now in the home stretch, making F-Secure's MDR solution very competitive.

MDR involves installing sensors in the customer's IT networks and endpoints, collecting and transmitting data to the F-Secure data centre where artificial intelligence and machine learning are used for detecting anomalies in the company's data traffic; these can be security threats that have penetrated the protection or external parties attempting to intrude into the customer's systems. F-Secure's data centre monitors the customers' IT environments 24/7 and responds to any security alerts as necessary upon detecting them. Countercept's sensors collect daily an enormous amount of data, and an increasingly clear overview of the customer's data traffic is obtained over time. With machine learning, the product becomes increasingly well customised for the customer's environment, thereby raising the customer's threshold of switching to a competing product over time.

Countercept is intended for companies requiring a high level of security, and the target group is companies with more than 1,000 employees. The contract values start from around EUR 100,000, and in larger customer accounts, they are clearly higher. Countercept is used by customers in the banking, media, energy and IT industries, among others.

F-Secure has high expectations of Countercept, and success in its sales will have a major impact on the growth of corporate security due to the large scale of the contracts. F-Secure sees growth opportunities in this product area for several years, and the company's investments in scaling up the solution burden the profitability of corporate security. Following the growth phase, MDR solutions have the potential to reach good profitability, with high customer retention bringing continuity to revenue and the service component scaling up with increased sales. MDR solutions are primarily sold through direct sales, and due to the large scale of the contracts and complex technology, sales cycles are typically long. In the short term, the COVID-19 situation hinders the sales of MDR solutions, but the post-corona outlook still seems promising.

The fast-growing MDR market has attracted a lot of competition, and according to Gartner's estimate, MDR solutions are already provided by more than 100 companies. F-Secure's main competitors mainly come from the USA, and they include CrowdStrike, Carbon Black, Cybereason and Rapid7. According to F-Secure, it stands out from the competition with its strong technological capability that is the inheritance of its antivirus

expertise, providing Countercept with an excellent ability to detect cyber attacks. In particular Countercept's technology stands out in responding to detected threats and the fight against on-going targeted cyber attacks. Moreover, in Europe the company gains a competitive advantage over its US competitors in geopolitical reasons potentially contributing to some customers' decision-making.

## Rapid Detection & Response (EDR)

Towards the end of 2018, F-Secure published an automated Endpoint Detection & Response (EDR) tool. The product is based on the same technology as Countercept, but does not include a similar service component, and through automation, it also scales down to the category of smaller companies.

EDR is an additional capability on top of companies' endpoint protection products (EPP), and this product area is merging with EPP products in the market. With regard to EDR, the biggest potential is in selling the product to F-Secure's extensive EPP customer base. Medium-sized companies in particular have the highest cross-selling potential, as the need for detecting and responding to threats is growing in this segment.

The operating principle of EDR is very similar to that of Countercept, but when the product detects a threat in the company's network, information is automatically relayed to the company's head of IT or reseller partners. The product also gives guidance on responding to the security threat.

# Company description and business model 5/6

The product suits companies of all sizes, but small and medium-sized companies are the main target group. The product also allows the end customer or reseller partner to send the data of the detected incident to F-Secure's MDR service centre, where F-Secure experts will help in resolving the case. Even though EDR is a purely software-driven product, it also generates service revenue for F-Secure with this feature.

Besides Countercept, F-Secure's EDR plays a key role in the growth of the corporate security. As a new product, EDR still accounts for a rather small share of F-Secure's revenue. If it succeeds, the product has significant growth potential, as the EDR market is still in an early development phase. Gartner, for example, has estimated that the EPP and EDR markets will merge and the number of endpoints with detection capabilities to multiply in the years to come. The values of EDR sales start from a few thousand euros, so there will need to be a significant number of deals for this to become visible in the company's figures.

F-Secure faces competition on a broad front in this product category as well; almost all competitors offering EPP products also offer EDR capabilities, in addition to which the developing and fast-growing market attracts new competitors. constantly attracts new players. The weakness we see is that the company entered the EDR competition with a slight handicap to its competitors.

## Radar and phishd

F-Secure offers two solutions for predicting threats, accounting for a very small share of the corporate security revenue. The vulnerability

management solution Radar assists in investigating vulnerabilities in corporate security. F-Secure obtained Radar in the nSense acquisition of 2015.

Phishd, obtained by the company in the MWR acquisition, is a behaviour management platform that can prevent phishing. In the big picture, F-Secure mainly faces large competitors focusing on these segments in both products, and the company does not intend to start competing directly against them. In fact, F-Secure considers that Radar's potential is found in integrating its functionalities with the company's endpoint protection products. This could provide the company with a competitive advantage over other antivirus-based competitors that do not offer corresponding capabilities. Phishd is offered as a continuous service alongside consulting.

## F-Secure Cloud Protection for Salesforce

F-Secure has developed security capabilities for scanning links and attachments for malware on the Salesforce platform. The product accounts for a small share of corporate security revenue, but following the favourable development in recent years, it already outweighs Radar and phishd. The product is distributed as an application directly via the Salesforce platform, allowing high profitability. The product still has a good growth outlook, and it does not have a proper competitor at the moment. However, there is a risk that Salesforce might build a proprietary solution to replace F-Secure's product.

## Cyber security services

F-Secure offers large corporations and other

parties with critical IT systems consulting in all areas of cyber security. Services offered by the company include security audits, cyber security stress tests (Red Teaming), strategic risk and security management, security in software development and response to security breaches and information leaks.

The focus of F-Secure's consulting business is on the most demanding security issues, but the service portfolio has expanded in recent years, as companies increasingly want more extensive turnkey solutions in cyber security services. The scale of the consulting business expanded significantly with the MWR acquisition, and F-Secure today employs more than 300 experts in consulting. The customer base of consulting is comprised of hundreds of large corporations.

The demand for consulting services has been strong in recent years, and growth has been restrained by the availability of experts. This year, however, the COVID-19 pandemic is weakening the demand temporarily as companies are cancelling and slowing down their cyber projects.

The consulting revenue for 2019 amounted to EUR 50 million, accounting for 41% of corporate security revenue. Consulting is still mostly project-driven business, but F-Secure also aims to conclude continuous consulting agreements with its customers.

In the company's biggest market areas in the consulting business (United Kingdom and the Nordic countries), operations are already partly being developed profitability first, but in smaller markets, operations are still clearly in a pure growth phase, which burdens profitability.

# Company description and business model 6/6

F-Secure's strategic goal is not to expand in the service business to compete with ordinary IT service companies, even though the company's service portfolio partly overlaps with them. More extensive cyber security service packages are offered by consulting companies (such as KPMG), IT generalists (such as CGI) and specialized players (such as Nixu).

F-Secure's ability to provide consulting services provides the company with a competitive advantage over companies that only offer cyber security products. In addition, consulting offers cross-selling opportunities with products. Consulting also polishes the F-Secure brand as a comprehensive cyber security provider.

## Consumer security

### Products

F-Secure products are used by millions of consumer customers across the world. The most important products in the current portfolio are: 1) endpoint protection product F-Secure Safe, 2) virtual privacy protection product F-Secure Freedom, 3) password management product F-Secure Key, 4) security router solution that protects all home smart devices F-Secure Sense and 5) new personal data protection product F-Secure ID Protection.

Sales of endpoint protection products (Safe) account for the majority of consumer security revenue. In direct sales, however, customers are increasingly switching to the bundled solution Total, that includes all of F-Secure's key consumer products, when renewing their subscriptions. This packaging of products is an important sales

growth driver for consumer security.

Launched in June 2017, Sense did not yet have a significant impact on consumer security revenue in 2017–2019, but F-Secure sees increasing interest in the product in the long term with smart devices becoming increasingly common in homes. The most potential route to more extensive commercial distribution of Sense is offering it as software installed in third-party routers. F-Secure has already concluded such agreements with several operators, but the base of routers containing Sense software is expanding at a slow rate, and the COVID-19 situation is not making it easier. In the short term, Sense will not therefore be becoming a driver of revenue growth, but the product has obvious growth potential in the longer term.

Last year, F-Secure launched the new ID Protection product for consumers. The solution combines monitoring leaked personal data with password management. Several operator deals have already been made regarding the product, and direct sales have also been commenced. Similar to Sense, the product will probably not have a major impact on revenue in the short term, but it is an interesting long-term growth option.

F-Secure's competitors in consumer EPP products are largely comprised of the same companies as in the corporate segment, as the product technologies are very similar. Competition in consumer endpoint protection products is made tighter by the fact that there are also several free antivirus software products available to consumers (e.g. Avast, Avira, Windows Defender).

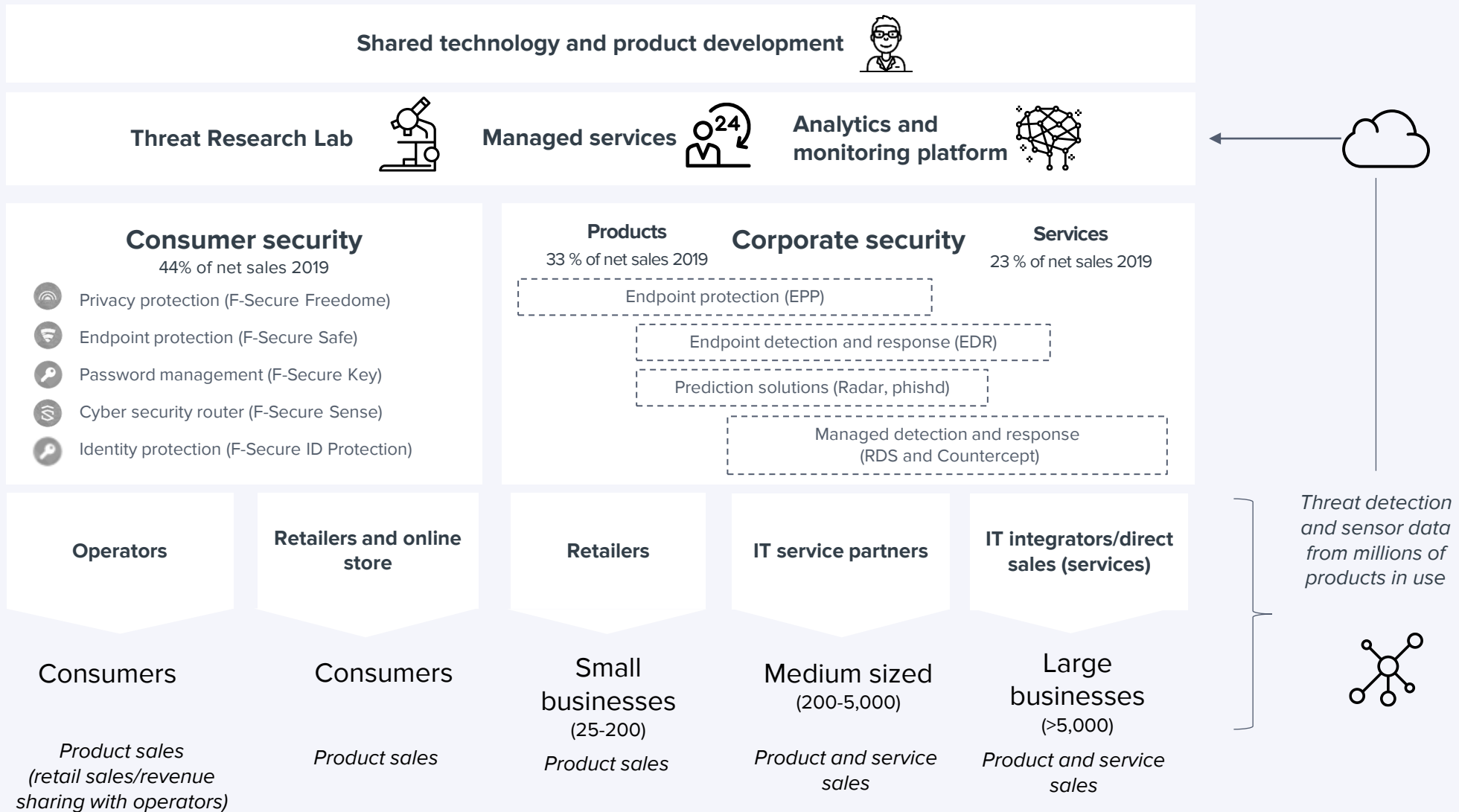
### Operator channel

F-Secure started building a sales channel through operators already at the beginning of the 2000s and its operator network is clearly the largest compared to other security companies. In consumer security, operators sell F-Secure's products as part of their own continuous cyber security packages. Through the operator channel, F-Secure receives extensive distribution and volume for its products, and, thus, the replicability and scalability of the products enable good profitability even though the operators take a rather large share of the gross sales of the products as they are responsible for the lion's share of product marketing. For operators, co-operation with F-Secure is also fruitful as by offering cyber security packages in connection with broadband subscriptions operators have, in addition to profitable additional sales, been able to improve the customer loyalty and satisfaction of their subscriptions. In our opinion, the success of F-Secure's product among operators is based on the fact that it solves two of the core problems of the operator business (average price and customer churn).

### Direct sales channel

Consumer products are also sold through many retailers operating physically and online. In addition, the company is increasingly selling its products through its own online store, which means there are no middlemen between F-Secure and the end customer. The competition on the market is extremely tough and customer acquisition requires considerable marketing investments, and various free products and freemium models make the consumer market challenging to reach through direct sales.

# F-Secure's business model



# Investment profile

## Growth in corporate security creates value

F-Secure is difficult for an investor to perceive in the company's current development phase, as the share combines steady cash flow business (consumers) and cash flow-negative business (corporate customers) still strongly in the investment phase, and the company does not report on the segment distribution with regard to the profitability of these functions. In practice, the first is priced in the stock market through earnings-based multiples and profit margin. The latter is priced based on sales multiple and revenue growth rate. In addition, corporate security is comprised of three businesses different in terms of profile and development phase: EPP products (slow growth, good profitability), consulting (good growth, mediocre profitability) and MDR/EDR products (strong growth, loss-making). These product/service areas have to be priced using very different valuation multiples due to the different growth, scalability and profitability profiles. The company is therefore not a pure growth company, but also not a technology company in the "mature phase".

