

# F-Secure

Company report

7/2019

## Solid foundation for future growth

We reiterate F-Secure's accumulate recommendation and target price of EUR 2.9. To our minds, F-Secure offers a well-managed and run combination of investment-phase business seeking strong growth (corporate security) and stable business built on a solid foundation. During the past 5 years, the company has undergone a significant transformation from a consumer-driven endpoint protection company into a corporate cybersecurity company. During the last year, the transformation has now clearly progressed to a phase of acceleration, with F-Secure finding an acquisition target matching its strategy and the new product areas key to the strategy are beginning to be visible in the form of accelerating growth. With the strategy proceeding on the current path, we find the risk/reward ratio of the share attractive.

### Information security company turning into a cyber security solution provider

Through its history, F-Secure has developed a strong expertise, reputation and brand in preventing malware and cyber security threats. The company's business model focusing on endpoint protection products is very stable, as well as recurring and scalable by nature, which provides the company with a good base to invest in the growth areas of the cyber security market. The shift in the market from preventing threats to detecting and reacting to them also creates challenges and change pressure for an established supplier like F-Secure that has historically focused on the consumer business. Customer demand is shifting from point technology solutions towards acquiring cyber security as a comprehensive process. In order to respond to the change, F-Secure must continue developing and unifying its product and service portfolio, shift its focus towards medium sized and large enterprises and develop its organization.

### Value is created through growth in corporate security

In the current market situation, F-Secure sees the best value creation potential in strong net sales growth on the corporate security markets. F-Secure's current corporate security products and services (2019e 57% of net sales) are, in our view, very competitive, and the recently expanded portfolio creates cross-selling possibilities but the company must continue investing in strengthening the product portfolio and in the sales channel. In consumer security (43% of net sales), the company aims at stable growth and strong profitability. In line with its strategy, F-Secure invests considerably on the corporate side aiming for an annual growth of over 15%, while maintaining group level profitability positive with the help of the consumer business.

### Excellent growth outlook for the industry but also signs of overheating

Cyber security companies are solving one of the biggest problems of digitizing society, which is why the demand fundamentals of the market are excellent in a big picture. The size of the global cyber security market is around USD 124 billion and is growing about 10% annually. F-Secure's business is still somewhat more focused on slowly growing established product areas than the general market, but the share of very rapidly growing detection and response solutions and rapidly growing cyber security services of the company's business is continuously increasing as the strategy proceeds. The cyber security sector is turning challenging as an investment object despite the growth outlook. We see a risk that the current, partially extremely high valuation levels of the sector are not sustainable when competitive pressure increases after the investment wave seen in the industry in recent years.

### Upside in the valuation as the strategy proceeds on the right track

The valuation of the F-Secure share (2019e EV/Revenue 1.9x) is low in the context of the cyber security sector and considering the historical valuation level of the company. The valuation is largely based on the growth rate in corporate security, with regard to which market confidence has not fully recovered after the disappointing growth last year. The company has shown accelerating growth in the first half of the year, and we estimate that this will gradually translate into recovering confidence and in the valuation of the share as the company continues to grow as expected. Also based on our sum of the parts calculation, the share has room for growth as the company's strategy will proceed as planned in future years.

## Analysts



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## Recommendation and target price

### Accumulate

(prev. Accumulate)



**2,90 EUR**

(prev. 2,90 EUR)

Stock price: 2,55 EUR

Potential: 13,9 %

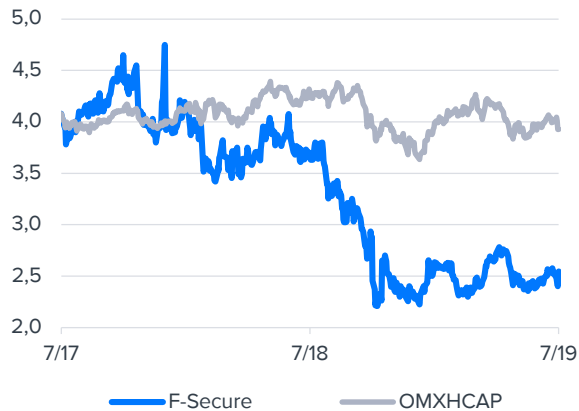
## Key figures

	2018	2019e	2020e	2021e
Revenue	191	221	238	258
growth-%	12 %	16 %	8 %	8 %
EBIT adj.	10,6	9,2	17,4	27,8
EBIT-% adj.	5,6 %	4,2 %	7,3 %	10,8 %
Net Income	0,8	4,5	9,5	17,3
EPS (adj.)	0,04	0,04	0,08	0,13

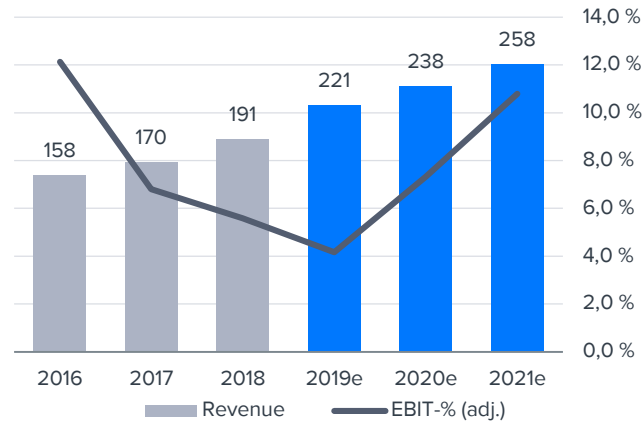
P/E (adj.)	52,6	72,0	33,0	20,0
P/B	5,5	5,7	5,0	4,3
Dividend yield-%	0,0 %	0,0 %	1,2 %	2,4 %
EV/EBIT (adj.)	35,2	44,9	23,5	14,3
EV/EBITDA	27,1	13,1	13,7	10,0
EV/S	2,0	1,9	1,7	1,5

Source: Inderes

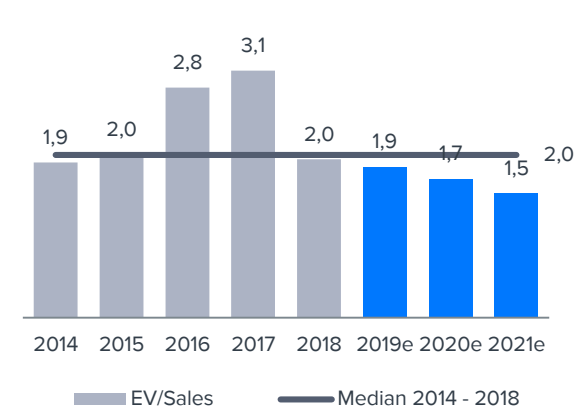
## Stock price



## Revenue and EBIT-% development



## Valuation (EV/S)



**MCAP**  
**401**  
**MEUR**

**EV**  
**413**  
**MEUR**

**EV/S**  
**1,9x**  
**2019e**

**EV/S**  
**1,7x**  
**2020e**



### Value Drivers

- Strong 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

- Transformation process into a comprehensive cyber security company partly in progress
- Tight competition and rapid market change in consumer security
- Success in corporate security growth investments and the integration of the MWR acquisition
- Cyber security market potentially over-invested at the moment



### Valuation

- Valuation levels in sector are high, F-Secure's EV/S-multiple is low compared to the sector
- F-Secure's conscious growth investments burden the profit
- Growth speed is the most important value driver for the share
- We see upside potential in the share as the strategy proceeds as planned

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# 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 190.7 million** (+12 % vs. 2017)

Revenue 2018

**+20 %** 2015-2018

Corporate security revenue CAGR

**17.4 MEUR** (9.1 % margin)

Adj. EBITDA 2018

**1666**

Personnel at the end of 2018

**49,7 % / 50,3 %**

Share of consumer/corporate security in net sales 2018



# 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 information 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 is ongoing on the information security markets, where 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 solutions

### Now

- Intelligent, targeted attacks
- Detection and response
- Cyber security is a process
- Complex wholes



## F-Secure's transition

- Focus from consumer security to corporate security
- New product areas (detection and response)
- Uniform products and services
- Services next to products

# 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 2018, the company's net sales were EUR 191 million and adjusted EBITDA was EUR 17,4 million. The share of corporate security in the company's net sales was 50% and that of consumer security was 50%. On the corporate side, company growth has been strong and on the consumer side stable. Net sales is by nature very continuous 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 35% and that of the rest of Europe was 44% in 2018. The remainder of net sales came from North America (9%) and elsewhere in the world (11%). At the end of 2018, the company had 1,666 employees of whom 1045 worked in sales and marketing (includes consultants and customer support), 437 in product development, and 184 in administrative tasks.

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.

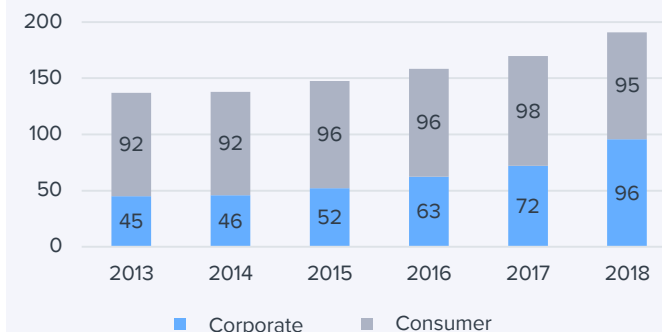
### Sales, marketing and distribution channels

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. Sales and marketing expenses amounted to EUR 95 million in 2018 or some 50% of net sales.

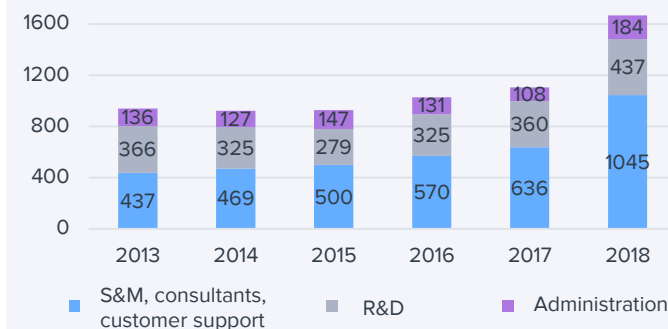
F-Secure sells its corporate security products through an extensive retailer network, which globally consists of over 6,000 IT service partners. The task of the company's own sales organization is to support and provide services for the retailers, as well as develop and grow this network in order to 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 requires development of the existing retailer channel. The company primarily offers cyber security consultation 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.