F-Secure's own goal is to continuously balance between growth investments and profitability, depending on what is optimal in terms of shareholder value. We find the approach reasonable, but difficult for shareholders to interpret. We argue that, the key drivers of the company's value creation are the growth rate (of corporate security) and the entire company's operating margin; a strong growth rate compensates for poor profitability and vice versa. Currently, the stock market values growth rate very highly, but strong profitability will be appreciated more as the market matures. F-

Secure's combination of growth and profitability currently seems modest compared to the growth companies of the sector, which also explains the low revenue-based valuation of the company. To our minds, a sustainable increase in the valuation requires accelerating growth, in which the new corporate security products play a central role.

## Strengths and drivers

- **Growth in MDR/EDR products** is at the core of value creation, as the market for these products is still in its early stages, it is growing at a very fast rate and market shares are now being distributed.
- **A scalable business model with strong customer retention** allows for excellent profitability in the long run.
- **Success in unifying the product portfolio** would facilitate the company's transition in the value chain towards larger customers and accelerate the growth in corporate security. A more unified product portfolio would also provide the company with a competitive advantage.
- **New product areas**, such as the consumer products Sense and ID Protection, can provide growth potential in the long term.
- **A strong and established position in endpoint protection** provides good resources for expanding F-Secure's core competence and technology to new segments and sell new solutions to the existing customer base.

## Key risks and weaknesses

- **The sector is potentially over-invested**, which has led to increased competition. A gold rush of new companies may lead to there not being enough bread for all to share, in spite of the strongly growing market. This is an obvious threat in F-Secure's established as well as new product areas.
- **Decrease of the high valuation levels of the sector** would probably also have a negative impact on the market valuation of the F-Secure share.
- **Threat of competition in consumer security and slow growth** due to free antivirus software. In spite of these threats, which have been evident for years, consumer security seems to remain a very healthy business.
- **Sales channels in corporate security** for the medium-sized and large enterprise market have been undergoing a building phase in recent years, and this has taken longer than expected, which has also been visible in organic growth being slower than expected. Now, the pieces are falling into place with regard to sales partners, which should support post-COVID-19 growth.
- **The transformation into a cyber security company is already in the home stretch, but still a little unfinished.** The change requires developing the product portfolio and investments in sales, which will burden profitability in the short term. Moreover, F-Secure is still not particularly strongly perceived as a corporate security solution provider as a brand.

# Investment profile

1.

**Strong growth focus in corporate security**

2.

**Stable growth and good profitability in consumer security**

3.

**Scalable and continuous business model**

4.

**Large and growing market**

5.

**Strong cash flow provides capacity to invest in corporate security growth**

## Potential



- In corporate security, strong growth now generates shareholder value
- Accelerating growth and competitive edge through renewal and integration of product portfolio
- Strong demand outlook on the market
- Strong and stable business in consumer security

---

## Risks



- The industry is potentially over invested, which has led to a clear increase in competition in the past few years
- Failure with growth investments
- Decrease of the high valuation levels in the sector could have a negative effect on the share
- Competitive threat in consumer security and slow growth





# Industry 1/4

## Market

### Market definition, size and growth

Cyber security companies are solving one of the biggest problems of the digitizing society. Big problems always also mean big business opportunities, which makes the market extremely interesting, dynamic and rapidly growing.

Cyber security refers to processes, technologies, solutions and services that protect companies' and other organizations' or individual users' data against criminality that occurs in electronic networks. Cyber threats can be divided into three categories: 1) criminality that aims at financial profit, 2) hacking that aims at disrupting companies' or governments' activities, and 3) spying that aims at gaining a competitive business advantage or discovering government security secrets. The number of cyber threats and their intelligence is constantly growing and the market is, in practice, driven by an endless race between criminals and cyber security technologies and processes.

The cyber security market is developing at a fast rate, and estimates of the size and growth of the overall market still vary highly. According to an estimate by the market research company Gartner, the global cyber security market will grow by approximately 2% in 2020 to USD 124 billion. This year, the COVID-19 situation will slow down the growth rate, but the market is estimated to grow at a rate of approximately 8% in 2018–2024 on average.

### Market segments

The target groups of the cyber security market

can be roughly divided into three parts in a pyramid model based on the intelligence of attacks and technologies. The intelligence of attacks and technologies also broadly correlates with the size of the customer organizations as the biggest organizations and state administration are typically the main targets of cyber criminals. For organizations at the top of the hierarchy, solutions that have been created for the masses at the bottom of the hierarchy do not offer sufficient protection levels. Correspondingly, the solutions focusing on the top levels of the hierarchy are too expensive for organizations whose activities do not require a high protection level. The development of new technology focuses on the more demanding top level segments after which the technology is duplicated to the lower levels for broader segments.

The top of the cyber security market is represented by state espionage and the defense industry. This is a niche market from the viewpoint of cyber security companies but it represents the highest technology and level of expertise and is thus important. The largest volume of the market is found in the center part of the pyramid that covers targeted attacks. In this case, the primary target group is in practice all large organizations and public administration, and in particular the actors whose activities include critical activities in terms of security of supply (like energy, banks and operators). Crucial in this target group is that its size is constantly growing as cyber security threats expand, which also expands the market for demanding cyber security solutions.

In the big picture, market growth is the result of 1) cyber security issues playing an important role for an increasing number of industries when planning

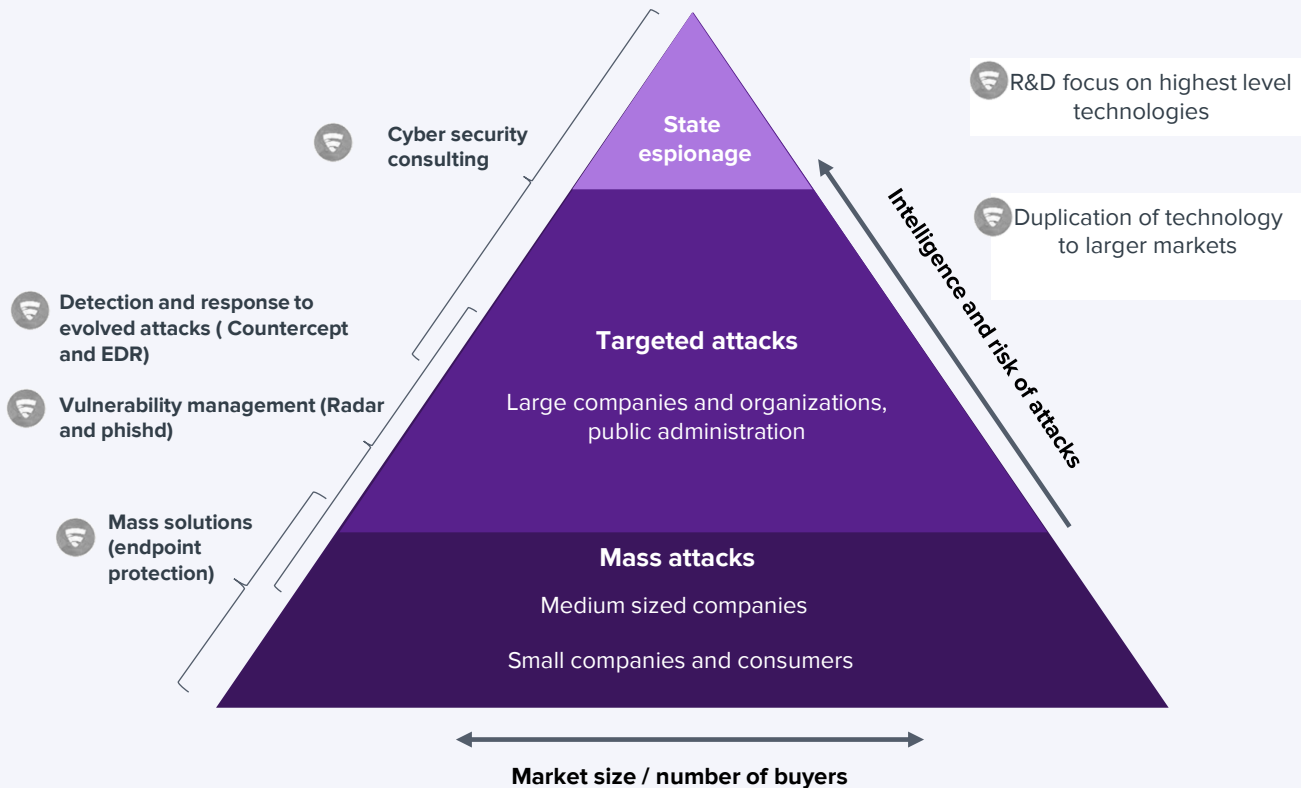
new digital businesses and 2) the rising trends on the IT markets (industrial Internet of things, social media, digital commerce) force organizations to pay more attention to cyber security. In the segment of targeted attacks (large and medium sized organizations), cyber security cannot be solved only with mass solutions. The cyber security budgets of companies in this segment are annually roughly around EUR 1 to 5 million, which makes this segment attractive to companies that offer cyber security products and services. F-Secure has expanded into this segment in recent years through acquisitions (consulting service) and a wider product portfolio (e.g. Countercept).

The most important segment for F-Secure at the moment is the lowest level of the triangle that includes small and medium sized companies and consumers. For small companies and consumers, the main thing is to be protected against mass attacks, which can be done with regular “off the shelf” cyber security products like endpoint protection products and firewalls. A majority of F-Secure's net sales still comes from endpoint protection products.

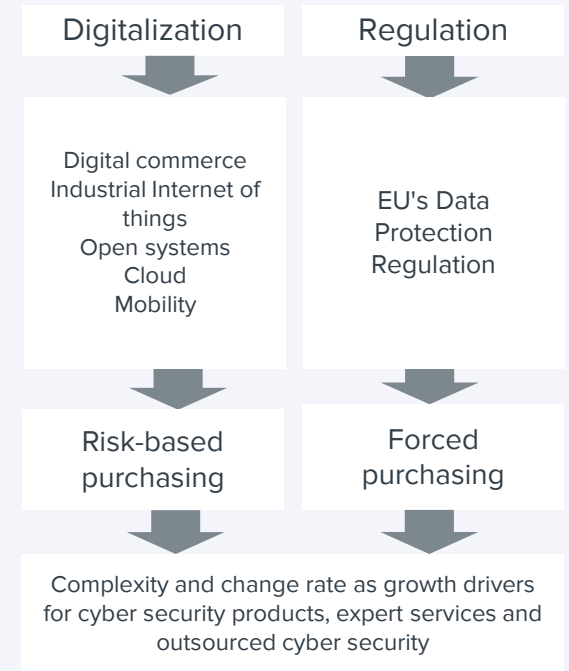
Among medium sized companies the need for higher cyber security than mere endpoint protection is growing, but the cyber security budgets (EUR 0.1 to 1.0 million) are clearly lower than in the large company segment, which means that buying of the best technologies or managed/outsourced cyber security services is not necessarily possible. Especially the rapid detection and responding to threats that have passed endpoint protection is now emphasized in the segment of medium sized companies.

# Industry

## Distribution and operating logic of the cyber security market



## Market drivers



# Industry 2/4

## Market sub-segments for F-Secure

F-Secure's potential market can be examined more closely through the company's product and service selection. The market for consumer security products was EUR 5.0 billion in 2019 and it is expected to grow at an average annual rate of 3% in 2019 to 2022. The slow growth on the consumer security market is explained by the popularity of constantly evolving free antivirus solutions (e.g. Windows Defender) but growing product areas can be found, for example, in privacy protection and in solutions designed to protect smart equipment in the home.

The market growth of corporate endpoint protection (EPP) products is slow but steady. At the same time, the EPP market is undergoing a transformation with new automated threat detection and response products (EDR) unifying with EPP products. Gartner, for example, already bundles these products in the same category.

F-Secure's estimate of the size of the EPP/EDR market relevant to the company is approximately EUR 7 billion, of which slow-growing EPP products still account for a majority. Due to the strong growth of EDR products, these product areas on the whole are estimated to grow by approximately 9% annually in 2019–2022. The growth is driven by the fact that security breaches targeting companies are not often detected for months, which has shifted the focus from merely protecting against security breaches to detecting and responding to them faster. Large enterprises can purchase detection capabilities as a managed

service (such as F-Secure Countercept), but for smaller companies in particular, a pure product solution is the only economically feasible solution.

The Managed Detection & Response (MDR) service market is also only taking shape, and estimates of market size and growth are indicative. F-Secure currently estimates the value of the MDR market at approximately EUR 0.6 billion, and it is expected to grow at a strong annual rate of some 20% in 2019–2022. Gartner has estimated that approximately 50% of organisations will be using MDR services by 2025. F-Secure aims to take its share of the rapid growth of this market with its Countercept solution. The fast-growing market has also attracted a lot of competition, and Gartner estimates that there are already more than 100 MDR solution vendors in the market.

With regard to cyber security services, F-Secure has estimated its relevant target market to be approximately EUR 20 billion, and the market is expected to grow by approximately 7% annually in 2019–2022. Currently, the company has globally 11 offices on four continents, and the financial sector is the biggest customer segment.

## Weights, size and annual growth rate (CAGR 19-22) of F-Secure's market segments

<b>Consumer security</b> → <i>Significant product area</i>	<b>€5,0 bn.</b> ➔ 3 %
<b>Corporate Endpoint protection (EPP) and Endpoint detection and response (EDR)</b> → <i>EPP: Significant product area</i> → <i>EDR: New, important product area</i>	<b>€7,0 bn.</b> ➔ 9 %
<b>Managed detection and response (MDR)</b> → <i>New, important product area</i>	<b>€0,6 bn.</b> ➔ 20 %
<b>Cyber security services</b> → <i>Important, growing area</i>	<b>€20,0 bn.</b> ➔ 7 %

# Industry 3/4

## Market drivers

In our opinion, the cyber security market is still emerging and will develop strongly over the next few years, which is why current market estimates are even at best only indicative. Market growth will probably be steady and strong and accelerate pushed by digitalization investments. In addition, constant news of serious hacking (risk-based purchasing) and pressure created by regulations (forced purchasing) will boost market growth. At the top level, growth is, in practice, driven by two forces: regulation and threat scenarios.

The commonly recognized mega trends in the IT world like mobility, cloud, industrial Internet of things, social media and digital commerce are strongly linked with cyber security. In many of these areas, the barrier for creating new applications, products and digital services is cyber security challenges. These challenges are related, for example, to privacy protection, e-commerce or security. One mega trend worth mentioning is also open systems (like Android) becoming more common. This makes the market more attractive from a criminal's viewpoint than when companies still operated mainly in their own individual closed environments.

Building of new digital services requires that companies and governments solve the challenges related to cyber security in advance. This means that the demand for cyber security related products and services is also supported by the fact that cyber security is increasingly becoming a critical and integral part of any new IT system,

digital service or product. This means that problems related to cyber security cannot be solved simply by acquiring cyber security software and equipment off the shelf but solving of cyber security also requires the use of high-level expertise services. Due to these market drivers, F-Secure's business has also been changing in recent years where the company has transformed from an endpoint focused antivirus company to a more versatile provider of cyber security products and services in the corporate segment.

## Consumer security changing

In consumer security, the changing endpoint portfolio has been visible as a slight drop in antivirus software for PCs but, as a whole, the number of devices connected to the web is growing rapidly in consumers' homes. This provides growth opportunities for new cyber security products that protect smart devices in the home even though PC driven antivirus software sales is a challenging market. In consumer security, the nature of the market is changing rather than the market faltering with PC antivirus. For example, Windows' own cyber security is cannibalizing conventional cyber security but this does not solve the consumer's problem of how to protect several different endpoints. Thus, there is a natural need for F-Secure's packages for comprehensive consumer solutions as the array of endpoints and operating systems is vast and constantly changing. Gartner estimates that the number of consumer devices connected to the web will grow from 5.2 billion in 2017 to 12.8 billion by 2020.

## EU's Data Protection Regulation

EU's Data Protection Regulation (GDPR), that entered into force in May 2018, has clearly increased the demand for cyber security services. The regulation imposes new obligations on organizations that handle personal data. Through EU's Data Protection Regulation organizations are, for example, obliged to report any breach of security. The authority that supervises the regulation can impose sanctions if the regulation is breached. The sanctions can be massive, as for more serious breaches the fine is EUR 20 million or 4% of the company's annual net sales, which is intended to make companies take the new regulation seriously. GDPR also supports F-Secure's product business as the regulation means that companies have to build better capabilities to detect realized security breaches

# Industry 4/4

## Industry consolidation continues

The growth outlook of the cyber security market has attracted a lot of investment in the sector during recent decades, which can be seen in the rapid growth in investments in cyber security companies and high merger and acquisition activity in both North America and Europe. The level of activity is indicated by the story of F-Secure's competitor Carbon Black. Funded by private equity investors, the company was listed at a high valuation (EV/S 6.6x) in 2018, and only a year later the company was acquired at even higher multiples (EV/S 9.1x).

On the whole, the cyber security market is still very fragmented and the consolidation will unavoidably continue, as in spite of market growth, there is not enough room for all of the current players in the market if it begins to mature in the future. We have been concerned already for several years about the industry being over-invested. To our minds, this has been visible in the tightening of competition in the sector in recent years, and it can be reflected increasingly strong in the profitability of the sector going forward, with new players entering the competition with new solutions that aim to solve cyber security issues even more efficiently and/or affordably than competitors. Some of the sector players are still heavily loss-making, and the external financing on which they depend will stop if they are not able to show growth or profitability.

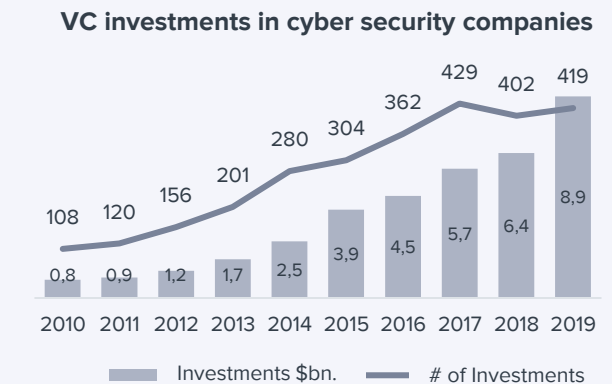
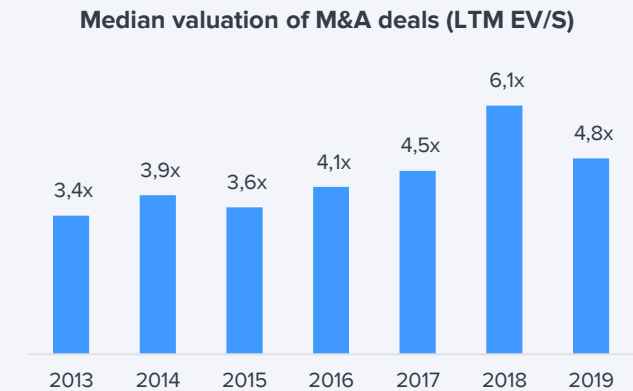
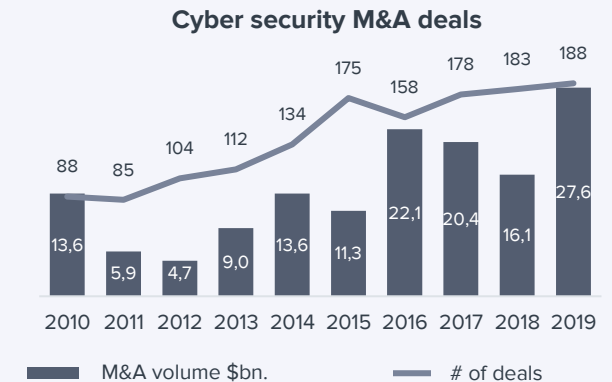
The investment pressure in the sector has resulted in the valuation of corporate acquisitions remaining high, which in part makes it difficult for F-Secure to complete acquisitions that generate

shareholder value. The EV/Sales ratios of acquisitions have at best risen to 5x for service companies and to 10x for product companies. Currently the stock market is pricing the hottest cyber security companies with over 30x EV/S-multiples.

For service companies, acquisitions are the only way for many players to get a piece of the market due to the lack of available expertise or they can act as an alternative to recruitment. In this case, the target is often small specialized players. In acquisitions of product companies, the buyers can seek technologies that complement their product portfolio and in larger M&A deals the aim is to generate synergy, for example, in terms of product development, sales and distribution. Consolidation pressure also increases because, instead of point solutions, cyber security is increasingly becoming deliveries of turnkey solutions and process deliveries, which forces actors to integrate their offerings.

We believe that F-Secure will continue to be part of the industry consolidation as a buyer but currently the debt from MWR-acquisition and the high valuation levels in the sector hinder acquisition plans to some degree.

The crucial question for investors is whether it is worth investing in the sector after the investment boom and whether it is already too late. We feel there is no more room to stretch the valuation multiples of the market and value must now be created from the growth and profitability of the companies in the sector.

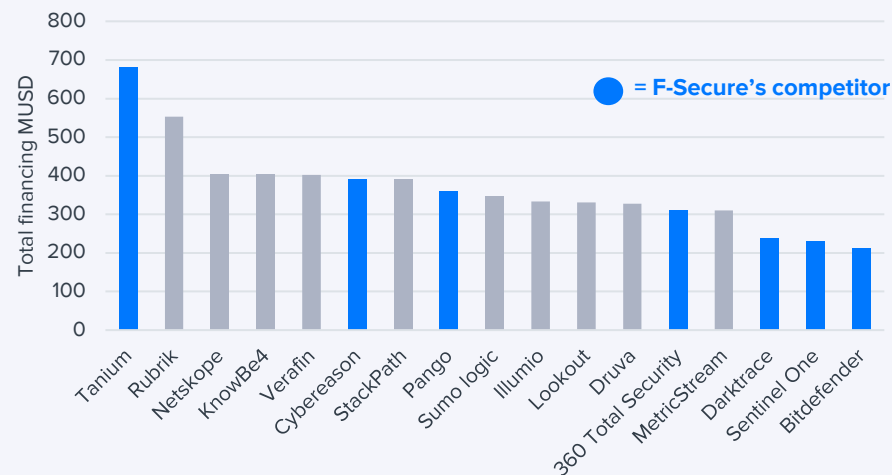


# M&A and investments in the industry

## Highlighted acquisitions in the sector

Date	Buyer	Target	EV (MUSD)	EV/S
2/2020	Advent	Forescout	1 884	4,8x
1/2020	LexisNexis Risk Solutions	ID Analytics	375	7,8x
12/2019	F5 Networks	Shape Security	1 028	17,1x
11/2019	Open Text	Carbonite	1 400	3,4x
10/2019	Thoma Bravo	Sophos	3 948	5,1x
8/2019	Broadcom	Symantec Enterprise	10 700	4,6x
8/2019	Vmware	Carbon Black	2 100	9,1x
5/2019	Orange	SecureLink	576	2,1x
2/2019	Carbonite	Webroot	618	2,9x
11/2018	BlackBerry	Cylance	1 500	11,5x
10/2018	Thoma Bravo	Imperva	1 800	5,2x
8/2018	Shearwater Group	Brookcourt Solutions	40	1,4x
8/2018	Cisco Systems	Duo Security	2 350	>20x
6/2018	F-Secure	MWR Infosecurity	110	3,1x
12/2017	Thales	Gemalto	5 541	1,8x
11/2017	Warburg Pingus	Cyren	119	3,8x
11/2017	Thoma Bravo	Barracuda Networks	1 405	3,8x
7/2017	Open Text	Guidance Software	245	2,1x
2/2017	Sophos Group	Invincea	120	4,8x
2/2017	Palo Alto Networks	LightCyber	105	10,5x
1/2017	Keysight Technologies	Ixia	1 603	3,3x
11/2016	Symantec	LifeLock	2 362	3,6x
9/2016	TPG	McAfee	4 200	2,5x
7/2016	Avast	AVG	1 463	3,4x
6/2016	Symantec	Blue Coat	4 722	7,9x
1/2016	FireEye	iSight Security	269	6,7x
11/2015	NCC Group	Fox-IT Group	141	4,9x
6/2015	F-Secure	nSense	20	2,6x
4/2015	Singtel	Trustwave Holdings	786	3,6x
4/2015	Marlin Equity Partners	Fidelis Cybersecurity	200	3,3x
3/2015	NCC Group	Accumuli	83	2,4x
12/2014	Belden	Tripwire	710	6,0x
7/2013	Cisco Systems	SourceFire	2 194	7,5x
		<b>Median</b>	<b>458</b>	<b>3,8x</b>
		<b>Average</b>	<b>1211</b>	<b>5,1x</b>

## Cyber security companies that have raised most VC money



## Cyber security IPOs

Company	IPO year	EV/S at IPO (LTM)	2020e EV/S
Okta	2017	8,3	32,0
SailPoint	2017	6,2	9,5
Zscaler	2018	10,6	29,7
Avast	2018	7,6	8,6
Tenable	2018	8,3	8,4
Solarwinds	2018	7,9	7,5
Tufin	2019	4,0	2,3
Crowdstrike	2019	26,0	62,6
Cloudflare	2019	18,3	27,6
Ping Identity	2019	5,4	9,9

# Competition

## Growing market attracts a lot of competition

Fast growth on the cyber security market and the sector's high investment rates have shaped the competitive field heavily in recent years. The competitive field is very fragmented and the market is still seeking its form. A growing share of the market growth is grabbed by new cyber security start-ups that often are specialized in a particular niche segment of cyber security with their services or products.

Some of the new cyber companies established last decade have already been able to grow into a size category in which they have begun to capture market shares from the more traditional players of the sector. For example, the extremely fast growth of the US company CrowdStrike in recent years has been visible in the market shares of traditional actors in the endpoint protection product market in large enterprise customers.

Traditional actors, and those who have been on the market longer, try to make their portfolio more comprehensive to be able to respond to the competition and this has accelerated consolidation in the industry as bigger players buy smaller product and service companies to strengthen their portfolio.

In the big picture, global IT sector giants like IBM, Microsoft and Cisco, whose cyber security net sales are in the billion range also operate on the market. Microsoft in particular has raised its head in the enterprise sector with good products and extremely strong distribution power.

We have listed F-Secure's competitors in different product categories on the next page.

## Competitive factors on the cyber security market

In cyber security products, the quality of the product

and its ability to prevent or detect malware is naturally emphasized as a competition factor. Detection and response capabilities will be an integral part of endpoint protection and, without them, a conventional antivirus software quickly drops out of the competition. In endpoint protection products, the barrier of entry has, however, lowered as AI and cloud environments offer the required algorithms and capacity for antivirus software. Customers' confidence in the product, success in various tests and the brand become increasingly emphasized as a competition factor on the markets.

The role of distributions channels is also important in the competition as it is difficult for a product business that operates without distribution channels to generate volume and thus scalability. Especially in corporate security, products are sold mainly through service partners and the product solutions must be built so that they also enable the possibility for the service partner to build value-added services on top of the product.

In medium-sized and large enterprises, the uniformity of the product portfolio is emphasised as a competitive factor, as this customer base prefers to purchase an extensive comprehensive solution instead of several point solutions. Nevertheless, the market is still very fragmented, and there are still lots of cyber security needs outside F-Secure's solution offering. According to F-Secure's estimate, a company with some 2,000 employees typically uses 20–30 different security solutions, of which less than one-third can be obtained from a single vendor at best.