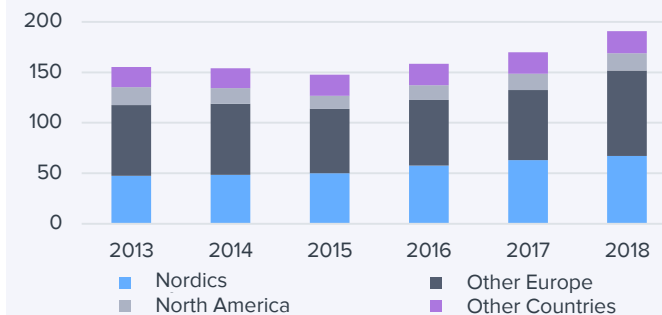
Distribution of revenue (MEUR)



Number of employees



Geographic distribution of revenue (MEUR)



## 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, strong growth*

### Consumer Security

- Safe, Freedom, Key and Sense

*Significant product area, stable growth*

## Cost structure (2018)

1666 employees (2018)  
Total costs -188,4 m€ (2018)



Materials and services  
(20,6 %)\*



Sales and marketing  
(49,8 %)\*



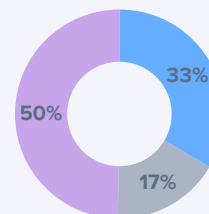
Research and development  
(18,7 %)\*



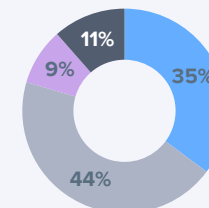
Administration  
(9,6 %)\*

## Revenue stream (2018)

Net sales 190.7 m€  
Adj. EBITDA 17.4 m€ (2018)



- 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 2018, product development costs (EUR 36 million) corresponded with some 19% of net sales. In its product development, the company focuses in particular on developing the features of existing corporate security detection and response products (MDR and EDR). Another key development target is better harmonization 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 the Sense security router). 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 at large companies 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 2018, product business accounted for 67 % of corporate security net sales and consulting for 33 %. Thanks to replicability, the product business is highly scalable. Managed services (MDR) are also well scalable in the long run.

In its consulting business, the company focuses mainly on delivering services requiring the highest level of expertise, where the price levels for the consultants can be really high compared to conventional IT service operations. The transition from "cyber security as a technology" towards "cyber security as a process" will in future also blur 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

## Rapid Detection & Response service (RDS)

RDS is F-Secure's first product launched in 2016 to respond to the paradigm shift on the security markets, where mere prevention of malware and malicious hacking is evolving into quick detection of threats that have passed the security and responding to them. RDS is a managed service by nature (MDR, Managed Detection & Response), where technology plays a big role.

Sensors are installed in the customer's IT networks and endpoints, which collect and stream data to F-Secure's data center, where AI and machine learning are used to find anomalies in the company's data communications that could indicate security threats that have passed into the system. F-Secure's data center monitors customers' data environments 24/7 and when it detects a possible threat it notifies its service partners whose job it is to react to the customer's security alert. RDS' sensors collect a huge amount of data daily and the overall picture of the customer's data communications becomes clearer over time. Through machine learning, the product increasingly becomes better tailored to the customer's environment and thus the customer's threshold to switch to another product grows over time.

RDS is suitable for companies whose security requirements are high and the target customers are companies with more than 1,000 employees. The size category of the contracts is around EUR one hundred thousand and for the largest customers clearly higher. RDS still has a small weight in the company's business as it is a relatively new product but thanks to the large size of the contracts its importance in the growth of corporate security is considerable. F-Secure has

already managed to attract customers to RDS, e.g. from banking, media, energy and IT. The biggest challenge in our view is that the target group for RDS is in the size category of large companies where F-Secure does not yet have a strong partner and distribution network.

F-Secure's competitors in this product category come mainly from USA and the main competitors include Crowdstrike, Carbon Black, Cybereason and Rapid7. According to F-Secure, it distinguishes itself from its competitors with its strong technological expertise in antivirus, which means that RDS' detection ability of cyber-attacks is very good. In addition, in Europe the company has competitive advantage against its competitors in that geopolitical factors may affect the decision making of some customers.

## Countercept

Countercept became part of the F-Secure product portfolio with the MWR acquisition, and in terms of operating logic, it is an RDS-like targeted solution for detecting and responding to threats, offered as a managed service. In particular, Countercept's technology stands out in responding to identified threats and in the fight against on-going targeted cyber attacks.

Countercept is intended for the upper end of medium-sized corporations and large customers, and the deals are in the range of hundreds of thousands of euros annually. The competitive field for the product is largely the same as for the RDS product.

F-Secure is currently integrating RDS and Countercept into a single uniform MDR overall solution from which the customer can pick the modules they need based on their cyber security

requirements. The integration is a demanding and time-consuming process, and it will not be ready until the end of 2019 at the earliest. Countercept and RDS are currently still sold as independent products. When the integration is complete, F-Secure's MDR product offering should be very competitive.

F-Secure has high expectations of the MDR products (RDS and Countercept), and the success of their sales will have a significant impact on the growth in corporate security due to the large scale of the agreements. F-Secure sees growth opportunities in this product area for several years, and the company will invest significantly in sales in the years to come, which will burden profitability. After the growth phase, the products have potential for an excellent level of profitability, with high customer retention adding continuity to revenue and the service component scaling up with growth in revenue.

## Radar and phishd

F-Secure has two products for predicting threats; our view is that their share of the revenue from corporate security is rather minor. The Radar vulnerability management solution can help identify vulnerabilities in the firm's IT-environment. Radar became part of F-Secure's offering with the nSense acquisition in 2015. Having joined the company's product portfolio in the MWR acquisition, phishd is a behaviour management platform that can be used to prevent phishing. In the big picture, F-Secure faces large competitors focusing primarily on these segments in both of these products, and the company's main focus is not to start competing directly against them.

# Company description and business model 5/6

In fact, F-Secure considers the potential of Radar and phishd to lie in integrating these functionalities into the company's endpoint protection (EPP) products. This could provide the company with a competitive advantage over other antivirus-based competitors that lack similar capabilities in their EPP products.

## Rapid Detection & Response (EDR)

In the end of 2018, F-Secure launched an automated tool for detecting and responding to malicious hacking (Endpoint Detection and Response, EDR). The product is largely based on the same technology as RDS but it does not include the service component and is scalable to smaller companies as well through automation.

EDR acts as an additional ability on top of endpoint protection products (EPP) and on the markets this product area is integrating with endpoint protection products. F-Secure has designed its EDR product so that it is also compatible with the endpoint protection products of its competitors. This distinguishes F-Secure in the competition and makes it easier to sell the product to parties that are not using F-Secure's endpoint protection software.

The operating principle of EDR is very similar to that of RDS, but when the product detects an anomaly in a company's network, the company's head of IT is automatically informed of it. The product also provides the head of IT with operating instructions for responding to the cyber security threat. The product is suitable for companies of all sizes, but SMEs are the main target group. The product also allows the end customer or resale partner to send information

about the detected anomaly to F-Secure's MDR service centre where F-Secure specialists help resolve the matter. Even though EDR is a pure software product per se, it also provides F-Secure with service revenue through this feature.

F-Secure's EDR is at the core of the company's corporate security growth strategy besides RDS and Countercept. Being a new product, EDR still accounts for a very minor share of F-Secure's net sales. If successful, the product has significant growth potential, as the market for the product is still in its early stages, and the market research company Gartner, for example, has estimated the number of endpoints with detection and response capabilities to increase many-fold in future years. The EDR deals start from a few thousand euros, so there will need to be a significant number of deals made for this to become visible in the company's figures.

Also in this product category, F-Secure faces competition on a wide front, as nearly all competitors that offer endpoint protection products have EDR capability, in addition to which, the developing and rapidly growing market constantly attracts new players. The weakness we see is that the company is only entering the EDR competition this year with a slight handicap to its competitors.

## Cyber security services

F-Secure provides large corporations and other parties with critical IT systems with cyber security consulting in all areas of cyber security. The focus of F-Secure's consulting business is on the most demanding cyber security issues, but the service range has expanded in recent years, with

companies increasingly wanting more extensive turnkey solutions in cyber security services. The scope of the consulting business also grew significantly with the MWR acquisition, and F-Secure already employs more than 300 specialists in consulting.

The demand for consulting services is strong, and the growth is continuously restricted by the availability of experts. F-Secure already has hundreds of large corporate customers covered by its consulting services. Consulting net sales amounted to EUR 32 million in 2018, accounting for 33% of corporate security net sales. Consulting net sales for H1/19, when the MWR acquisition was fully reflected in the figures, amounted to EUR 23.7 million, accounting for 40% of corporate security net sales. Consulting continues to be a largely project-driven business, but the company continuously aims to sign continuing consulting agreements with its customers.

In the company's largest market areas in the consulting business (United Kingdom and the Nordic countries), operations are already developed partially with a focus on profitability, but in smaller markets, operations are still clearly in a pure phase of growth, which burdens profitability.

The focus of F-Secure's consulting lies in the most demanding security problems and the strategic goal is not to expand its service business to compete with regular IT service companies, even if the company's service offering is sometimes overlapping with these. More extensive cyber security service packages are offered by consultancy companies (like KPMG), IT generalists (like CGI) and specialized players (like Nixu).

# Company description and business model 6/6

The services offered by the company include cyber security audits, cyber security stress tests (Red Teaming), strategic risk and cyber security management, cyber security in software development and responding to hacking and data leaks. F-Secure's ability to offer consulting services offers the company a competitive advantage against players who only offer cyber security products. In addition, consulting offers cross-selling possibilities with the products. Consulting also polishes F-Secure's brand towards a more comprehensive cyber security company.

## Consumer security

### Products

F-Secure offers cyber security products for consumers through a network of more than 200 operators. Consumer products are also sold through many partners operating online and retailer partners, and also in the company's own online store. The company's products are used by millions of consumer customers across the world. The main products in the company's current product portfolio are:

- Endpoint protection product, F-Secure Safe
- Privacy protection product (VPN), F-Secure Freedom
- Password management product, F-Secure Key
- Cyber security router that protects all smart equipment in the home, F-Secure Sense

A majority of net sales in consumer security comes from selling endpoint protection products (Safe). The sales of Freedom and Key has been

growing but we estimate that their effect on the net sales of consumer security is still low compared to Safe. An increasing number of customer are, however, switching to the combination solution Total that includes both Safe and Freedom when renewing their order. This product bundling is a key growth driver for consumer security sales.

Launched in June 2017, Sense has not had a significant impact on consumer security net sales for 2017-2018; however, the company sees growing interest in the product, with smart devices becoming increasingly common in homes. Nevertheless, the expectations for the product are still very cautious, because the market for the product is in its early stages. The most potential route for more extensive commercial distribution of Sense is offering Sense as a software that can be installed in third-party routers. In late 2018, the company signed the first agreements with operators in this area. However, Sense is not going to be a driver of net sales growth in the short term, but if it succeeds, it will offer obvious growth potential in the consumer security segment in the long term.