## F-Secure's competitive advantages

F-Secure's strong brand, especially in Northern Europe, is based on the company's long-term and

solid expertise in endpoint protection technologies. A testament of this are the numerous awards the company's endpoint protection software have won in malware detection tests. F-Secure's brand is particularly strong in endpoint protection products among small and medium sized companies. The company still has work to do with its brand on the corporate side in order for the company to be perceived more as a comprehensive cyber security house whose solutions also cover the cyber security needs of larger companies. F-Secure's consulting services help polish the company's brand on the corporate side when the world class cyber security experts solve the trickiest cyber security problems. The consulting business also provides the company with a competitive edge against companies who only offer cyber security products and helps the company position itself more strongly as a comprehensive cyber security company.

The company's extensive retailer channel in corporate security and the operator channel in consumer security help offer the company a competitive advantage especially among small companies and consumer customers. When moving to larger customers in corporate security, the company still must develop its partner network in order to open an efficient sales channel in this segment.

In Europe, the company has competitive advantage against its competitors in that geopolitical factors may affect the decision making of some customers.

According to our view, F-Secure has a technological competitive advantage also in new corporate solutions (Countercept) in addition to antivirus protection. This is in part proven by the existing strong customer accounts with a high level of requirements, such as the world's biggest banks.

# Competitive field

F-Secure's competence areas	Weight on F-Secure's business operations and strategy	Main competitors	Other competitors
Endpoint protection (EPP)	✓✓✓	<p>SOPHOS TREND MICRO McAfee</p> <p>Symantec. KASPERSKY panda</p> <p>Bitdefender</p>	<p>FireEye SentinelOne cybereason TANIUM</p> <p>CYLANCE ESET CROWDSTRIKE</p> <p>Carbon Black. GUIDANCE SOFTWARE Microsoft</p>
Endpoint detection and response (EDR)	✓✓	<p>DARKTRACE FireEye</p> <p>CROWDSTRIKE Carbon Black.</p> <p>TREND MICRO Symantec. SOPHOS</p>	<p>TANIUM KASPERSKY cybereason</p> <p>CYLANCE McAfee GUIDANCE SOFTWARE</p> <p>panda SentinelOne</p>
Managed detection and response (MDR)	✓✓	<p>DARKTRACE Carbon Black.</p> <p>CROWDSTRIKE RAPID7</p>	<p>FireEye SentinelOne</p> <p>cybereason paloalto NETWORKS Microsoft</p>
Cyber security services	✓✓	No individual main competitors	<p>FireEye RAPID7 NIXU cybersecurity.</p> <p>CROWDSTRIKE KASPERSKY nccgroup</p> <p>Symantec. McAfee Secure@Link CGI</p>
Vulnerability management	✓	<p>RAPID7 Qualys.</p> <p>tenable</p>	

Source: Inderes, F-Secure, Gartner



# Strategy 1/2

## Transformation into a cyber security company

In 2015, F-Secure started, in line with its strategy, evolving from an antivirus company focusing on consumer business towards a more comprehensive cyber security company, whose business focus lies on the rapidly growing corporate security markets. The change was launched by selling the consumer focused cloud storage business and acquiring nSense that focused on corporate security, which expanded the corporate security portfolio and know-how considerably.

In the era of the CEO Samu Kottinen that took over in 2016, the change has accelerated and the company's focus areas have been pinpointed to developing detection and response solutions for malicious hacking, where the company sees considerable growth potential. Cyber security consulting has also been strengthened with two smaller acquisitions in 2017.

The MWR acquisition in 2018 resulted in a giant leap in F-Secure's corporate security growth strategy and transformation process. The weight of consulting in the company's business grew significantly, and the Countercept product acquired strengthened the company's offering of detection and response solutions. The integration of MWR into F-Secure is now complete, and it went as well as expected.

On the whole, the company's transformation is already in the home stretch, and it has primarily gone well so far. To our minds, however, the development of the sales of the new MDR and EDR solutions could have been faster in recent years, which has been reflected in organic growth being slower than expected. Harmonising the

product and service portfolio and developing the reseller channel has taken longer than expected, which we estimate to be the primary reason for the development falling short of previous expectations. According to our view, the sales channel is now starting to be in order, which should begin to reflect in growth in the new products. In the short term, however, the COVID-19 situation is slowing down the sales, especially due to the long sales cycles of MDR solutions.

## Financial targets

F-Secure does not currently have any published long-term financial targets. Previously, the company aimed to grow its corporate security revenue at an annual rate of over 15% in 2018–2021, but the target was removed last December at the same time when slightly lowering the growth outlook of corporate security for 2019. In the light of our current estimates (CAGR 18–21: ~16%), the company is about to reach its previous objective. Approximately one-half of the growth was generated by the MWR acquisition.

Growth investments burden the company's profitability in the short-term but if the growth strategy is successful, the company's profitability is estimated to rise clearly from the current level thanks to a scalable business model. We feel the company should be able to reach at least an operating profit margin of 15 to 20% in the long-term thanks to the scalable product business. The company has announced that it is constantly seeking the right balance between growth investments and profitability in order to optimize shareholder value generation in the long-term.

If it wanted to, we believe that F-Secure could now generate excellent profitability by shifting the

business focus to a “cash cow stage”. The eternal paradox for technology companies is, however, that this would destroy the long-term competitiveness of the business. Taking into account the investment wave currently aimed at the industry, established cyber security companies probably have to further increase their stakes to even maintain their current positions. The market is now growing quickly in the corporate security and the competition for market shares is happening in new product areas. We feel that aiming for growth at this stage is smart for F-Secure and, if successful, will generate shareholder value.

In consumer security, F-Secure's risk taking is more modest and the main focus lies on profitability instead of growth, as the growth outlook for the consumer markets is far weaker than in corporate security. Consumer security, however, plays an important role in implementing F-Secure's strategy as it generates good cash flow, which enables investments on the corporate side.

F-Secure's dividend policy has been to distribute around one-half of the company's annual operating profit to shareholders. The company paid also extra dividends on the 2014 to 2016 result. In 2018-2019, the company decided to deviate from the dividend policy due to the liabilities added to the company's balance sheet as a result of the MWR acquisition and the company's reported result remaining low due to growth investments. F-Secure's value creation is based on growth in corporate security, and the company is not profiled as a dividend-stock.

## Strategy 2/2

To our minds, it is more reasonable for the company to use its generated cash on repaying the debt taken out for growth investments than paying out small dividends, and we expect that the company will not pay dividends next spring, either. After this, we estimate that the dividends will reflect the company's dividend policy, which means that the dividend yield will be low as growth investments will continue to burden earnings.

### Acquisitions

Acquisitions are part of F-Secure's strategic tools and the company has boosted its transformation into a cyber security company with acquisitions in recent years.

F-Secure's aims for acquisitions can be divided into three parts. In the consulting business, acquisitions are made to increase geographical coverage or to acquire experts, in which case the acquisition also acts as an alternative to recruitment. Examples of these are the small (EUR 3.5 million in total) acquisitions (Inverse Path in Italy and Digital Assurance Consulting in Britain) in 2017.

Secondly, F-Secure looks for small acquisitions on the product side that would complement the current product portfolio. In 2015, F-Secure acquired the Finnish-Danish service company nSense for EUR 18 million which, in addition to cyber security consultants, gave the company a product for vulnerability management (current F-Secure Radar). In our view, this acquisition was successful and it accelerated the company's transformation and strengthened several targeted

competence areas.

In 2018, F-Secure acquired MWR InfoSecurity, a British company with some 400 employees and net sales of approximately EUR 31 million. The purchase price paid in cash was GBP 80 million (EUR 91.6 million).

In addition, the transaction involved an earn-out of a maximum of GBP 25 million (EUR 28.6 million), of which GBP 5 million was ultimately paid. The terms of the earn-out were strict to begin with, and thereby the earn-out being at the lower end of the range was no surprise.

EV/Sales multiple of the acquisition was approximately 3,1x, which can be considered to be neutral with regard to F-Secure's own valuation at the time of the transaction (EV/S for the past 12 months: 3.1x) or transactions completed in the sector. The transaction increased F-Secure's geographical coverage, significantly strengthened the consulting business (more than one-half of net sales from services) and added strategically important technologies complementing the detection and response solutions to F-Secure's product portfolio (Countercept).

The third option is a larger acquisition with which the company would aim for benefits of scale or would get a sales channel for its products to medium sized and large companies. After the MWR transaction, F-Secure's balance sheet position (Q2/20: equity ratio 46%, gearing 14%) would not be sufficient for carrying out major acquisition, but according to our view, the company is ready to raise both equity and debt financing should a suitable acquisition target be

found. We do not expect the company to carry out major M&A in the near future, as the digestion of debts from MWR transaction is still in progress in part. In addition, we estimate that major acquisitions are slowed down by the currently high valuation levels in the cyber security sector.

# Strategy



## Main objectives of the strategy

### Realized

- Strengthening of corporate security with successful acquisitions in service business
- Strengthening the product portfolio of corporate security (RDS, Countercept, EDR, Radar)
- Corporate security on a clear growth path
- Competitiveness of consumer business remains strong
- Adapting the organization and culture to correspond with the growth strategy

### Near future, 1 to 2 years

- Successful ramp-up of the EDR product
- Strengthening of the own sales organization in order to develop the retailer channel to the needs of larger companies
- Integrating individual products and services to meet the needs of larger customers even better
- Strengthening the brand image from a antivirus company to a cyber security company

### The next 5 years

- Creating a strong distribution channel and partner network for medium sized and large companies
- Maintaining the consumer business vital and competitive
- Ability to continuously strengthen the product and service portfolio in line with market trends and technology shifts organically or through acquisitions

# Financial position

## Growth and earnings development 2015-2019

In 2015, F-Secure shifted the focus of its operations more strongly to security solutions with its new strategy and divested its cloud storage business at a price of EUR 52 million (F-Secure paid EUR 30 million for the business in 2009). After this, F-Secure began to invest significantly in the fast-growing corporate security market, and it has pursued growth both organically and through mergers and acquisitions. After this, corporate security revenue has increased from EUR 46 million in 2014 to EUR 122.5 million by 2019, with the average annual growth rate being 21.6%. The growth is divided roughly equally between organic and M&A growth. In consumer security, the company has grown at a moderate annual rate of approximately 0.6% in the meantime, and revenue from consumer security was EUR 94.8 million in 2019.

The company accelerated its growth investments in accordance with its strategy in 2017-2019, which is visible in the company's profitability. The adjusted EBIT margin was 5.6% and 4.4% in 2018-2019 having been 12.1 to 15.1 % in 2015-2016.

The biggest growth investments have now been made, and this will be visible in the form of improving profitability starting from 2020.

Depreciation of intangible assets relating to the MWR acquisition (estimated to amount to slightly under EUR 4 million annually) will burden the reported earnings in future years.

## Cost structure

F-Secure's gross margin was 77% in 2019. The company records the costs of providing cloud-based services and customer support, direct costs of providing cyber security services and royalty

payments as direct sales expenses. In the long term, we estimate the gross margin to increase with the share of new corporate security products of the company's net sales increasing.

Sales and marketing expenses amounted to EUR 106 million, or 49% of the company's net sales, in 2019. The cost item is comprised of personnel wages and salaries, marketing expenses, and other operating expenses. According to our estimate, the sales and marketing expenses cost item is downward flexible the best if F-Secure decides to optimise profitability instead of growth.

R&D expenses amounted to EUR 39.5 million, or 18% of the company's net sales, in 2019. We do not estimate the relative share of the cost item to be significantly downward scalable in the long term. Personnel expenses account for the majority of R&D expenses. F-Secure capitalises R&D expenses quite moderately, with capitalised expenses amounting to EUR 6.2 million in 2019 (2018: EUR 4.7 million).

Administrative expenses amounted to EUR 28.2 million, or 13% of net sales, in 2019. Adjusted for the extraordinary items regarding MWR transaction (9,5 MEUR), the expenses were 8.6 % of net sales. The relative share of administrative expenses of net sales will, according to our estimate, decrease slightly in the future with growing net sales.

## Cash flow

F-Secure's business generates good cash flow and the operational cash flow has been between EUR 22 to 29 million per year in 2013 to 2017. Cash flow decreased to EUR 6.8 million in 2018, mainly due to the MWR acquisition and its integration. In 2019 cash flow improved to 18.5 MEUR. Cash flow is supported by advance payments from customers, as, in many cases, the payments for multiannual agreements are

received in advance at the start of the agreement period. Thanks to advances received, F-Secure's working capital is clearly negative and business growth does not commit capital in balance sheet. The growth rate of advances received has slowed down during the last few years as customers favor contracts based on monthly billing over multiannual fixed-term license agreements.

## Balance sheet and financial position

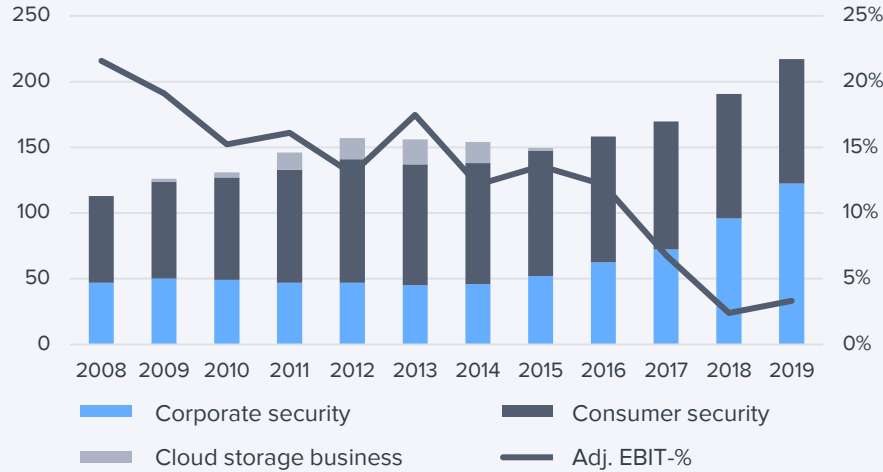
In spite of the major MWR acquisition, F-Secure's balance sheet is solid and provides the company with good flexibility in implementing its growth strategy. At the end of Q2'20, the company's net gearing was approximately 14% and equity ratio approximately 46%. The balance sheet total was EUR 226.5 million. The goodwill from acquisitions shown on the balance sheet totalled EUR 79 million. The company uses a high WACC of approximately 11-15% for testing goodwill, and we do not consider the risk of impairment of goodwill to be probable. Other intangible assets totalled EUR 34 million. In other respects, the balance sheet assets were primarily comprised of cash (EUR 40 million) and receivables (EUR 49 million).

The liabilities side of the balance sheet was mainly comprised of shareholders' equity (EUR 71.5 million) and long-term (EUR 19 million) and short-term (EUR 79 million) non-interest-bearing liabilities. Of the non-interest-bearing liabilities, advances received accounted for EUR 72 million.

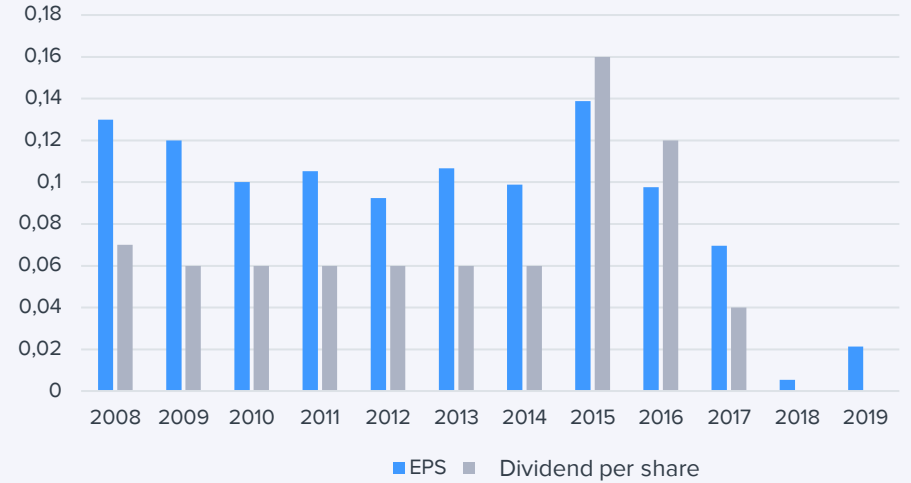
The MWR acquisition was partly funded with interest-bearing debt, which totalled EUR 38 million at the end of Q2/20. The interest-bearing debt includes a EUR 10 million revolving credit facility taken out in Q2 due to COVID-19, the total capacity of which is EUR 23 million.

# Historical development

### Net sales and profitability



### EPS and DPS



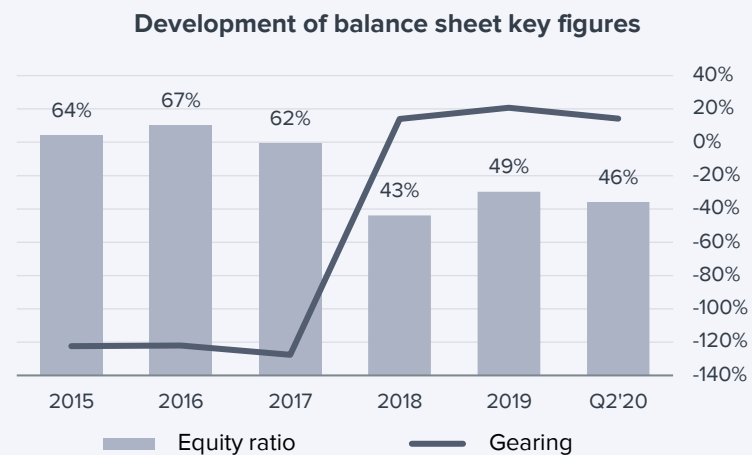
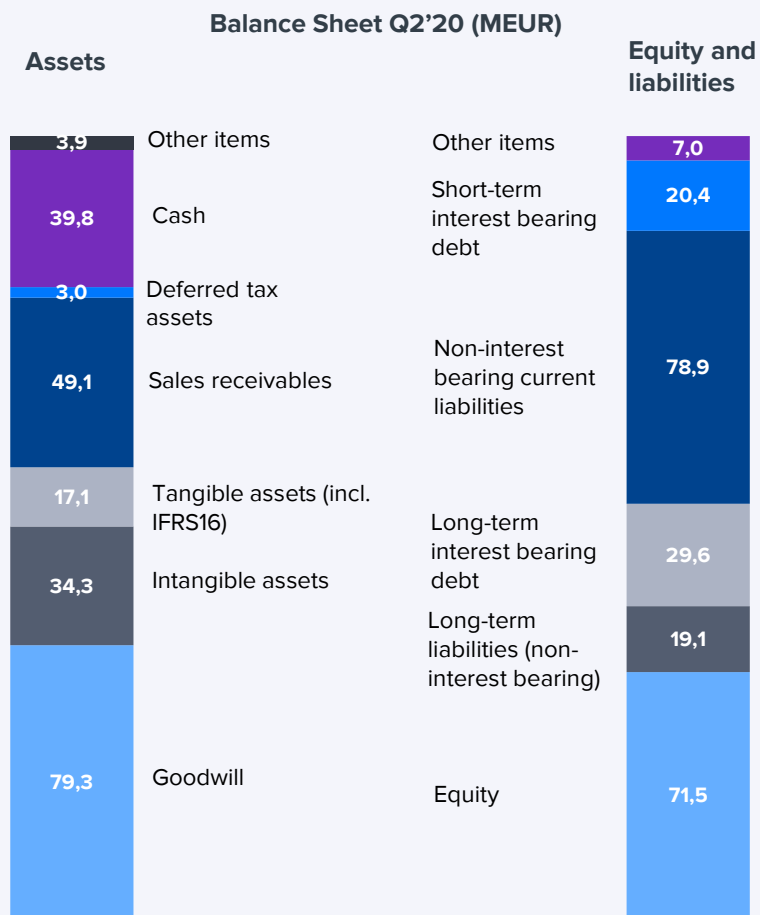
### Corporate security net sales and growth



### Consumer security net sales and growth



# Financial position



# Estimates and valuation 1/5

## Estimates

### Basis for the estimates

Our estimate expects that F-Secure will invest cash flows from consumer security to increase corporate security revenue in the next couple of years. There is considerable growth potential in the MDR and EDR solutions in particular, and F-Secure has invested significantly in these areas in recent years. Considering the investments made, the scale of these businesses is still small, and growth should begin to be gradually reflected in profitability in the years to come, with the biggest investments already behind.

In consulting, the post-COVID-19 demand outlook is still good, and we estimate that F-Secure will return to a growth track in that respect starting from next year. The profitability of consulting in the next couple of years largely depends not only on the rate of recovery, but also how F-Secure succeeds in growing in its smaller markets to reach a sufficiently large scale.

In corporate security, slow-growing endpoint protection products (EPP) still account for a significant share of revenue (according to our estimate, slightly under one-half). Therefore, new products and services must grow at a strong rate so that it will also be seen in the overall growth of corporate security.

In consumer security, the growth outlook is stable on the whole, and we expect it to continue moderate (2-3%) growth in the next couple of years. We have increased the near-future growth forecasts of consumer security from the previous level of 1%, because our view is that the operator channel is currently showing minor signs of

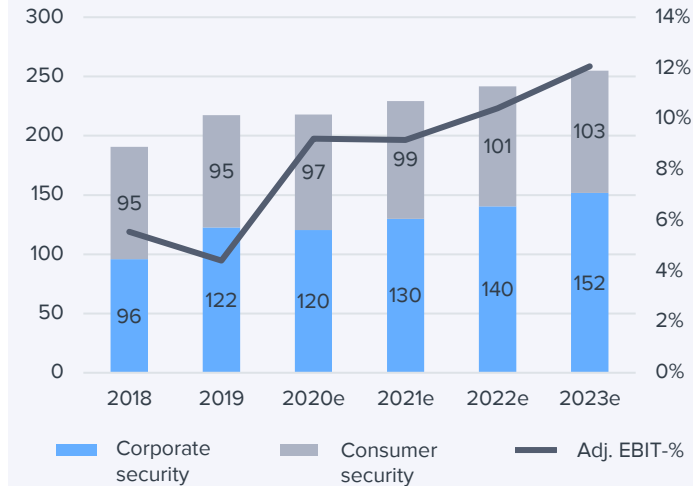
picking up. F-Secure has succeeded in establishing new operator partnerships, and sales through the existing operator channel is also developing a notch more favourably. In addition, Sense and the new ID Protection product offer an interesting growth option in the long term.

### Estimate 2020

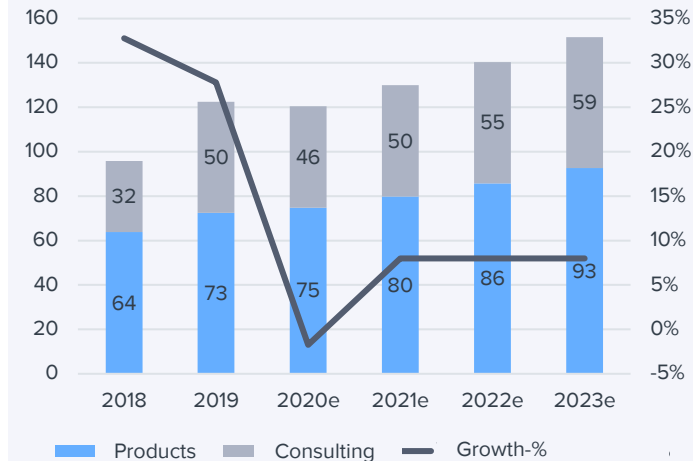
F-Secure did not issue a new full-year outlook in the Q2 report, as was expected, as visibility into the rest of the year continues to be weak, especially with regard to consulting. Based on the first half of the year, apart from consulting, the COVID-19 impact has been quite minor, and F-Secure's stable software business provides stability amidst the uncertainty. In Q2, F-Secure's profitability (adj. EBIT 13%) was exceptionally high, with profitability supported by lower sales and marketing and travel expenses in addition to prudent cost control. According to the company, once the business operations normalise, costs will return to pre-pandemic levels, so profitability will presumably be sacrificed to obtain growth in the second half of the year. However, the COVID-19 situation seems to be persisting, and thereby there is still natural downward pressure in travel expenses and sales expenses, which will support profitability this year.

We expect corporate security revenue to decrease by 2% to EUR 120 million, driven by consulting (-9%). We estimate that COVID-19 will continue to impact the growth in consulting in the second half of the year (Q3: -10%, Q4: -8%) but that the decrease in revenue will slow down. According to our estimate, the product business will continue to grow at a rate of 3% during the rest of the year.

Net sales and profitability



Corporate security net sales and growth



Source: Inderes

## Estimates and valuation 2/5

We estimate that consumer security will continue on the growth track of 3% seen in Q2 also during the rest of the year. On the whole, we estimate F-Secure's revenue to remain roughly on a par with the previous year at EUR 218 million.

We estimate that adjusted EBITDTA will increase to EUR 32.8 million this year. In our estimate, adjusted EBIT will increase to EUR 20.1 million, corresponding to an EBIT margin of 9.2%. We estimate costs to increase from the exceptionally low level of Q2 and EBITDA margin to be 15–13% in Q3 and Q4. The visibility into short-term performance continues to be weak and largely depends on how strong COVID-19 will hit consulting and sales of MDR solutions to new customers this year. On the other hand, the downward elasticity of the cost structure seen in Q2 offers protection against negative surprises.

### 2021-2023 estimates

Starting from next year, we expect F-Secure to return to a growth track with MDR/EDR solutions and consulting being growth drivers at the same time with the COVID-19 situation beginning to lift. In 2021–2023, we estimate F-Secure to reach annual revenue growth of 8% in corporate security. In our estimate, the share of corporate security (2023e: EUR 152 million) of the company's revenue will increase to 59% by 2023 (2020e: 55%). We estimate that consumer security revenue will continue at a stable growth of 2% with its revenue amounting to EUR 103 million in 2023.

We estimate that once the cost structure normalises, F-Secure's relative profitability will remain stable next year compared to 2020 and

adjusted EBIT margin to be 9.2%. To our minds, the company is positioned to achieve clearly higher profitability once the growth rate stabilises, and an EBIT margin of over 10% should well be achievable in the years to come. However, the company still pursues growth in corporate security, and growing in a highly competitive market unavoidably burdens profitability.

We estimate that F-Secure's scalable business model will gradually become visible in the company's profitability after next year. In 2022–2023, we estimate the adjusted EBIT margin to be 10.4% and 12.1%, respectively. We estimate that profitability will primarily improve through an increase in gross margin and lower relative share of sales and marketing expenses with growth.

### Long-term estimates

In 2024–2028, the growth in corporate security will gradually decrease from 7% to 4% in our estimate. We expect consumer security to continue growth at a rate of 1% during this period. We estimate the perpetual growth of the DCF model to be 2.5% from 2029 onwards.

We estimate F-Secure's adjusted EBIT margin to be 13% in 2024 and gradually increase from this to 16.5% by 2029 with the growth rate levelling off, which is also our estimate of the profitability of the terminal phase. Before the current strategy period, the company generated an adjusted EBIT of 15.0–17.5% in 2010–2015, considering which the profitability estimate seems realistic.