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

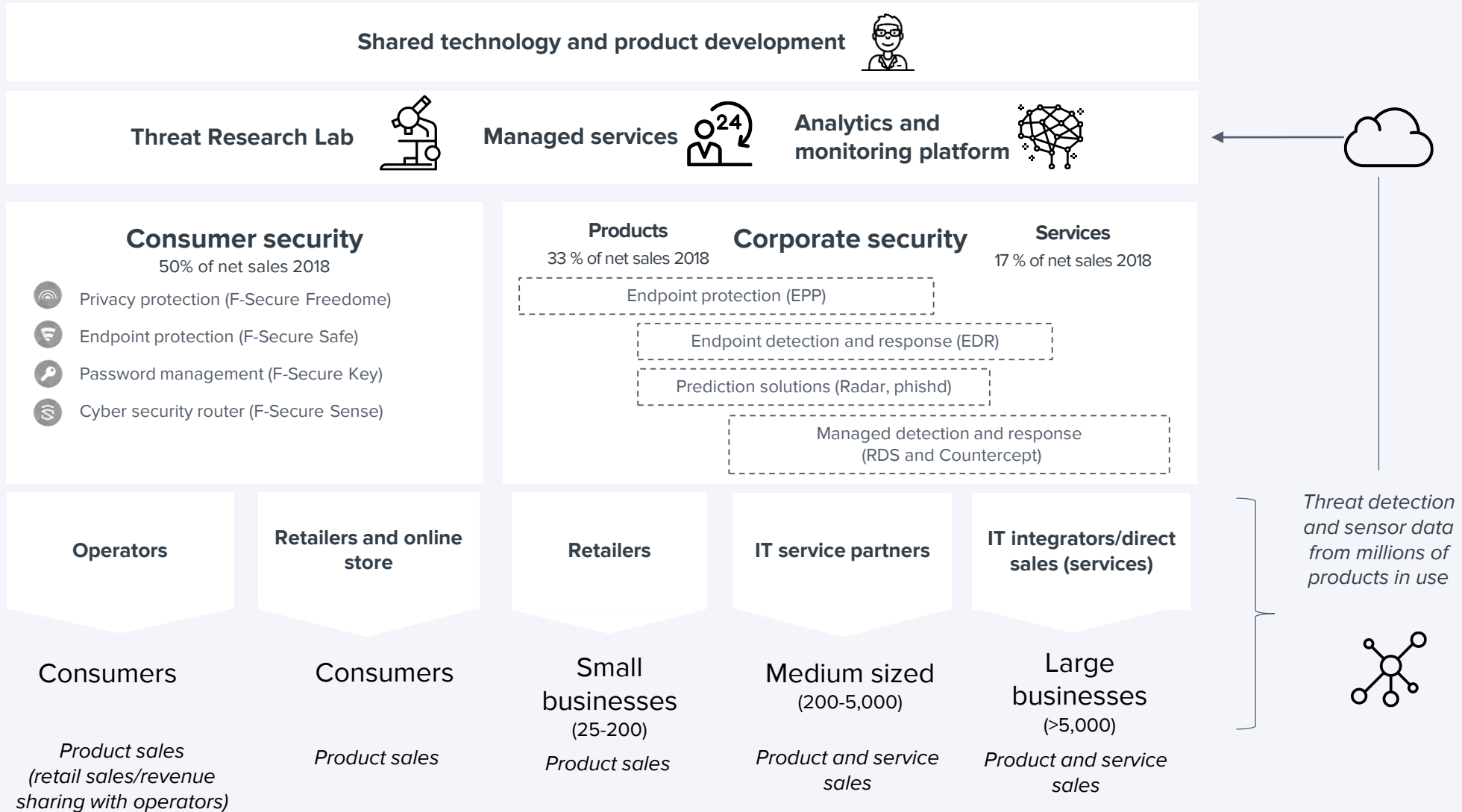
F-Secure started building a sales channel through

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 (very 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. The share cannot be priced directly using an individual method or valuation multiple; value creation must be considered as part of a bigger picture. To our minds, 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 appreciates growth rate very much and it is considered to be a key value driver, as the cyber security market is found to be on the threshold of strong growth and it is important for the players to lay a foundation for the market.

## Strengths and drivers

According to our view, the key positive value drivers of F-Secure are:

- **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. Companies operating in these rapidly growing product areas are occasionally priced using very high valuation multiples.
- **A scalable business model with strong customer retention** allows for excellent profitability after a successful current investment phase of the company.
- **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 Sense cyber security router, can provide the company with significant scalable growth potential in the long term.
- **A strong and established position in endpoint protection** provides the company with 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

- **The sector is potentially over-invested**, which may lead to a significant increase in competition in the next couple of years. 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.
- **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 poor net sales 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** to the SME market are still in the making. Without suitable partners, it will be challenging for the company to reach its growth goals.
- **The transformation into a cyber security company is still partly in progress.** The transformation still requires the company to develop its product portfolio, integration of the MWR acquisition, harmonisation and investments in sales, which will burden profitability in the short term. Moreover, as a brand, F-Secure is not yet perceived as a corporate security solutions provider.

# Investment profile

1.

**Strong growth focus in corporate security**

2.

**Hot and growing market**

3.

**Scalable and continuous business model**

4.

**Transformation into a cyber security company still partly ongoing**

5.

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

## Potential



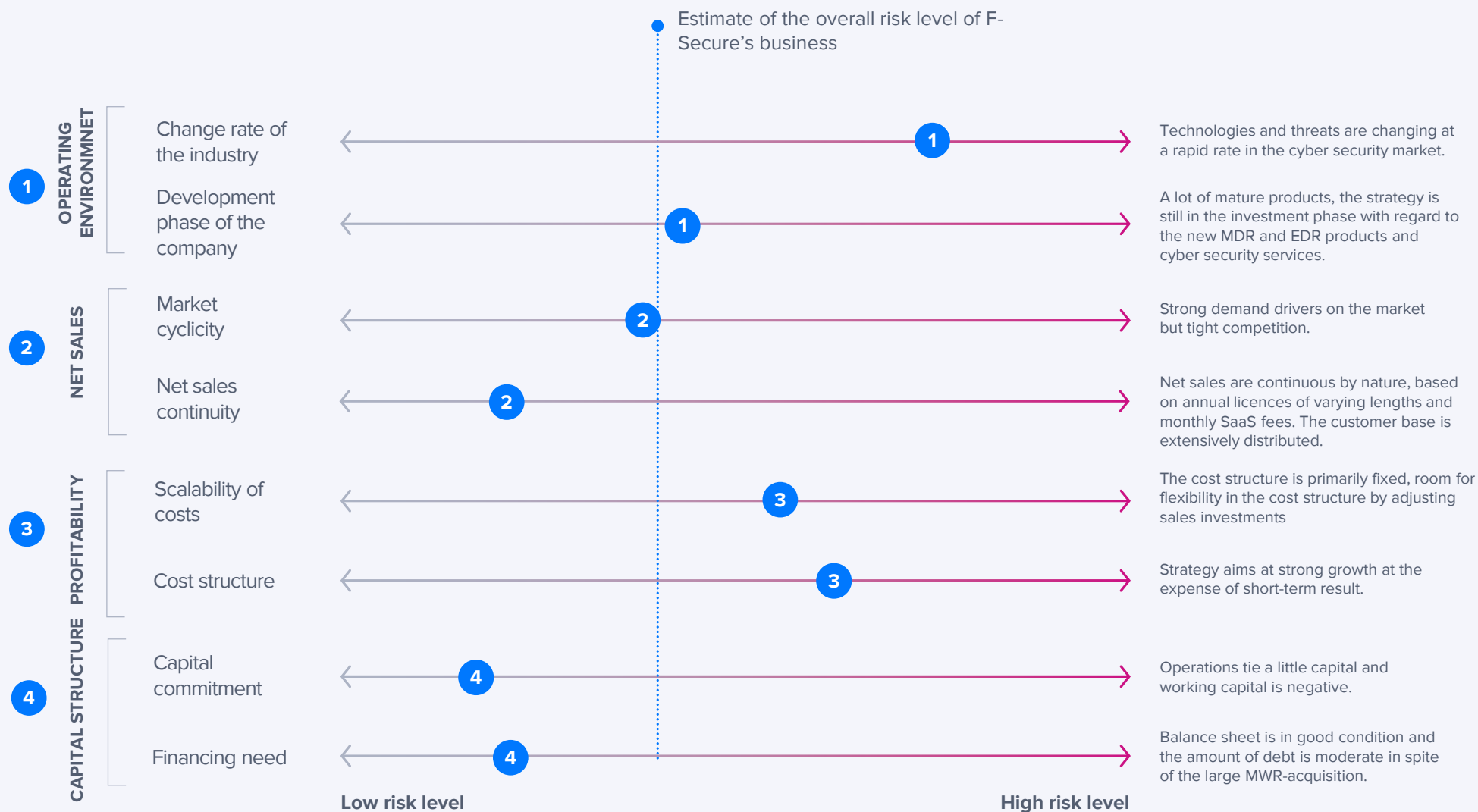
- In corporate security, strong growth now generates shareholder value
- Accelerating growth and competitive edge through renewal and integration of product portfolio
- Strong demand outlook on the market
- Strong and stable business in consumer security

## Risks



- The industry is potentially over invested, which can lead to a clear increase in competition in the next few years
- Failure with growth investments
- Failure with MWR Infosecurity integration
- Dissolving of the high valuation levels in the sector could have a negative effect on the share
- Competitive threat in consumer security and weak growth

# Risk profile of the business model





# 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 means 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 develops quickly and the estimates on the total market size and growth vary dramatically. The market research company Gartner (8/2018) estimates that the global size of the cyber security market will be USD 124 billion in 2019 (+9% growth). In general market is expected to grow at an average annual rate of 10% in coming years.

### 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 information 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. RDS).

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.

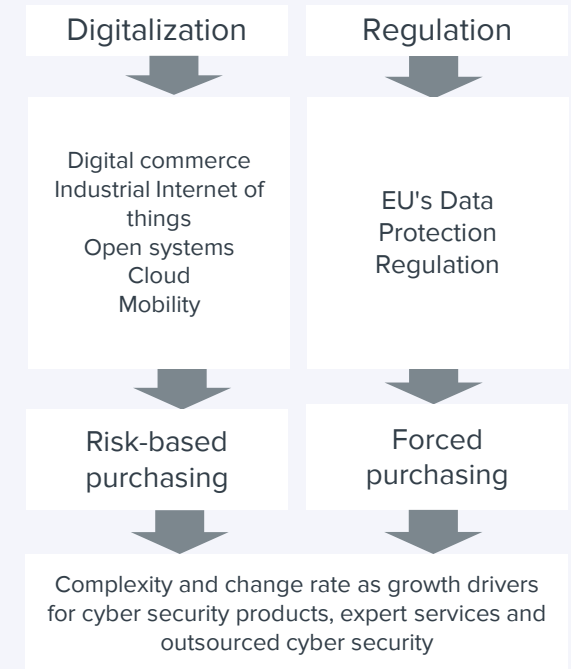
Among medium sized companies the need for higher cyber security than mere endpoint protection is growing, but the cyber security budgets (EUR 0.1 to 1.0 million) are clearly lower than in the large company segment, which means that buying of the best technologies or managed/outsourced cyber security 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. According to Gartner, the market for consumer security products was USD 6.6 billion in 2017 and it is expected to grow at an average annual rate of 4% in 2016 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 (VPN solutions) 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 and estimates the value of the entire EPP/EDR market to be approximately USD 5 billion. We estimate that EDR products still account for clearly under USD 1 billion of this. Thanks to the strong growth in EDR products, the overall market for these products is expected to grow by approximately 6% annually in 2016–2022. The growth is driven by the fact that cyber attacks or data breaches against companies are not often detected for months, and this has shifted the focus from merely proactively protecting against cyber attacks towards detecting and responding to them more quickly. Large companies can purchase detection

and response capabilities as a managed service (such as F-Secure's RDS), but for smaller companies in particular, a pure product solution is the only reasonable solution in terms of costs. Gartner estimates that the share of endpoints with EDR products of all endpoints will increase from 10% in 2017 to 35% by 2020. F-Secure launched its new product for the EDR market in late 2018, and the product will play an important role in terms of the company's growth in the years to come.