# Estimates

Income statement	2018	Q1'19	Q2'19	Q3'19	Q4'19	2019	Q1'20	Q2'20	Q3'20e	Q4'20e	2020e	2021e	2022e	2023e
<b>Revenue</b>	<b>191</b>	<b>53,4</b>	<b>54,1</b>	<b>53,7</b>	<b>56,1</b>	<b>217</b>	<b>54,8</b>	<b>53,0</b>	<b>53,8</b>	<b>56,2</b>	<b>218</b>	<b>229</b>	<b>242</b>	<b>255</b>
Corporate security	95,9	29,4	30,1	30,3	32,7	122	30,4	28,2	29,7	32,1	120	130	140	152
Consumer security	94,9	24,0	24,0	23,4	23,4	94,8	24,4	24,8	24,1	24,1	97,4	99,4	101	103
<b>EBITDA (adj.)</b>	<b>13,8</b>	<b>5,0</b>	<b>4,8</b>	<b>6,8</b>	<b>6,6</b>	<b>23,2</b>	<b>7,2</b>	<b>10,2</b>	<b>8,0</b>	<b>7,4</b>	<b>32,8</b>	<b>33,9</b>	<b>37,2</b>	<b>42,3</b>
<b>EBITDA</b>	<b>13,8</b>	<b>5,0</b>	<b>13,9</b>	<b>6,8</b>	<b>5,4</b>	<b>31,1</b>	<b>7,6</b>	<b>10,2</b>	<b>8,0</b>	<b>7,4</b>	<b>33,2</b>	<b>33,9</b>	<b>37,2</b>	<b>42,3</b>
Depreciation	-9,3	-4,4	-10,7	-4,3	-4,7	-24,0	-4,0	-4,2	-4,2	-4,2	-16,6	-16,6	-15,7	-15,2
<b>EBIT (excl. NRI)</b>	<b>10,6</b>	<b>1,7</b>	<b>1,4</b>	<b>3,4</b>	<b>3,1</b>	<b>9,6</b>	<b>4,0</b>	<b>7,2</b>	<b>4,7</b>	<b>4,1</b>	<b>20,1</b>	<b>21,0</b>	<b>25,2</b>	<b>30,8</b>
<b>EBIT</b>	<b>4,5</b>	<b>0,6</b>	<b>3,3</b>	<b>2,5</b>	<b>0,8</b>	<b>7,2</b>	<b>3,6</b>	<b>6,0</b>	<b>3,8</b>	<b>3,2</b>	<b>16,6</b>	<b>17,3</b>	<b>21,5</b>	<b>27,1</b>
Net financial items	-2,8	-1,5	0,1	-1,1	-0,4	-2,9	-1,3	-0,7	-0,5	-0,5	-3,0	-1,5	-1,0	-0,5
<b>PTP</b>	<b>1,7</b>	<b>-1,0</b>	<b>3,4</b>	<b>1,4</b>	<b>0,4</b>	<b>4,2</b>	<b>2,3</b>	<b>5,3</b>	<b>3,3</b>	<b>2,7</b>	<b>13,6</b>	<b>15,8</b>	<b>20,5</b>	<b>26,5</b>
Taxes	-0,9	-0,4	0,0	-0,6	0,1	-0,9	-0,2	-2,2	-0,8	-0,7	-3,9	-3,9	-5,1	-6,4
<b>Net earnings</b>	<b>0,8</b>	<b>-1,4</b>	<b>3,4</b>	<b>0,8</b>	<b>0,5</b>	<b>3,4</b>	<b>2,1</b>	<b>3,1</b>	<b>2,5</b>	<b>2,0</b>	<b>9,7</b>	<b>11,8</b>	<b>15,4</b>	<b>20,2</b>
<b>EPS (adj.)</b>	<b>0,04</b>	<b>0,00</b>	<b>0,01</b>	<b>0,01</b>	<b>0,01</b>	<b>0,03</b>	<b>0,02</b>	<b>0,03</b>	<b>0,02</b>	<b>0,02</b>	<b>0,08</b>	<b>0,09</b>	<b>0,11</b>	<b>0,15</b>
<b>EPS (rep.)</b>	<b>0,01</b>	<b>-0,01</b>	<b>0,02</b>	<b>0,01</b>	<b>0,00</b>	<b>0,02</b>	<b>0,01</b>	<b>0,02</b>	<b>0,02</b>	<b>0,01</b>	<b>0,06</b>	<b>0,07</b>	<b>0,10</b>	<b>0,13</b>

Key figures	2018	Q1'19	Q2'19	Q3'19	Q4'19	2019	Q1'20	Q2'20	Q3'20e	Q4'20e	2020e	2021e	2022e	2023e
<b>Revenue growth-%</b>	12,4 %	23,8 %	24,8 %	6,3 %	4,5 %	14,0 %	2,6 %	-2,0 %	0,2 %	0,1 %	0,2 %	5,3 %	5,4 %	5,5 %
<b>Adjusted EBIT growth-%</b>	-8,3 %	-22,4 %	24,1 %	-22,1 %	7,3 %	-9,4 %	130,4 %	425,9 %	38,8 %	33,4 %	109,4 %	4,8 %	19,6 %	22,3 %
<b>EBITDA-%</b>	7,2 %	9,3 %	25,8 %	12,7 %	9,7 %	14,3 %	13,9 %	19,2 %	14,9 %	13,1 %	15,2 %	14,8 %	15,4 %	16,6 %
<b>Adjusted EBIT-%</b>	5,6 %	3,3 %	2,5 %	6,3 %	5,4 %	4,4 %	7,4 %	13,6 %	8,8 %	7,3 %	9,2 %	9,2 %	10,4 %	12,1 %
<b>Net earnings-%</b>	0,4 %	-2,5 %	6,2 %	1,5 %	0,9 %	1,5 %	3,8 %	5,8 %	4,6 %	3,6 %	4,4 %	5,2 %	6,4 %	7,9 %

Estimate revisions	2020e	2020e	Change	2021e	2021e	Change	2022e	2022e	Change
MEUR / EUR	Old	New	%	Old	New	%	Old	New	%
<b>Revenue</b>	217	218	0 %	228	229	1 %	239	242	1 %
<b>EBITDA (adj.)</b>	31,6	32,8	4 %	32,6	33,9	4 %	36,2	37,2	3 %
<b>EBIT (exc. NRIs)</b>	18,5	20,1	8 %	19,7	21,0	7 %	24,2	25,2	4 %
<b>EBIT</b>	15,4	16,6	7 %	15,9	17,3	8 %	20,5	21,5	5 %
<b>PTP</b>	12,4	13,6	9 %	14,4	15,8	9 %	19,5	20,5	5 %
<b>EPS (excl. NRIs)</b>	0,07	0,08	10 %	0,09	0,09	7 %	0,11	0,11	4 %
<b>DPS</b>	0,00	0,00		0,00	0,04		0,04	0,05	25 %

# Estimates and valuation 3/5

## Valuation

### Investment view

We reiterate F-Secure's reduce recommendation, but adjust the target price to EUR 3.0 (previously EUR 2.9). Based on the first half of the year, the impacts of COVID-19 on F-Secure will remain minor, apart from consulting, thanks to the stable software business and good financial position. In the big picture, the current crisis will strengthen the already strong long-term fundamentals of the cyber security market, and we estimate that F-Secure is well positioned to return to a growth track starting from next year. However, we consider tightening competition both in the company's established product areas and targeted growth areas to still be an obvious threat. To our minds, the company's stable growth outlook has already been priced in the share, and therefore the risk-reward ratio is not sufficient at the moment. An increase in the valuation would require accelerating growth or profitability being even clearly higher than currently, which would lower the profit multiples to a more decent level.

### Valuation multiples

Based on our current estimates, F-Secure's valuation multiples for the next couple of years seem high, with growth investments in corporate security still burdening the company's profit performance. In our estimates, the adjusted P/E multiples for 2020e–2021e are 39x and 33x, respectively, and the corresponding EV/EBIT multiples 24x and 22x. In 2023, when the scalability of the company's business model increases profitability to a reasonably good level in our estimate (adj. EBIT 12%), the P/E multiple is

21x and EV/EBIT 14x with our estimates. Even these multiples cannot be considered particularly favourable, and their realisation requires the company's strategy to succeed quite well, which naturally involves risks. Looking at the valuation multiples for the next couple of years alone, the F-Secure share seems expensive.

In terms of revenue-based multiples, F-Secure's valuation seems considerably lower compared to earnings-based multiples. In our estimates, the company's EV/S multiples for 2020e and 2021e are 2.2x and 2.0x, respectively. F-Secure's forward-looking EV/S has varied between 1.5x and 3.7x in 2014–2019, with the median being 2.3x.

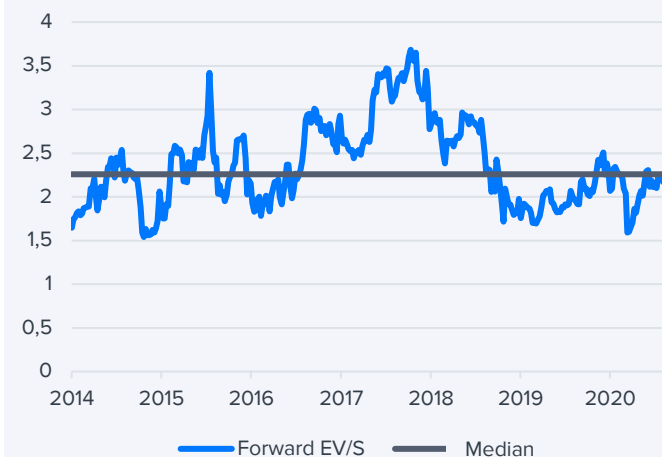
The revenue-based valuation seems particularly low compared with the average valuations of the cyber security sector (see page 37). The low revenue-based valuation is attributable to F-Secure's combination of low growth (2020e +0%) and profitability (2020e: adj. EBIT 9%) in our estimates. The situation does not materially improve with our estimate for 2021, either (growth +5%, adj. EBIT 9%). To our minds, a sustainable increase in revenue-based valuation would require a better combination of growth and profitability.

The growth expectations set for the F-Secure share can be illustrated by assuming that the company would achieve an adjusted EBIT margin of 15–20% already in 2022, which reflects a mature phase. With our current growth estimates, the company's P/E would then be approximately 14x–18x. These multiples seem reasonable, and based on this, the growth expectations set for F-Secure's share can be justified.

Valuation	2020e	2021e	2022e
Share price	3,06	3,06	3,06
Number of shares, millions	158,1	158,1	158,1
Market cap	484	484	484
EV	478	460	446
P/E (adj.)	39,3	33,0	26,7
P/E	50,0	40,9	31,5
P/FCF	20,0	25,7	22,7
P/B	5,6	5,0	4,5
P/S	2,2	2,1	2,0
EV/Sales	2,2	2,0	1,8
EV/EBITDA	14,4	13,6	12,0
EV/EBIT (adj.)	23,8	21,9	17,7
Payout ratio (%)	0,0 %	53,5 %	51,5 %
Dividend yield-%	0,0 %	1,3 %	1,6 %

Source: Inderes

F-Secure's historical EV/S-multiple



Source: Inderes, Bloomberg

# Estimates and valuation 4/5

## Peer group

We have collected listed cyber security companies in F-Secure's group of benchmarks; many of them are direct competitors of F-Secure or compete against F-Secure in certain product areas at least partially. The companies in the peer group are primarily considerably larger than F-Secure in size, which should in part be visible in the pricing of F-Secure relative to its peers. The companies are also in very different phases in terms of the development phase of their business, which can be seen in the companies' growth and profitability profiles and in part makes it more difficult to compare their valuations. A summary of the peers' growth and profitability figures and valuations can be found on pages 37–38.

F-Secure's EV/EBIT multiples this and next year are 12–21% below the level of the benchmarks. The corresponding P/E multiples are 2% over the absolutely high profit multiples of the benchmarks this year and 14% below them next year. The median P/E multiple of the peers is 38x for next year, and the corresponding EV/EBIT multiple is 28x.

In terms of EV/s, F-Secure is valued at a significant discount of approximately 70% compared to the peers for the next couple of years. However, F-Secure's combination of growth and profitability falls clearly short of the average for the peers, which is reflected in the lower valuation, which is justified to our minds. The consumer business and slower-growing EPP products still account for a large share of F-Secure's business, and therefore the company cannot be profiled in the same niche

with the hottest companies in the sector. We note that the revenue-based valuation of the peers is absolutely very high (2020e–2021e 7.3x–6.5x) and consider it a risk that the market will not necessarily accept such high multiples for companies in the future.

## DCF model

According to our DCF model, F-Secure's equity value is EUR 510 million, or EUR 3.2 per share. In the light of the DCF model, the good and stable growth outlook we estimate is currently largely priced in the F-Secure share.

As a perpetual assumption, we estimate EBIT margin to be 16.5% and growth 2.5%. The weighted average cost of capital (WACC) of the DCF model is set at 8.5%. The weight of the perpetuity assumption (terminal) is 62% of enterprise value, which in part indicates that a large share of F-Secure's value will be generated from future cash flows long in the future, increasing the uncertainty.

# Estimates and valuation 5/5

## Sum of the parts

We illustrate the valuation of F-Secure with the enclosed sum of parts method. The method requires certain assumptions, but it is one point of view for valuation due to the different development phases of the consumer and corporate businesses. The calculation is based on the estimates for 2020.

Corporate security is comprised of three businesses with differing profiles and development phases: EPP products (slow growth, good profitability), consulting (good growth, moderate profitability) and MDR/EDR products (strong growth, loss-making). On the whole, we estimate corporate security to grow in the next couple of years, but growth investments in MDR and EDR products in particular burden its profitability. Successful growth would create shareholder value in the long term, and therefore corporate security should be priced based on revenue at the moment. However, the product/service areas of corporate security should be priced using very different valuation multiples due to the differing growth, scalability and profitability profiles.

We price the consumer security business based on earnings due to its slow growth but good profitability. F-Secure does not disclose the profitability of its businesses separately, so we need to make assumptions in that respect. We estimate the EBIT margin of consumer security to be 22–28%, which reflects good profitability for mature-phase business. Our estimate of the profitability of consumer security has increased in conjunction with this report, which, however, is reflected in the profitability of corporate security being lower than we previously estimated.

We set the acceptable EV/EBIT multiplier for consumer security between 9x and 11x, which reflects a reasonable valuation for a business generating stable profits. In the neutral scenario, the value of consumer security is EUR 244 million, with the value range being EUR 193–300

million.

In corporate security, F-Secure reports the share of consulting and products of revenue, based on which we have estimated the weight of different business areas. We assume the revenue from endpoint protection products (EPP) to be approximately EUR 56 million this year, and apply an EV/S multiple of 1.4x–2.2x to the product area. Our estimate of consulting revenue is EUR 46 million, and we have set the acceptable revenue multiple in the range of 1.0x–1.8x. We assume the revenue from strategically important MDR/EDR products to be approximately EUR 19 million. Considering the extremely strong growth outlooks of the products, we price them with a revenue multiple of 4x–6x. The neutral-scenario multiple (5x) reflects a discount of approximately 30% in relation to F-Secure's peers. Applying the above-mentioned estimates and revenue multiples, the value of corporate security is EUR 258 million, with the range being EUR 199–318 million, in the neutral scenario. Adding F-Secure's estimated net cash (2020e EUR 6 million) on top of the values of the businesses results in F-Secure's equity value being EUR 508 million, or EUR 3.2 per share, in the neutral scenario. The range between the pessimistic and optimistic scenario is EUR 2.5–3.9.

The sum of parts calculation does not indicate substantial upside in share price based on the neutral scenario. The risk in the sum of parts lies with the high valuations of cyber security companies, which have risen from the COVID-19 slump early in the year close to new record heights. A decrease in acceptable valuation multiples would be negatively reflected in the valuation of F-Secure's corporate security in particular with regard to the MDR/EDR products for which we accept high multiples. Also, the revenue multiple of 1.4x for consulting cannot be considered to be particularly low, considering the uncertainty caused by COVID-19 to it in the short term.

Consumer security	Bear	Neutral	Bull
Estimated EBIT-%	22 %	25 %	28 %
EBIT 2020e	21	24	27
x multiple (EV/EBIT)	9,0x	10,0x	11,0x
<b>Enterprise value (EV)</b>	<b>193</b>	<b>244</b>	<b>300</b>

Corporate security	Bear	Neutral	Bull
Revenue 2020e	120	120	120
EPP revenue estimate	56	56	56
x multiple (EV/S)	1,4x	1,8x	2,2x
<b>EPP value</b>	<b>78</b>	<b>100</b>	<b>123</b>
Consulting revenue estimate	46	46	46
x multiple (EV/S)	1,0x	1,4x	1,8x
<b>Consulting value</b>	<b>46</b>	<b>64</b>	<b>82</b>
MDR&EDR revenue estimate	19	19	19
x multiple (EV/S)	4,0x	5,0x	6,0x
<b>MDR&amp;EDR value</b>	<b>75</b>	<b>94</b>	<b>113</b>
<b>Corporate security EV</b>	<b>199</b>	<b>258</b>	<b>318</b>

Sum of the parts	Bear	Neutral	Bull
Consumer security	193	244	300
Corporate security	199	258	318
<b>Enterprise value</b>	<b>392</b>	<b>501</b>	<b>618</b>
- Net debt 2020e	-6	-6	-6
<b>Value of equity</b>	<b>398</b>	<b>508</b>	<b>624</b>
<i>Value per share</i>	2,5	3,2	3,9

# Growth and profitability of F-Secure and peer group

Company	EV	EV/S		Revenue growth (CAGR)		EBIT-% (average)		Growth + EBIT-%	
		2020e	2021e	2017-19	2020e-22e	2017-19	2020e-22e	2017-19	2020e-22e
CrowdStrike Holdings	24852	62,6	35,7	118 %	65 %	-112 %	-4 %	5 %	61 %
Avast	6479	8,6	8,1	37 %	5 %	33 %	52 %	69 %	57 %
SolarWinds	6492	7,5	6,8	26 %	10 %	13 %	45 %	39 %	55 %
Check Point Software	12571	7,2	7,0	5 %	3 %	47 %	48 %	52 %	51 %
Qualys	2910	9,5	8,5	18 %	12 %	20 %	36 %	37 %	48 %
NortonLifeLock	12441	5,9	5,9	-12 %	1 %	11 %	44 %	-1 %	46 %
Fortinet	14906	6,9	6,0	19 %	16 %	12 %	26 %	31 %	42 %
Palo Alto Networks	19303	6,7	5,6	28 %	18 %	-5 %	18 %	23 %	36 %
Cyberark Software	2910	7,4	6,3	26 %	13 %	12 %	19 %	38 %	32 %
Mimecast	2337	6,5	5,6	34 %	19 %	-2 %	13 %	32 %	32 %
Proofpoint	4884	5,5	4,8	33 %	17 %	-12 %	14 %	21 %	31 %
Wallix Group SA	61	2,9	1,9	30 %	39 %	-25 %	-8 %	5 %	30 %
Trend Micro Inc	5846	4,2	4,0	8 %	5 %	23 %	23 %	31 %	28 %
Ping Identity*	2064	9,9	8,4	19 %	14 %	8 %	13 %	27 %	27 %
Cloudflare Inc	9520	27,6	21,0	50 %	34 %	-30 %	-7 %	21 %	26 %
Tenable Holdings Inc	3088	8,4	7,1	42 %	20 %	-24 %	4 %	17 %	24 %
Rapid7 Inc	2694	7,9	6,6	28 %	20 %	-20 %	3 %	8 %	23 %
Splunk Inc	24385	12,2	12,4	39 %	17 %	-21 %	6 %	18 %	23 %
SailPoint Technologies	2770	9,5	8,5	30 %	15 %	2 %	4 %	32 %	19 %
Varonis Systems Inc	2909	12,6	10,5	15 %	17 %	-16 %	-1 %	0 %	16 %
NCC Group PLC	593	2,2	2,1	6 %	5 %	8 %	11 %	15 %	16 %
FireEye Inc	2416	3,1	2,9	8 %	6 %	-25 %	8 %	-17 %	14 %
<b>F-Secure</b>	<b>478</b>	<b>2,2</b>	<b>2,0</b>	<b>11 %</b>	<b>4 %</b>	<b>5 %</b>	<b>10 %</b>	<b>16 %</b>	<b>14 %</b>
Nixu	70	1,3	1,2	34 %	9 %	-1 %	2 %	32 %	11 %
SecureWorks	680	1,5	1,4	15 %	4 %	-12 %	2 %	3 %	6 %
Tufin Software*	187	2,3	2,0	26 %	10 %	-11 %	-20 %	16 %	-11 %
<b>Average</b>	<b>6456</b>	<b>9,3</b>	<b>7,4</b>	<b>27 %</b>	<b>15 %</b>	<b>-5 %</b>	<b>14 %</b>	<b>22 %</b>	<b>29 %</b>
<b>Median</b>	<b>2910</b>	<b>7,1</b>	<b>6,1</b>	<b>26 %</b>	<b>13 %</b>	<b>-2 %</b>	<b>11 %</b>	<b>21 %</b>	<b>28 %</b>

Source: Thomson Reuters, Inderes, \*Historical growth 2018-19

# Peer group valuation

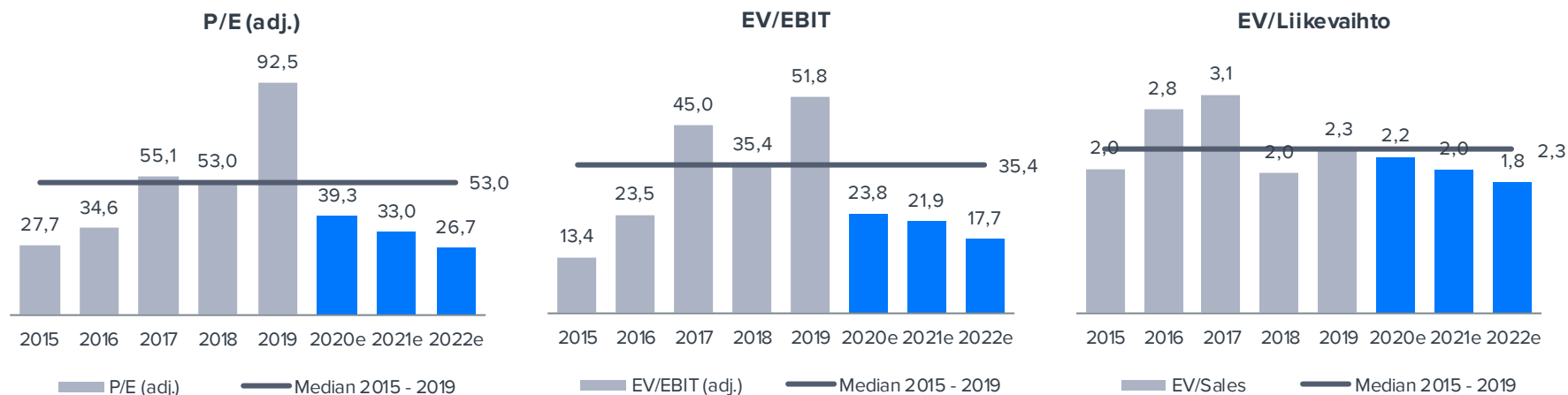
Peer group valuation	Share price	Market cap	EV	EV/EBIT		EV/EBITDA		EV/S		P/E	
Company		MEUR	MEUR	2020e	2021e	2020e	2021e	2020e	2021e	2020e	2021e
FireEye Inc	12,5	2395	2416	44,3	36,1	28,6	24,2	3,1	2,9	50,4	42,6
NortonLifeLock Inc	20,6	10340	12441	17,8	12,1	17,1	11,8	5,9	5,9	25,1	15,4
Trend Micro Inc	6460,0	7337	5846	18,4	16,9	12,8	12,3	4,2	4,0	30,6	26,9
Rapid7 Inc	61,1	2649	2694				110,8	7,9	6,6		
Fortinet Inc	117,8	16203	14906	26,9	23,4	24,0	20,8	6,9	6,0	38,6	34,2
Cyberark Software Ltd	99,4	3272	2910	42,3	32,0	38,6	29,2	7,4	6,3	54,0	44,0
Palo Alto Networks Inc	242,6	19867	19303	39,0	31,5	32,8	27,1	6,7	5,6	50,6	43,2
Check Point Software Technologies	116,9	13924	12571	14,7	14,5	14,4	14,3	7,2	7,0	17,7	17,1
Qualys Inc	96,1	3205	2910	26,2	23,7	21,9	19,4	9,5	8,5	36,4	34,2
Proofpoint Inc	103,3	5060	4884	44,7	34,8	35,1	28,0	5,5	4,8	61,6	50,7
NCC Group PLC	179,4	551	593	19,8	19,5	13,8	13,5	2,2	2,1	26,6	24,2
Nixu Oyj	8,8	63	65		43,3	43,3	18,5	1,2	1,1		73,0
CrowdStrike	138,1	25756	24852					62,6	35,7		
Avast PLC	520,0	5791	6479	16,8	15,4	15,2	14,3	8,6	8,1	19,6	18,7
Tenable Holdings Inc	38,3	3294	3088				138,5	8,4	7,1		
SolarWinds Corp	19,4	5152	6492	16,8	15,2	16,1	14,6	7,5	6,8	20,6	18,9
SecureWorks Corp	12,0	835	680		42,4	72,1	29,7	1,5	1,4		56,5
Splunk Inc	177,7	24222	24385	87,0		79,7		12,2	12,4	94,3	
Mimecast Ltd	45,1	2427	2337	61,8	41,5	36,9	27,8	6,5	5,6	95,3	61,8
SailPoint Technologies Holdings Inc	37,6	2899	2770			163,5	163,8	9,5	8,5		
Tufin Software Technologies Ltd	8,8	268	187					2,3	2,0		
Cloudflare Inc	39,0	10121	9520					27,6	21,0		
Ping Identity Holding Corp	30,5	2088	2064	105,1	63,9	90,3	55,4	9,9	8,4	122,8	72,6
Varonis Systems Inc	112,0	3003	2909					12,6	10,5		
<b>F-Secure (Inderes)</b>	<b>3,06</b>	<b>484</b>	<b>478</b>	<b>23,8</b>	<b>21,9</b>	<b>14,4</b>	<b>13,6</b>	<b>2,2</b>	<b>2,0</b>	<b>39,3</b>	<b>33,0</b>
<b>Average</b>				<b>38,8</b>	<b>29,1</b>	<b>42,0</b>	<b>40,7</b>	<b>9,9</b>	<b>7,8</b>	<b>49,6</b>	<b>39,6</b>
<b>Median</b>				<b>26,9</b>	<b>27,6</b>	<b>30,7</b>	<b>24,2</b>	<b>7,3</b>	<b>6,5</b>	<b>38,6</b>	<b>38,4</b>
<b>Diff-% to median</b>				<b>-12 %</b>	<b>-21 %</b>	<b>-53 %</b>	<b>-44 %</b>	<b>-70 %</b>	<b>-69 %</b>	<b>2 %</b>	<b>-14 %</b>

Source: Thomson Reuters / Inderes

# Valuation summary

Valuation	2015	2016	2017	2018	2019	2020e	2021e	2022e	2023e
Share price	2,47	3,48	3,89	2,32	3,05	<b>3,06</b>	<b>3,06</b>	<b>3,06</b>	<b>3,06</b>
Number of shares, millions	155,8	156,0	156,7	157,5	157,8	<b>158,1</b>	<b>158,1</b>	<b>158,1</b>	<b>158,1</b>
Market cap	392	544	610	365	480	<b>484</b>	<b>484</b>	<b>484</b>	<b>484</b>
EV	298	451	519	375	496	<b>478</b>	<b>460</b>	<b>446</b>	<b>429</b>
P/E (adj.)	27,7	34,6	55,1	53,0	92,5	<b>39,3</b>	<b>33,0</b>	<b>26,7</b>	<b>21,1</b>
P/E	32,0	34,6	55,1	>100	>100	<b>50,0</b>	<b>40,9</b>	<b>31,5</b>	<b>24,0</b>
P/FCF	8,3	40,1	43,3	neg.	neg.	<b>20,0</b>	<b>25,7</b>	<b>22,7</b>	<b>19,4</b>
P/B	5,1	7,2	8,6	5,5	6,3	<b>5,6</b>	<b>5,0</b>	<b>4,5</b>	<b>4,1</b>
P/S	2,7	3,4	3,6	1,9	2,2	<b>2,2</b>	<b>2,1</b>	<b>2,0</b>	<b>1,9</b>
EV/Sales	2,0	2,8	3,1	2,0	2,3	<b>2,2</b>	<b>2,0</b>	<b>1,8</b>	<b>1,7</b>
EV/EBITDA	11,5	18,4	29,1	27,1	15,9	<b>14,4</b>	<b>13,6</b>	<b>12,0</b>	<b>10,1</b>
EV/EBIT (adj.)	13,4	23,5	45,0	35,4	51,8	<b>23,8</b>	<b>21,9</b>	<b>17,7</b>	<b>13,9</b>
Payout ratio (%)	158,2 %	119,5 %	56,7 %	0,0 %	0,0 %	<b>0,0 %</b>	<b>53,5 %</b>	<b>51,5 %</b>	<b>47,0 %</b>
Dividend yield-%	4,9 %	3,4 %	1,0 %	0,0 %	0,0 %	<b>0,0 %</b>	<b>1,3 %</b>	<b>1,6 %</b>	<b>2,0 %</b>