The market for managed detection and response services (MDR) is also only shaping up, and estimates of the size and growth of the market are only indicative. MarketsandMarkets has estimated the size of the MDR market to be approximately USD 0.4 billion, and it is estimated to grow at a very strong annual rate of some 32% in 2017–2022. F-Secure's RDS and Countercept operate in this rapidly growing market.

The size of the market outsourced cyber security services is, according to Gartner's estimate, approximately USD 19 billion, and the market is expected to grow by approximately 10% annually in 2016–2022.

Gartner has estimated the size of the vulnerability management market to be approximately USD 0.9 billion, and it is estimated to grow by some 7% annually in 2016–2022.

### Weights, size and annual growth rate of F-Secure's market segments

	<b>\$6.6 bn.</b>
<b>Consumer security</b> → Significant product area	 4 %
<b>Endpoint protection (EPP) and Endpoint detection and response (EDR) products for companies</b> → EPP: Significant product area → EDR: New, important product area	<b>\$5.0 bn.</b>  6 %
<b>Managed detection and response (MDR)</b> → New, important product area	<b>\$0.4 bn.</b>  32 %
<b>Vulnerability management</b> → Small product area	<b>\$0.9 bn.</b>  7 %
<b>Cyber security services</b> → Important, growing area	<b>\$19.0 bn.</b>  10 %

# 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 information 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 in turmoil in recent years where the company is transforming 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. At the same time, the monetary definition of the sanctions provide cyber criminals with a price tag, which they can use to blackmail companies after a successful hacking operation. 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 investments in the sector in recent years, which is visible as dramatic growth in capital investments in new cyber security companies and as high M&A transaction activity both in North America and Europe. The industry is highly fragmented and consolidation is bound to continue as, despite the growth, there is not room for all current players on the market if it starts maturing in the future. The risk we see is that the industry is currently over invested, which may, in future, become visible as further tightening competition and in the sector's profitability as new players enter the competition with new solutions that try to solve cyber security problems more efficiently and/or cheaply than the competition. Many players in the sector are generating heavy losses and their lifeline of external financing will end if they cannot generate growth or profitability.

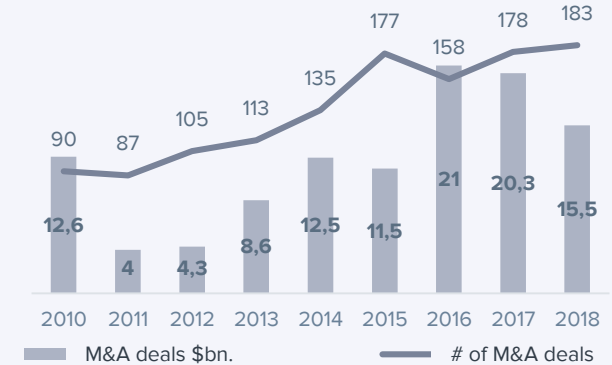
The investment pressure in the sector has resulted in the valuation of corporate acquisitions remaining high, which in part makes it difficult for F-Secure to complete acquisitions that generate shareholder value. The EV/Sales ratios of acquisitions have at best risen to 5x for service companies and to 10x for product companies, which can be seen as extremely high levels. 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.

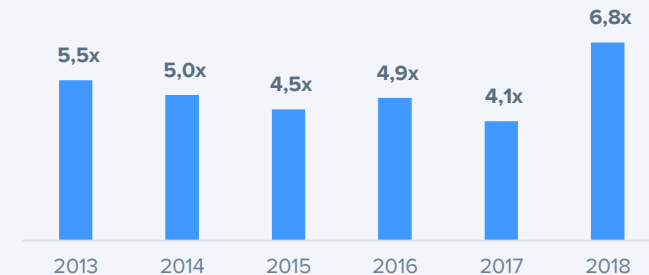
We believe that F-Secure will continue to be part of the industry consolidation as a buyer but currently the integration of MWR-acquisition and the high valuation levels in the sector hinder acquisition plans to some degree.

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.

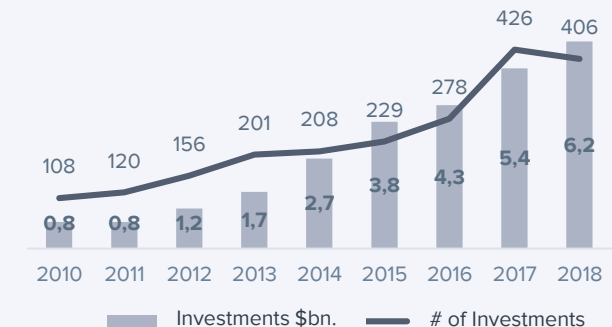
Cyber security M&A deals



Median EV/S-multiple of transactions



VC investments into cyber security companies

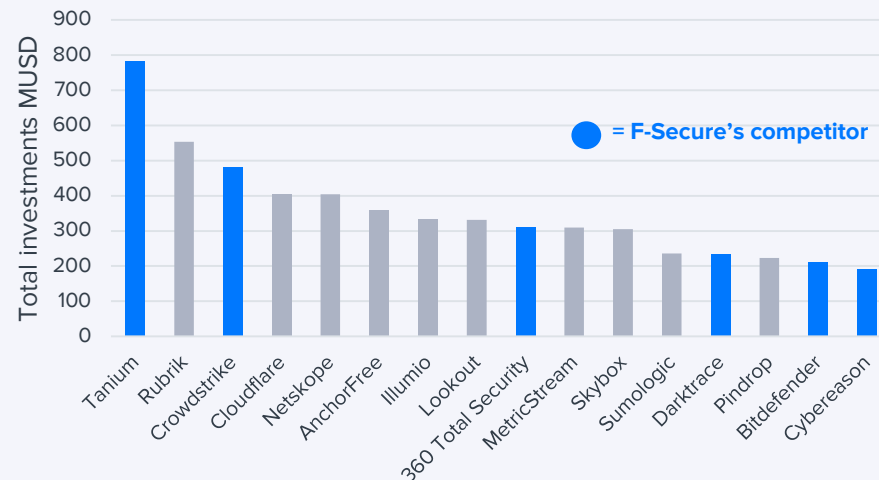


# M&A and investments in the industry

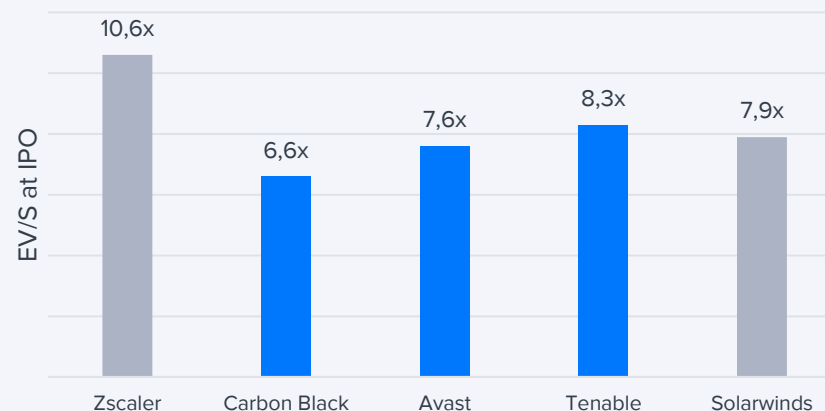
## Highlighted acquisitions in the sector

Date	Buyer	Target	EV (MUSD)	EV/Sales
5/2019	Orange	SecureLink	576	2,1x
2/2019	Carbonite	Webroot	618	2,9x
2/2019	Palo Alto Networks	Demisto	560	46,7x
11/2018	BlackBerry	Cylance	1 500	11,5x
10/2018	Thoma Bravo Fund	Imperva	1 800	5,2x
8/2018	Shearwater Group	Brookcourt Solutions	40	1,4x
8/2018	Cisco Systems	Duo Security	2 350	18,8x
6/2018	F-Secure	MWR Infosecurity	100-130	2,9x-3,9x
12/2017	Thales	Gemalto	5 541	1,8x
11/2017	Warburg Pingus	Cyren	119	3,8x
11/2017	Thoma Bravo Fund	Barracuda Networks	1 405	3,8x
7/2017	Open Text Corporation	Guidance Software	245	2,1x
3/2017	Crossrider	CyberGhost	10	4,5x
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

## Cyber security companies that have raised most VC money



## Cyber security IPOs in 2018





# 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 industry start-ups that often are specialized in a particular niche segment of cyber security with their services or products.

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. 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 the customer segment of medium sized and large enterprises, the uniformity of the product portfolio is an emphasized competition factor as the customers rather purchase all of their cyber security needs at once as a comprehensive solution instead of several point product solutions. The customers understand that they cannot protect themselves from threats by buying individual technologies and management of wholes is emphasized.

## 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 (RDS and 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)	✓✓✓	<b>SOPHOS</b> <b>TREND MICRO</b> <b>McAfee</b> <b>Symantec.</b> <b>KA\$PER\$KY3</b> <b>panda</b> <b>Bitdefender</b>	<b>FireEye</b> <b>SentinelOne</b> <b>cybereason</b> <b>TANiUM</b> <b>CYLANCE</b> <b>ESET</b> <b>CROWDSTRIKE</b> <b>Carbon Black.</b> <b>GUIDANCE SOFTWARE</b> <b>Microsoft</b>
Endpoint detection and response (EDR)	✓✓	<b>DARKTRACE</b> <b>FireEye</b> <b>CROWDSTRIKE</b> <b>Carbon Black.</b> <b>TREND MICRO</b> <b>Symantec.</b>	<b>TANiUM</b> <b>KA\$PER\$KY3</b> <b>cybereason</b> <b>CYLANCE</b> <b>McAfee</b> <b>GUIDANCE SOFTWARE</b> <b>panda</b> <b>SentinelOne</b>
Managed detection and response (MDR)	✓✓	<b>DARKTRACE</b> <b>Carbon Black.</b> <b>CROWDSTRIKE</b> <b>RAPID7</b>	<b>FireEye</b> <b>SentinelOne</b> <b>cybereason</b> <b>paloalto NETWORKS</b> <b>Microsoft</b>
Cyber security services	✓✓	No individual main competitors	<b>FireEye</b> <b>RAPID7</b> <b>NIXU cybersecurity.</b> <b>CROWDSTRIKE</b> <b>KA\$PER\$KY3</b> <b>nccgroup</b> <b>Symantec.</b> <b>McAfee</b> <b>SecureLink</b> <b>CGI</b>
Vulnerability management	✓	<b>RAPID7</b> <b>Qualys.</b> <b>tenable</b>	



# 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 new CEO, Samu Kontinen, 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.

On the whole, the company's transformation has proceeded well so far, and with the MWR acquisition, the company's profile became clearly that of a growth company in corporate security. However, the company still has work to do in the next couple of years in unifying its product and service offering and developing its sales channel

for corporate products.

## Financial targets

F-Secure's objective in the strategy period 2018 to 2021 is to increase the net sales of corporate security by over 15% per year. The company has not specified whether the objective is for organic growth or includes acquisitions. In 2018–2019, the growth objective will be reached with the growth obtained from the MWR acquisition alone.

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 segment and market shares are handed out in new product areas, so we feel that aiming for growth at this stage is smart for F-Secure and,

if successful, will generate shareholder value. We feel that the company has realistic possibilities to reach the targeted growth rate in corporate security as the product portfolio expands, which is also supported by the growth track record of late (2016: +20%, 2017: +16%, 2018: +33%)

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, 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. 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.

# Strategy 2/2

## 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 to which the transaction involves an earn-out component of a maximum of GBP 25 million (EUR 28.6 million). Depending on the earn-out, the EV/Sales multiple of the acquisition is approximately 2.9x–3.9x, 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 (Q2/19: equity ratio 44%, gearing 33%) 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 integration of the MWR acquisition 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

# Historical development

## Growth and earnings development 2015-2018

In 2015, F-Secure shifted the focus of its business more heavily into cyber security solutions as a result of its new strategy, and sold the cloud storage business to Synchronoss Technologies for EUR 52 million (F-Secure paid EUR 30 million for the business in 2009). F-Secure started to invest heavily in the rapidly growing corporate security markets by recruiting cyber security consultants and sales personnel and acquiring the Danish cyber security service and product company nSense. In addition, the company made two smaller acquisitions in 2017. In summer 2018, the company accelerated the growth in corporate security with the MWR acquisition, the inorganic growth impact of which will partly continue to be visible in 2019. The growth investments have borne fruit, and corporate security net sales have grown from EUR 46 million in 2014 to EUR 95.9 million by 2018, with the average annual growth being 20.1%. During this time, the company has grown moderately in consumer security, by approximately 0.8% annually, and consumer security net sales amounted to EUR 94.9 million in 2018.

The company accelerated its growth investments in accordance with its strategy in 2017-2018, which is visible in the company's profitability. The EBIT margin decreased to 2.4 % in 2018 (adj. EBIT-% 5.6%) having been 12.2 to 13.6 % in 2015 to 2016. Investments in growth continue also in 2019, which will continue to depress profitability. F-Secure capitalizes product development costs very conservatively in its balance sheet, which means that growth investments are primarily made directly from the result. 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 79.4% in 2018. The company records the costs of providing cloud-based services and customer support, direct costs of providing cyber security services and sales freight 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 95 million, or 49.8% of the company's net sales, in 2018. The cost item is comprised of personnel wages and salaries, marketing expenses, sales commissions paid to the reseller network 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 35.7 million, or 18.7% of the company's net sales, in 2018. 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 4.7 million in 2018 (2017: EUR 3.9 million).

Administrative expenses amounted to EUR 18.3 million, or 9.6% of net sales, in 2018. 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. 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 tie capital in the company's balance sheet. The growth rate of advances received will probably slow down somewhat in future as customers favor contracts based on monthly billing over multiannual fixed-term license agreements.

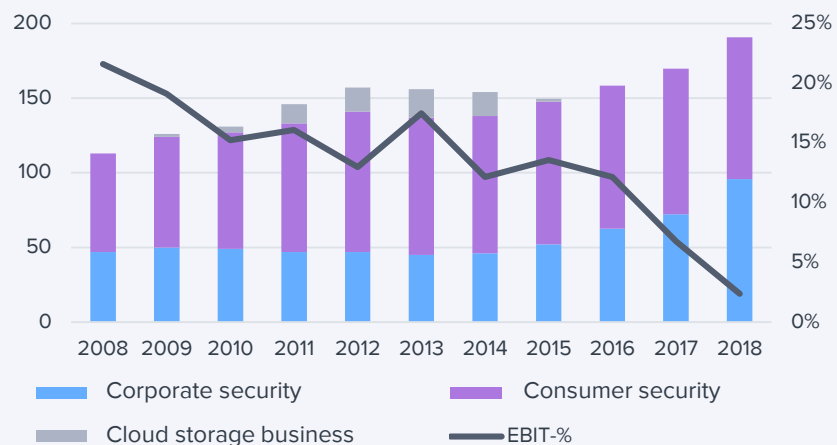
## Balance sheet and financial position

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 2018, the company's net gearing was approximately 14% and equity ratio approximately 43%. The balance sheet total was EUR 228 million. The goodwill from acquisitions shown on the balance sheet totalled EUR 91 million. The company uses a high WACC of approximately 12% for testing goodwill, and we do not consider the risk of impairment of goodwill to be probable. Other intangible assets totalled EUR 38 million. In other respects, the balance sheet assets were primarily comprised of cash (EUR 28 million) and receivables (EUR 57 million).

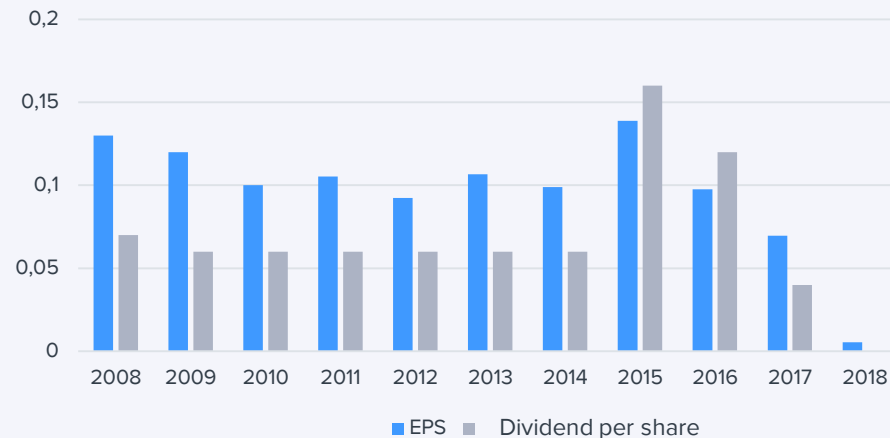
The liabilities side of the balance sheet was mainly comprised of shareholders' equity (EUR 66 million) and long-term (EUR 38 million) and short-term (EUR 85 million) non-interest-bearing liabilities. Of the non-interest-bearing liabilities, advances received accounted for EUR 73 million. The company financed its MWR acquisition partly with interest-bearing debt, which totalled EUR 37 million at the end of 2018.

# Historical development

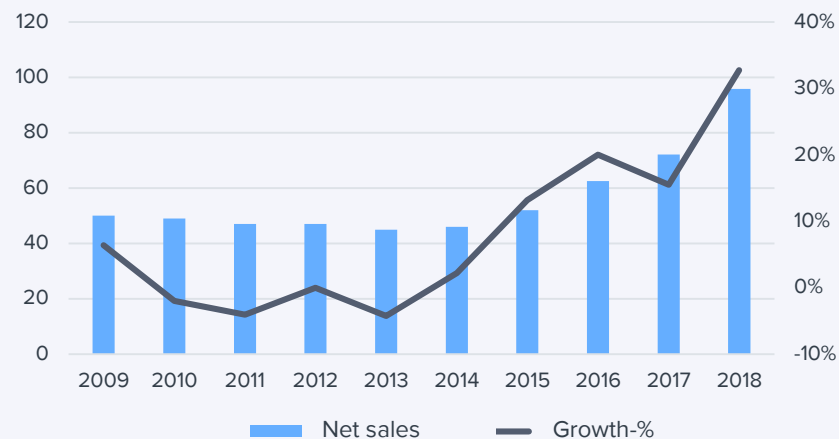
## Net sales and profitability



## EPS and Dividend per share



## Corporate security net sales and growth%

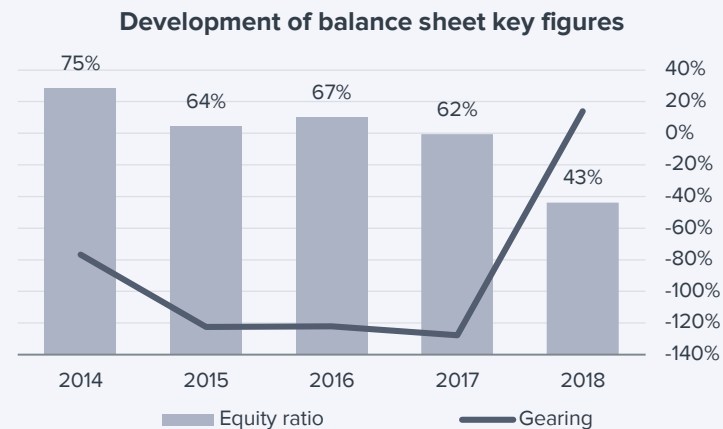


## Consumer security net sales and growth%



## Financial position

Balance Sheet			
Assets	2018 (MEUR)		Equity and liabilities
5,4	Other items	Other items	6,1
23,3	Intangibles from acquisitions	Short-term interest bearing debt	6,1
27,8	Cash	Non-interest bearing current liabilities	84,9
4,0	Deferred tax assets		
56,7	Sales receivables		
5,2	Tangible assets	Long-term interest bearing debt	31,0
15,0	Intangible assets	Long-term liabilities (non-interest bearing)	33,7
90,7	Goodwill	Equity	66,3



# Estimates and valuation 1/4

## Estimates

### Basis for the estimates

The financial objectives of F-Secure's strategy period 2018 to 2021 act as the basis for our estimates as we feel that the company reaching its own targets is a realistic scenario. In corporate security, an annual growth target of over 15% requires continued strong demand for the company's cyber security services, success of the MDR products (RDS and Countercept) and a successful ramp-up of the EDR product. The EDR product offers an attractive additional sales opportunity in F-Secure's endpoint protection customer segment. Integration of the product portfolio and development of the retailer channel are also key in order for the company to become better involved in the market segment of medium sized companies to offer more comprehensive product/service solutions. We expect that the company will reach its growth objective in 2019 driven by the MWR acquisition, but we forecast a 13% growth in corporate security in 2020–2021, reflecting our forecasts changed in a more cautious direction following the growth disappointments last year.

In consumer security, we expect the company's growth rate during the strategy period to be steady at 1% as the company focuses more on good profitability with which to support growth on the corporate side. The company's cyber security router Sense, if successful, offers an interesting growth option in consumer security in the long-term but at this stage it cannot be given much weight as the maturity of the market for such a product is still hard to evaluate.

### Short-term estimates

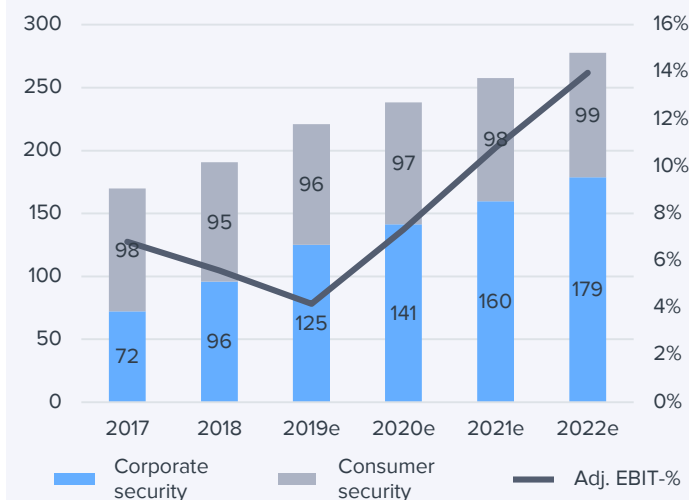
F-Secure estimates that corporate security net sales will increase by more than 30% in 2019 while consumer protection net sales will remain unchanged from 2018. The company estimates its adjusted EBITDA to exceed EUR 21 million, including the effect of IFRS 16. Our forecast is aligned with the company's guidance, and we expect corporate security net sales to increase by 30.4% to EUR 125 million and consumer security net sales to increase by 1% to EUR 96 million. We estimate the adjusted EBITDA to be EUR 22.4 million and adjusted EBIT to be EUR 9.2 million (adj. EBIT % 4.2%). In our forecast, the reported earnings per share will be low, EUR 0.03, and therefore we expect the company not to pay out dividends, similarly to the previous year.