Source: Inderes



# DCF-model

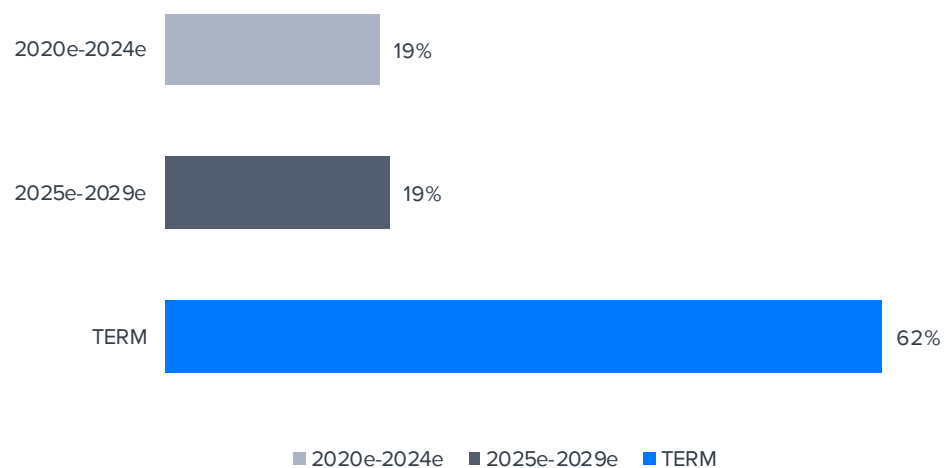
DCF model	2019	2020e	2021e	2022e	2023e	2024e	2025e	2026e	2027e	2028e	2029e	TERM
<b>EBIT (operating profit)</b>	<b>7,2</b>	<b>16,6</b>	<b>17,3</b>	<b>21,5</b>	<b>27,1</b>	<b>31,5</b>	<b>39,8</b>	<b>43,7</b>	<b>47,8</b>	<b>50,8</b>	<b>52,1</b>	
+ Depreciation	24,0	16,6	16,6	15,7	15,2	15,7	13,3	12,2	12,5	12,0	12,3	
- Paid taxes	-1,6	-3,9	-3,9	-5,1	-6,4	-7,5	-9,2	-10,1	-11,0	-11,7	-12,0	
- Tax, financial expenses	-0,6	-0,9	-0,4	-0,3	-0,1	-0,1	0,0	0,0	0,0	0,0	0,0	
+ Tax, financial income	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	
- Change in working capital	3,0	-0,2	1,5	1,9	1,7	1,5	1,4	1,5	1,3	1,2	1,0	
<b>Operating cash flow</b>	<b>32,0</b>	<b>28,2</b>	<b>31,1</b>	<b>33,8</b>	<b>37,5</b>	<b>41,1</b>	<b>45,3</b>	<b>47,4</b>	<b>50,6</b>	<b>52,3</b>	<b>53,4</b>	
+ Change in other long-term liabilities	-12,4	0,4	0,4	0,4	0,4	0,4	0,4	0,4	0,0	0,0	0,0	
- Gross CAPEX	-30,4	-4,4	-12,7	-12,8	-13,0	-13,0	-13,0	-13,0	-13,0	-13,0	-13,1	
<b>Free operating cash flow</b>	<b>-10,8</b>	<b>24,2</b>	<b>18,8</b>	<b>21,3</b>	<b>24,9</b>	<b>28,5</b>	<b>32,8</b>	<b>34,8</b>	<b>37,6</b>	<b>39,3</b>	<b>40,3</b>	
+/- Other	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	
FCFF	-10,8	24,2	18,8	21,3	24,9	28,5	32,8	34,8	37,6	39,3	40,3	693
<b>Discounted FCFF</b>		<b>23,7</b>	<b>17,0</b>	<b>17,7</b>	<b>19,1</b>	<b>20,2</b>	<b>21,4</b>	<b>20,9</b>	<b>20,8</b>	<b>20,1</b>	<b>19,0</b>	<b>326</b>
Sum of FCFF present value		526	502	485	468	448	428	407	386	365	345	326
<b>Enterprise value DCF</b>		<b>526</b>										
- Interesting bearing debt		-41,3										
+ Cash and cash equivalents		25,5										
-Minorities		0,0										
-Dividend/capital return		0,0										
<b>Equity value DCF</b>		<b>510</b>										
<b>Equity value DCF per share</b>		<b>3,2</b>										

## Wacc

Tax-% (WACC)	25,0 %
Target debt ratio (D/(D+E))	0,0 %
Cost of debt	4,0 %
Equity Beta	1,15
Market risk premium	4,75 %
Liquidity premium	1,00 %
Risk free interest rate	2,0 %
<b>Cost of equity</b>	<b>8,5 %</b>
<b>Weighted average cost of capital (WACC)</b>	<b>8,5 %</b>

Source: Inderes

## Cash flow distribution





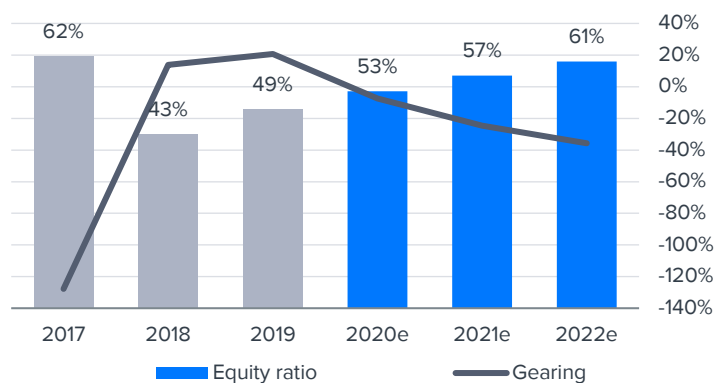
# Balance sheet

Assets	2018	2019	2020e	2021e	2022e
<b>Non-current assets</b>	<b>115</b>	<b>148</b>	<b>135</b>	<b>132</b>	<b>129</b>
Goodwill	90,7	88,4	79,3	79,3	79,3
Intangible assets	15,0	40,7	36,8	33,2	29,5
Tangible assets	5,2	15,6	15,7	15,6	16,4
Associated companies	0,0	0,0	0,0	0,0	0,0
Other investments	0,0	0,0	0,0	0,0	0,0
Other non-current assets	0,5	0,6	0,6	0,6	0,6
Deferred tax assets	4,0	3,1	3,1	3,1	3,1
<b>Current assets</b>	<b>89,4</b>	<b>85,2</b>	<b>102</b>	<b>117</b>	<b>127</b>
Inventories	0,6	0,1	0,5	0,6	0,2
Other current assets	4,3	2,3	2,3	2,3	2,3
Receivables	56,7	57,3	58,8	61,9	65,3
Cash and equivalents	27,8	25,5	40,3	51,9	59,2
<b>Balance sheet total</b>	<b>228</b>	<b>229</b>	<b>234</b>	<b>245</b>	<b>252</b>

Source: Inderes

Liabilities & equity	2018	2019	2020e	2021e	2022e
<b>Equity</b>	<b>66,3</b>	<b>76,2</b>	<b>85,8</b>	<b>97,7</b>	<b>107</b>
Share capital	1,6	1,6	1,6	1,6	1,6
Retained earnings	63,1	67,2	76,8	88,7	97,7
Hybrid bonds	0,0	0,0	0,0	0,0	0,0
Revaluation reserve	0,2	1,3	1,3	1,3	1,3
Other equity	1,5	6,2	6,2	6,2	6,2
Minorities	0,0	0,0	0,0	0,0	0,0
<b>Non-current liabilities</b>	<b>70,0</b>	<b>54,4</b>	<b>51,4</b>	<b>47,8</b>	<b>42,2</b>
Deferred tax liabilities	4,1	2,5	2,5	2,5	2,5
Provisions	1,2	3,0	3,0	3,0	3,0
Long term debt	31,0	29,5	26,0	22,0	16,0
Convertibles	0,0	0,0	0,0	0,0	0,0
Other long term liabilities	33,7	19,5	19,9	20,3	20,7
<b>Current liabilities</b>	<b>91,7</b>	<b>98,8</b>	<b>96,7</b>	<b>99,3</b>	<b>103</b>
Short term debt	6,1	11,9	8,0	6,0	5,0
Payables	84,9	85,4	87,1	91,7	96,7
Other current liabilities	0,8	1,5	1,5	1,5	1,5
<b>Balance sheet total</b>	<b>228</b>	<b>229</b>	<b>234</b>	<b>245</b>	<b>252</b>

Development of balance sheet key figures



# Disclaimer and recommendation history

The information presented in this report has been gathered from several public sources, which Inderes judge to be trustworthy. Inderes aims to use reliable and extensive information, but Inderes cannot guarantee the flawlessness of the information presented. Possible contentions, estimates or forecasts are based on the presenter's point of view. Inderes does not guarantee the content or the reliability of the data. Inderes or its employees do not account for financial results or other damages (direct or indirect) of investment decisions made on the basis of their reports that can materialize from the utilization of this information. Inderes or their employees shall not be held responsible for investment decisions made based on this report or other damages (both direct and indirect damages) which the usage of this report might have caused. The information presented in this report might change rapidly. Inderes does not commit to inform of the possible changes in the information / contention of the report.

This report has been produced for information purposes and the report should not be taken as an investment advice, offer or request to buy or sell a particular asset. The client should also understand that the historical development is not a guarantee of the future. When making investment decisions, client must base their decisions on their own research and their own estimates on the factors affecting the value of the investment object and also to consider their own financial goals, financial status and when necessary they shall use advisor. Customer is always responsible for their own investment decisions and the possible causes of them.

The reports produced by Inderes cannot be altered, copied or made available to others either fully or partially without written consent. Any part of this report or the whole report cannot be presented, transferred or distributed to the United States, Canada or Japan or to the citizens of the aforementioned countries. The legislation of other countries may contain restrictions related to the distribution of information contained in this report and people, whom these restrictions apply to, should take into account these restrictions.

Inderes gives the stocks it covers target prices. The recommendation methodology Inderes uses is based on the stock's 12-month expected return (upside + dividend) adjusted with the Inderes estimated risk related to return. The recommendation policy has four levels with sell, reduce, accumulate and buy. The recommendations and target prices of Inderes are examined at least four times a year after company's quarterly reports. However, it is possible to change recommendation and / or target price at any time it is necessary. The given recommendations and target prices do not guarantee that the stock's development is in accordance to the valuation that has been made. In producing target prices and recommendations, Inderes primarily uses the following valuation methods: Discounted Cash Flow analysis (DCF), valuation multiples, relative valuation and Sum of Parts analysis. The valuation methodologies applied and the bases for target prices are company specific and may significantly vary depending on the company and/or sector.

Inderes' recommendation policy is based on the following distribution in relation to stock's 12-month risk adjusted return.

Buy - Stock's risk adjusted return is very attractive

Accumulate - Stock's risk adjusted return is compelling

Reduce - Stock's risk adjusted return is weak

Sell - Stock's risk adjusted return is very weak

The analysts producing the research of Inderes or the employees of Inderes can not have 1) ownership that exceeds significant financial benefit 2) over 1 % ownership in any of the companies under coverage. Inderes Oy can own shares of companies it covers as far as it is presented in the company's model portfolio that invests real money. All ownership of shares by Inderes Oy is fully presented in its model portfolio. Inderes Oy does not have any other ownership in shares in companies it covers. The compensation of the analyst providing the research has not been directly or indirectly tied to the given recommendation or view presented. Inderes Oy does not have any investment banking operations.

Inderes or its partners, whose customers may have a financial impact on Inderes can obtain agency relationships with different issuers on behalf of services provided by Inderes or its partners. As a result Inderes can therefore be in a direct or indirect contractual relationship with the issuer who is the target of the research. Inderes may together with its partners offer issuers Corporate Broking services, which aim to enhance the communication between the target company and the capital markets. These services include investor events, counsel related to investor relations and compiling investment reports.

Inderes has made an agreement with the issuer and target of this report, which entails compiling a research report.

More information about research disclaimers can be found at [www.inderes.fi/research-disclaimer](http://www.inderes.fi/research-disclaimer).

## Recommendation history (>12 mo)

Date	Recommendation	Target price	Share price
9.3.2018	Accumulate	3,90 €	3,65 €
7.5.2018	Accumulate	3,90 €	3,68 €
20.6.2018	Accumulate	4,20 €	3,85 €
9.8.2018	Accumulate	4,00 €	3,62 €
19.10.2018	Reduce	2,70 €	2,88 €
5.11.2018	Accumulate	2,90 €	2,65 €
14.2.2019	Accumulate	2,90 €	2,51 €
9.5.2019	Accumulate	2,90 €	2,60 €
22.7.2019	Accumulate	2,90 €	2,55 €
31.10.2019	Accumulate	3,00 €	2,85 €
13.12.2019	Reduce	3,00 €	3,13 €
13.2.2020	Reduce	3,10 €	3,25 €
7.4.2020	Reduce	2,60 €	2,54 €
4.5.2020	Reduce	2,60 €	2,75 €
17.7.2020	Reduce	2,90 €	3,08 €
23.9.2020	Reduce	3,00 €	3,06 €

**Award-winning  
research.**

[www.inderes.fi](http://www.inderes.fi)