### Estimates for the latter part of the strategy period

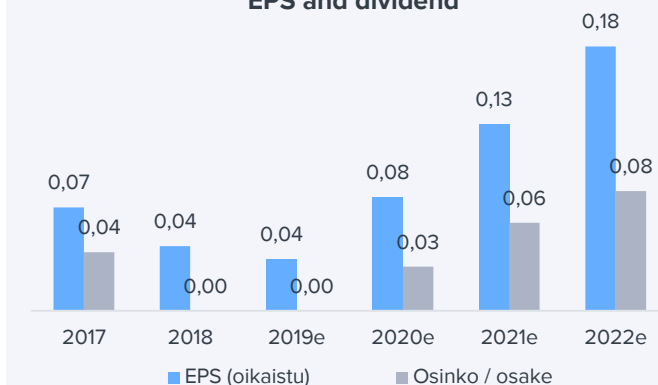
In 2020–2021, we estimate that F-Secure will reach a growth of 13% in corporate security net sales, with net sales increasing to EUR 160 million. According to our estimate, the share of corporate security of the company's net sales has increased to 62% at this point (2018: 50%). We expect consumer security net sales to remain at a steady 1% growth, with net sales of EUR 98 million in 2021.

Our forecast is that F-Secure's scalable business model will be gradually reflected in the company's profitability in future years. For 2020–2021, we estimate the adjusted EBIT % to be 7.3% and 10.8%, respectively. We have adjusted the EBIT for the depreciation of intangible assets associated with the MWR acquisition, estimated at slightly under EUR 4 million annually.

### Net sales and profitability



### EPS and dividend



## Estimates and valuation 2/4

We estimate that the biggest improvement in profitability will be the result of increasing gross margin and the scaling-up of sales and marketing expenses with growth. According to our forecast, adjusted earnings per share will increase to EUR 0.13 in 2021.

### Long-term estimates

We expect that corporate security will grow by 12% in 2022. After this, the growth rate in corporate security will begin to level gradually from 10% to 4% during 2023–2027 according to our estimate. We expect consumer security to continue to grow by 1% annually during this time range. We estimate that the perpetual net sales growth required in the DCF model will be 2.5% from 2027 onwards.

We estimate that F-Secure's adjusted EBIT margin will be 14% in 2022 and after this settle down at the level of some 16–17%, reflecting good profitability following the success of the company's growth strategy. Before the current strategy period, the company had an adjusted EBIT of 15.0–17.5% in 2010–2015, compared to which the profitability estimate seems realistic. In 2008–2009, the company reached an EBIT margin of more than 19%, but at this stage, we want the company to first provide evidence of the successful implementation of the strategy and with it, higher profitability potential than our current estimate.



# Estimates

Income statement	2017	Q1'18	Q2'18	Q3'18	Q4'18	2018	Q1'19	Q2'19	Q3'19e	Q4'19e	2019e	2020e	2021e	2022e
Revenue	170	43,1	43,4	50,5	53,7	191	53,4	54,1	55,3	58,3	221	238	258	278
Yritystietoturva	72,2	19,4	20,0	26,7	29,8	95,9	29,4	30,1	31,2	34,3	125	141	160	179
Kuluttajatietoturva	97,5	23,7	23,4	23,8	24,0	94,9	24,0	24,0	24,0	24,0	96,0	97,0	98,0	99,0
Käyttökate ilman kertaeriä	17,8	3,8	2,7	6,0	4,9	17,4	5,0	4,8	6,0	6,6	22,4	30,1	39,6	52,7
EBITDA	17,8	3,8	2,1	3,3	4,6	13,8	5,0	13,9	6,0	6,6	31,6	30,1	39,6	52,7
Depreciation	-6,3	-1,6	-1,6	-2,9	-3,2	-9,3	-4,4	-10,7	-4,4	-4,4	-23,8	-16,2	-15,5	-17,6
EBIT (excl. NRI)	11,5	2,3	1,1	4,3	2,9	10,6	1,7	1,4	2,7	3,3	9,2	17,4	27,8	38,8
EBIT	11,5	2,3	0,5	0,4	1,4	4,5	0,6	3,3	1,6	2,2	7,7	13,9	24,1	35,2
Net financial items	0,8	-1,0	-0,6	-0,3	-0,9	-2,8	-1,5	0,1	-0,3	-0,3	-2,0	-1,2	-1,0	-0,8
PTP	12,4	1,3	-0,1	0,1	0,5	1,7	-1,0	3,4	1,3	1,9	5,7	12,7	23,1	34,3
Taxes	-1,3	-0,7	0,0	0,7	-0,9	-0,9	-0,4	0,0	-0,3	-0,5	-1,2	-3,2	-5,8	-8,6
Net earnings	11,1	0,6	-0,1	0,8	-0,4	0,8	-1,4	3,4	1,0	1,5	4,5	9,5	17,3	25,8
EPS (adj.)	0,07	0,00	0,00	0,03	0,01	0,04	0,00	0,01	0,01	0,01	0,04	0,08	0,13	0,18
EPS (rep.)	0,07	0,00	0,00	0,00	0,00	0,01	-0,01	0,02	0,01	0,01	0,03	0,06	0,11	0,16

Key figures	2017	Q1'18	Q2'18	Q3'18	Q4'18	2018	Q1'19	Q2'19	Q3'19e	Q4'19e	2019e	2020e	2021e	2022e
Revenue growth-%	7,2 %	5,7 %	0,1 %	22,6 %	20,9 %	12,4 %	23,8 %	24,8 %	9,5 %	8,4 %	15,9 %	7,8 %	8,1 %	7,8 %
Adjusted EBIT growth-%	-39,8 %	45,5 %	-49,6 %	7,1 %	-21,6 %	-7,9 %	-22,4 %	24,1 %	-36,9 %	13,6 %	-13,5 %	89,6 %	59,3 %	39,5 %
EBITDA-%	10,5 %	8,8 %	4,9 %	6,5 %	8,6 %	7,2 %	9,3 %	25,8 %	10,9 %	11,4 %	14,3 %	12,6 %	15,4 %	19,0 %
Adjusted EBIT-%	6,8 %	5,2 %	2,6 %	8,6 %	5,5 %	5,6 %	3,3 %	2,5 %	5,0 %	5,7 %	4,2 %	7,3 %	10,8 %	14,0 %
Net earnings-%	6,5 %	1,3 %	-0,3 %	1,5 %	-0,7 %	0,4 %	-2,5 %	6,2 %	1,8 %	2,5 %	2,0 %	4,0 %	6,7 %	9,3 %

Source: Inderes

# Estimates and valuation 3/4

## Valuation

### Investment view

We retain our recommendation (accumulate) and target price of 2.9 EUR. F-Secure is a high quality company in the market of which has attractive long-term growth outlooks and fundamentals. We feel the company has a believable and good strategy which clearly focuses on the generation of shareholder value and progresses with controlled risks. The company also has preliminary proof of the strategy working. To our minds, the F-Secure share has room for growth as the company's growth strategy based on corporate security will proceed as planned, also with regard to our sum of the parts calculation.

### Valuation multiples

With our current estimates, F-Secure's earnings-based multiples remain on a high level throughout the current strategy period as the growth investments burden the company's financial performance. The valuation gives a very different picture depending on whether we view the company from the point of view of revenue or earnings-based multiples. The valuation cannot be based on either option alone because the company will constantly balance between growth and profitability depending on which generates more shareholder value in its opinion.

F-Secure's 2019 and 2020 P/E ratios are 72x and 33x and the corresponding EV/EBIT ratios are 45x and 24x. In 2021, when the scalability of the company's business model will, according to our estimates, raise the company's profitability to the moderate level (adj. EBIT-% 10.8 %), the P/E ratio will be 20x and EV/EBIT 14x based on our

estimates. These multiples can still not be seen as cheap and, in order to materialize, they require moderate success of the company's strategy, which naturally involves risks. When examining only earnings-based multiples, it seems that there is no clear upside potential in F-Secure's share.

The growth expectations placed on F-Secure's share can be illustrated by estimating the company to reach an adjusted EBIT % of 15–20% reflecting a mature phase already in 2021. Based on our current growth estimates, the company's P/E would in this case be approximately 10x–13x. These multiples are already at an attractive level, and based on this, the growth expectations placed on F-Secure's share are currently relatively moderate.

With the EV/Sales ratio, F-Secure's valuation is more modest compared to earnings multiples. With our estimates, the company's EV/Sales multiples are 1.9x and 1.7x for 2019 and 2020. F-Secure's EV/Sales multiple has varied between 1.6x and 3.1x in 2013 to 2018 with a median of 2.0x. The company's net sales-based valuation is below the historical level of the company, even though the company is considerably more ready in terms of its strategic development phase; in addition, the company's growth outlook is considerably clearer than in previous years. The valuation is also significantly below the company's peers, which we will discuss in more detail below.

### Peer group

We have collected listed cyber security companies into F-Secure's peer group, most of which are F-Secure's direct competitors or compete, at least to some extent, with F-Secure in a particular product area. The companies in the peer group are, for the most part, clearly larger than F-Secure and this

should be reflected in F-Secure's pricing compared to the peer group. The companies are also at various stages in terms of business development, which is visible in the growth and profitability profiles of the companies and, to some extent, makes it difficult to compare the companies' valuation level and reflect them on the valuation level of F-Secure.

This year, F-Secure's EV/EBIT and P/E ratios are 39-57% above and next year they are 10-16% below the peer group's median, which is already at a high level. Measured by EV/Sales multiple, F-Secure is valued at a discount of around 70% compared to its peers. The sales-based valuation of the peers is high (2019 to 2020 6.2x-5.5x) and we see a risk that the market does not necessarily accept this high levels for the companies in future but the multiples will have to normalize as net sales grow.

F-Secure's net sales-based undervaluation is highly illustrative of the company's current development phase, where growth investments in corporate security burden the earnings, but due to the slow growth in consumer security, the company's overall growth falls short of several rapidly growing peers, which partly justifies the lower sales multiple. A large share of F-Secure's business is still comprised of consumer business and slower-growing EPP products, and therefore the company cannot be profiled into the same category with the hottest companies. To our minds, however, the EV/S-based valuation difference has already become blatantly high. We see room for growth in F-Secure's relative valuation level, with the company's strategy proceeding and growth taking place this year.

# Estimates and valuation 4/4

## Sum of the parts

We illustrate F-Secure's valuation using the Sum of the parts method (calculations on the following page). The method requires certain assumptions, but it works as one point of view to valuation due to the different development phases of the company's consumer and corporate businesses.

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 (very strong growth, loss-making). On the whole, corporate security grows rapidly, but growth investments in the MDR and EDR products in particular weigh down its profitability to a negative value. However, growth creates shareholder value in the long term, and therefore corporate security must be valued based on sales-multiple at the moment. Yet, corporate security product/service areas have to be priced using very different valuation multiples due to the different growth, scalability and profitability profiles.

To our minds, consumer security should be priced earnings-based in the market due to its slow growth but good profitability. F-Secure does not report on the profitability of its businesses separately, so we need to make assumptions with regard to it. We estimate that the EBIT-% of consumer security will be 16–20%, which indicates moderate profitability for business in a mature phase. We set the acceptable EV/EBIT multiple for consumer security at 9x–11x, which reflects the factors for peer companies with a similar profile (Symantec, Trend Micro). With the 18% profitability and EV/EBIT factor of 10x in the neutral scenario,

the value of the consumer business is EUR 171 million, with the range being EUR 137–209 million.

With regard to consumer security, F-Secure specifies the share of consulting and products of net sales, and we have estimated the weight of the different product areas in the company's business based on this. We estimate that endpoint protection products (EPP) net sales will amount to approximately EUR 56 million this year and apply EV/S multiple of 1.4x–2.2x to this product area. We estimate that consulting net sales will amount to EUR 49 million and we have set the acceptable EV/S multiple to the range of 1.2x–2.0x. The neutral-scenario factor (1.6x) is aligned with the valuation level we have accepted for the cyber security service company Nixu. We estimate that the net sales of strategically important MDR/EDR products will be approximately EUR 20 million this year. Considering the very strong growth outlook of the products, we accept EV/Sales multiple of 4x–6.0x for them. The neutral-scenario factor (5.0x) indicates a discount of approximately 20% compared to F-Secure's peers. Applying the above-mentioned net sales forecasts for 2019 and EV/S-multiples, the value of corporate security in the neutral scenario is EUR 280 million, with the range being EUR 218–343 million.

By deducting F-Secure's estimated net liabilities for 2019 (EUR 12 million) from the values of the businesses, the market capitalisation of F-Secure in the neutral scenario would be EUR 442 million, or EUR 2.8 per share. The ranges of the pessimistic and optimistic scenarios are EUR 345–542 million, or EUR 2.2–3.4 per share.

We have also calculated the value of F-Secure's parts with our estimates for 2020, using the same

valuation multiples as in the calculation above. The method illustrates how the company's value and value creation are based on corporate security in the current strategy, and particularly on the growth rate of MDR/EDR products. In the calculation, we estimate the net sales of EPP products to increase by 2%, consulting by 12% and MDR/EDR products by 44%. With the 2020 estimates, the market capitalisation of F-Secure in the neutral scenario would be EUR 504 million, or EUR 3.2 per share. The ranges of the pessimistic and optimistic scenarios are EUR 395–618 million, or EUR 2.5–3.9 per share. Based on our sum of the parts calculation, the F-Secure share has room for growth as the company's strategy will proceed as planned in future years.

The risk with the sum of the parts calculation is currently the high valuation levels of cyber security companies. A decrease in the valuation multiples acceptable for the companies would be negatively reflected in the valuation of F-Secure's corporate security with regard to MDR/EDR products in particular, for which we currently accept high multiples.

## DCF-model

The enterprise value (EV) for F-Secure according to our DCF model is EUR 480 million and equity value is EUR 470 million, or EUR 3.0 per share. Our perpetual assumption is that operating profit % is 16% and growth 2.5%. The cost of capital (WACC) in the DCF model is 9.2%. The weight of the perpetual assumption (terminal) is 63% of the enterprise value, which in part indicates that a majority of F-Secure's value will be generated from future cash flow long in the future, which increases uncertainty.

# Sum of the parts calculation

## SOTP with 2019 estimates

Consumer security	Pessimistic	Neutral	Optimistic
Estimated EBIT-%	16 %	18 %	20 %
EBIT 2019e (MEUR)	15	17	19
x valuation multiple (EV/EBIT)	9,0x	10,0x	11,0x
<b>Enterprise value (EV)</b>	<b>138</b>	<b>173</b>	<b>211</b>


Corporate security	Pessimistic	Neutral	Optimistic
Net sales 2019e	125	125	125
EPP net sales estimate	56	56	56
x valuation multiple (EV/S)	1,4x	1,8x	2,2x
<b>EPP value</b>	<b>78</b>	<b>101</b>	<b>123</b>

Consulting net sales estimate	49	49	49
x valuation multiple (EV/S)	1,2x	1,6x	2,0x
<b>Consulting value</b>	<b>59</b>	<b>78</b>	<b>98</b>

MDR and EDR net sales estimate	20	20	20
x valuation multiple (EV/S)	4,0x	5,0x	6,0x
<b>MDR and EDR value</b>	<b>81</b>	<b>101</b>	<b>121</b>

<b>Corporate security EV</b>	<b>218</b>	<b>280</b>	<b>343</b>
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Sum of the parts	Pessimistic	Neutral	Optimistic
Consumer security	138	173	211
Corporate security	218	280	343
<b>Enterprise value (EV)</b>	<b>357</b>	<b>453</b>	<b>554</b>
- Net debt 2019e	12	12	12
<b>Value of equity</b>	<b>345</b>	<b>442</b>	<b>542</b>
Equity value per share	2,2	2,8	3,4

 Growth in MDR/EDR products is the main value driver

## SOTP with 2020 estimates

Consumer security	Pessimistic	Neutral	Optimistic
Estimated EBIT-%	16 %	18 %	20 %
EBIT 2020e (MEUR)	16	17	19
x valuation multiple (EV/EBIT)	9,0x	10,0x	11,0x
<b>Enterprise value (EV)</b>	<b>140</b>	<b>175</b>	<b>213</b>

Yritystietoturva	Pessimistic	Neutral	Optimistic
Net sales 2020e	141	141	141
EPP net sales estimate	58	58	58
x valuation multiple (EV/S)	1,4x	1,8x	2,2x
<b>EPP value</b>	<b>81</b>	<b>104</b>	<b>128</b>

Consulting net sales estimate	55	55	55
x valuation multiple (EV/S)	1,2x	1,6x	2,0x
<b>Consulting value</b>	<b>66</b>	<b>88</b>	<b>110</b>

MDR and EDR net sales estimate	29	29	29
x valuation multiple (EV/S)	4,0x	5,0x	6,0x
<b>MDR and EDR value</b>	<b>117</b>	<b>146</b>	<b>175</b>

<b>Corporate security EV</b>	<b>264</b>	<b>339</b>	<b>413</b>
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Sum of the parts	Pessimistic	Neutral	Optimistic
Consumer security	140	175	213
Corporate security	264	339	413
<b>Enterprise value (EV)</b>	<b>404</b>	<b>513</b>	<b>627</b>
- Net debt 2020e	9	9	9
<b>Value of equity</b>	<b>395</b>	<b>504</b>	<b>618</b>
Equity value per share	2,5	3,2	3,9

# Peer group

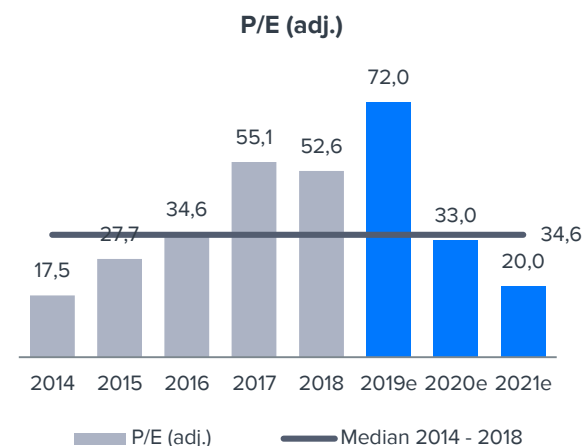
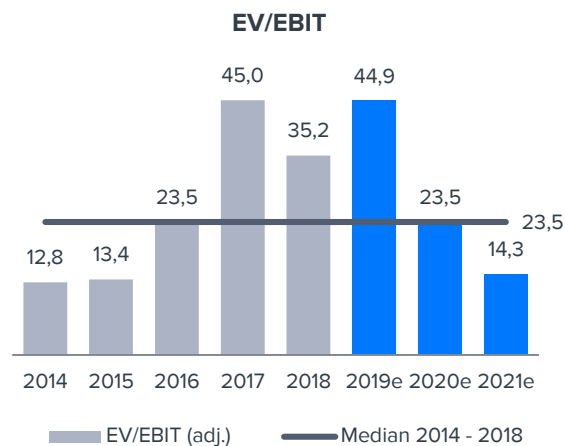
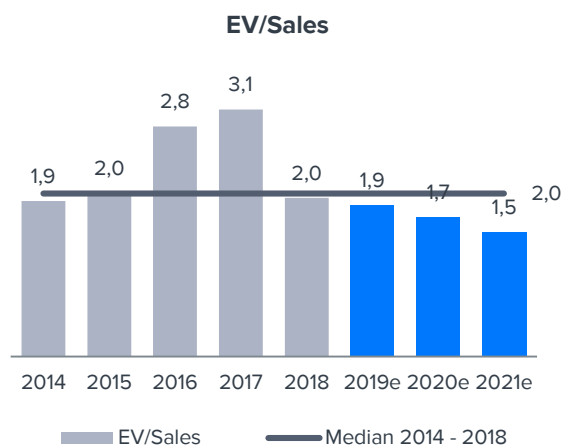
Peer group valuation	Share price	Market cap	EV	EV/EBIT		EV/EBITDA		EV/S		P/E		Dividend yield-%	
Company		MEUR	MEUR	2019e	2020e	2019e	2020e	2019e	2020e	2019e	2020e	2019e	2020e
FireEye Inc	15,55	2786	2648	77,7	37,4	38,5	24,3	3,3	3,1	100,0	50,7		
Symantec Corp	23,16	12611	14747	11,4	11,0	10,2	9,9	3,5	3,5	14,4	13,6	1,3	1,3
Trend Micro Inc	4820,00	5598	4300	13,3	12,4	9,4	8,8	3,1	2,9	23,0	21,3	3,6	3,8
Sophos Group PLC	450,30	2389	2508	30,2	31,8	25,5	22,3	4,0	3,7	33,7	37,8	0,9	1,0
Rapid7 Inc	63,50	2702	2636		142,8	266,1	89,7	9,4	7,7		163,0		
Fortinet Inc	88,31	13093	11495	27,0	22,9	23,9	20,2	6,2	5,5	40,3	35,8		
Cyberark Software Ltd	141,17	4676	4263	46,6	38,8	42,9	35,7	11,5	9,7	64,7	55,0		
Palo Alto Networks Inc	224,20	18924	17615	31,1	25,5	25,9	21,7	6,9	5,8	41,2	35,7		
Check Point Software Technologies	117,77	15782	14222	16,0	15,3	15,8	15,1	8,0	7,7	19,3	18,1		
Qualys Inc	89,62	3064	2800	32,4	27,3	25,5	21,6	9,8	8,4	45,7	39,9		
Proofpoint Inc	124,83	6178	5950	72,8	46,4	50,0	37,1	7,6	6,3	84,8	62,3		
NCC Group PLC	173,60	532	587	15,5	13,4	11,9	10,5	2,1	1,9	19,6	16,7	2,8	3,1
Nixu Oyj	11,60	88	86	86,2	28,7	43,1	17,2	1,5	1,3	113,3	29,4	0,1	0,3
Carbon Black Inc	18,73	1178	1042					4,8	4,1				
Avast PLC	339,60	3627	4623	11,6	10,9	11,0	10,4	6,1	5,7	14,1	12,9	2,9	3,4
SolarWinds Corp	18,83	5204	6523	17,0	15,0	16,4	14,3	7,8	7,0	23,3	20,4		
SecureWorks Corp	12,93	955	857			81,9	419,2	1,9	1,8				
ForeScout Technologies Inc	39,32	1536	1435				101,3	4,4	3,6				
Splunk Inc	139,64	18432	17526	95,8	61,4	76,0	52,8	11,3	8,7	118,3	76,5		
Mimecast Ltd	48,79	2673	2641	113,1	70,2	55,1	41,8	8,8	7,1	184,1	115,5		
SailPoint Technologies Holdings Inc	20,92	1644	1567	98,1	55,9	81,7	53,6	6,3	5,5	138,7	74,2		
<b>F-Secure (Inderes)</b>	<b>2,55</b>	<b>401</b>	<b>413</b>	<b>44,9</b>	<b>23,5</b>	<b>13,1</b>	<b>13,7</b>	<b>1,9</b>	<b>1,7</b>	<b>72,0</b>	<b>33,0</b>	<b>0,0</b>	<b>1,2</b>
<b>Average</b>				<b>46,8</b>	<b>37,1</b>	<b>47,9</b>	<b>51,4</b>	<b>6,1</b>	<b>5,3</b>	<b>63,5</b>	<b>48,8</b>	<b>1,9</b>	<b>2,2</b>
<b>Median</b>				<b>31,1</b>	<b>28,0</b>	<b>25,9</b>	<b>22,0</b>	<b>6,2</b>	<b>5,5</b>	<b>41,2</b>	<b>36,8</b>	<b>2,1</b>	<b>2,2</b>
<b>Diff-% to median</b>				<b>44 %</b>	<b>-16 %</b>	<b>-49 %</b>	<b>-38 %</b>	<b>-70 %</b>	<b>-69 %</b>	<b>75 %</b>	<b>-10 %</b>	<b>-100 %</b>	<b>-47 %</b>

Source: Thomson Reuters / Inderes

# Valuation summary

Valuation	2014	2015	2016	2017	2018	2019e	2020e	2021e	2022e
Share price	2,25	2,47	3,48	3,89	2,32	<b>2,55</b>	<b>2,55</b>	<b>2,55</b>	<b>2,55</b>
Number of shares, millions	155,8	155,8	156,0	156,7	157,5	<b>157,7</b>	<b>157,7</b>	<b>157,7</b>	<b>157,7</b>
Market cap	357	392	544	610	365	<b>401</b>	<b>401</b>	<b>401</b>	<b>401</b>
EV	296	298	451	519	375	<b>413</b>	<b>410</b>	<b>398</b>	<b>380</b>
P/E (adj.)	17,5	27,7	34,6	55,1	52,6	<b>72,0</b>	<b>33,0</b>	<b>20,0</b>	<b>14,1</b>
P/E	22,2	32,0	34,6	55,1	>100	<b>89,5</b>	<b>42,3</b>	<b>23,2</b>	<b>15,6</b>
P/FCF	16,9	8,3	40,1	43,3	neg.	<b>neg.</b>	<b>&gt;100</b>	<b>22,1</b>	<b>14,2</b>
P/B	4,5	5,1	7,2	8,6	5,5	<b>5,7</b>	<b>5,0</b>	<b>4,3</b>	<b>3,7</b>
P/S	2,3	2,7	3,4	3,6	1,9	<b>1,8</b>	<b>1,7</b>	<b>1,6</b>	<b>1,4</b>
EV/Sales	1,9	2,0	2,8	3,1	2,0	<b>1,9</b>	<b>1,7</b>	<b>1,5</b>	<b>1,4</b>
EV/EBITDA	10,6	11,5	18,4	29,1	27,1	<b>13,1</b>	<b>13,7</b>	<b>10,0</b>	<b>7,2</b>
EV/EBIT (adj.)	12,8	13,4	23,5	45,0	35,2	<b>44,9</b>	<b>23,5</b>	<b>14,3</b>	<b>9,8</b>
Payout ratio (%)	161,1 %	158,2 %	119,5 %	56,7 %	0,0 %	<b>0,0 %</b>	<b>49,8 %</b>	<b>54,6 %</b>	<b>50,0 %</b>
Dividend yield-%	7,1 %	4,9 %	3,4 %	1,0 %	0,0 %	<b>0,0 %</b>	<b>1,2 %</b>	<b>2,4 %</b>	<b>3,2 %</b>

Source: Inderes



# DCF-model

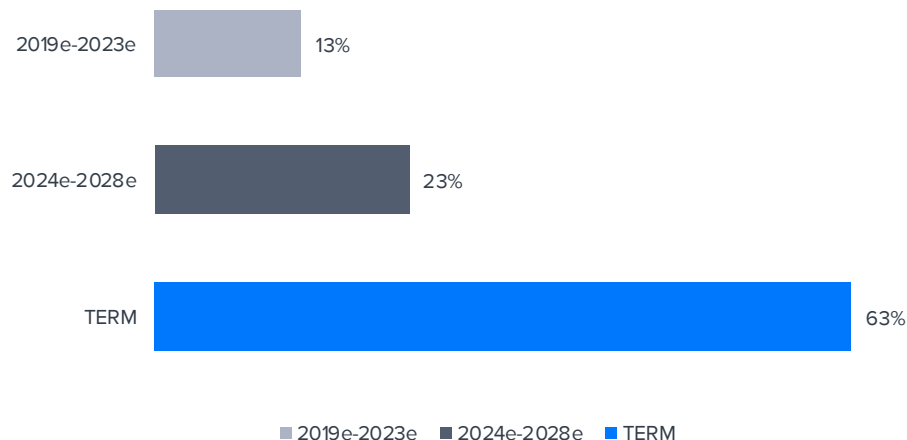
DCF model	2018	2019e	2020e	2021e	2022e	2023e	2024e	2025e	2026e	2027e	2028e	TERM
<b>EBIT (operating profit)</b>	<b>4,5</b>	<b>7,7</b>	<b>13,9</b>	<b>24,1</b>	<b>35,2</b>	<b>46,7</b>	<b>50,3</b>	<b>54,0</b>	<b>56,3</b>	<b>56,0</b>	<b>57,4</b>	
+ Depreciation	9,3	23,8	16,2	15,5	17,6	20,0	21,2	21,0	20,8	21,6	22,3	
- Paid taxes	2,0	-1,2	-3,2	-5,8	-8,6	-11,1	-12,0	-12,5	-13,0	-13,0	-13,3	
- Tax, financial expenses	-0,8	-0,5	-0,3	-0,3	-0,2	-0,2	-0,1	0,0	0,0	0,0	0,0	
+ Tax, financial income	0,1	0,0	0,0	0,0	0,0	0,0	0,1	0,1	0,1	0,1	0,1	
- Change in working capital	-5,8	4,6	2,5	4,6	4,9	4,5	2,4	1,3	1,6	1,7	1,4	
<b>Operating cash flow</b>	<b>9,3</b>	<b>34,5</b>	<b>29,1</b>	<b>38,2</b>	<b>48,8</b>	<b>60,0</b>	<b>61,8</b>	<b>63,8</b>	<b>65,8</b>	<b>66,4</b>	<b>67,9</b>	
+ Change in other long-term liabilities	13,9	-13,7	1,0	1,1	1,1	0,7	0,7	0,7	0,8	0,8	0,8	
- Gross CAPEX	-115,3	-21,5	-26,5	-21,1	-21,7	-22,4	-23,1	-23,3	-23,4	-23,9	-23,1	
<b>Free operating cash flow</b>	<b>-92,1</b>	<b>-0,8</b>	<b>3,6</b>	<b>18,1</b>	<b>28,2</b>	<b>38,3</b>	<b>39,5</b>	<b>41,3</b>	<b>43,1</b>	<b>43,3</b>	<b>45,6</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	-92,1	-0,8	3,6	18,1	28,2	38,3	39,5	41,3	43,1	43,3	45,6	695
<b>Discounted FCFF</b>		<b>-0,8</b>	<b>3,2</b>	<b>14,7</b>	<b>20,9</b>	<b>26,0</b>	<b>24,6</b>	<b>23,5</b>	<b>22,5</b>	<b>20,7</b>	<b>20,0</b>	<b>304</b>
Sum of FCFF present value		480	480	477	462	442	416	391	367	345	324	304
<b>Enterprise value DCF</b>		<b>480</b>										
- Interesting bearing debt		-37,1										
+ Cash and cash equivalents		27,8										
-Minorities		0,0										
-Dividend/capital return		0,0										
<b>Equity value DCF</b>		<b>470</b>										
<b>Equity value DCF per share</b>		<b>3,0</b>										

## Wacc

Tax-% (WACC)	25,0 %
Target debt ratio (D/(D+E))	0,0 %
Cost of debt	4,0 %
Equity Beta	1,10
Market risk premium	4,75 %
Liquidity premium	1,00 %
Risk free interest rate	3,0 %
<b>Cost of equity</b>	<b>9,2 %</b>
<b>Weighted average cost of capital (WACC)</b>	<b>9,2 %</b>

Source: Inderes

## Cash flow distribution



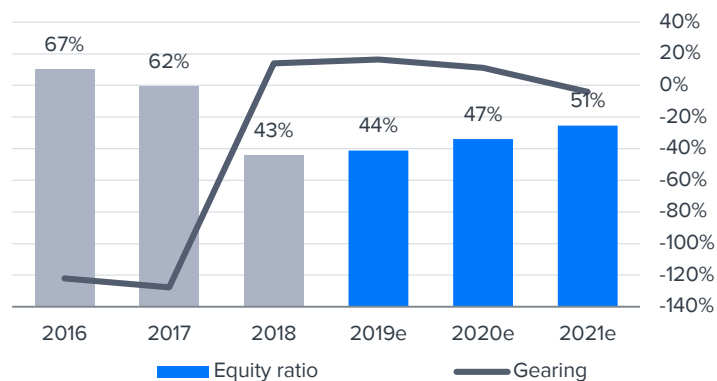
# Balance sheet

Assets	2017	2018	2019e	2020e	2021e
<b>Non-current assets</b>	<b>32,8</b>	<b>139</b>	<b>136</b>	<b>147</b>	<b>152</b>
Goodwill	10,1	90,7	85,2	91,2	91,2
Intangible assets	14,7	38,4	32,3	28,8	26,3
Tangible assets	3,2	5,2	14,5	22,2	30,3
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	0,7	0,5	0,5	0,5	0,5
Deferred tax assets	4,1	4,0	4,0	4,0	4,0
<b>Current assets</b>	<b>142</b>	<b>89,4</b>	<b>105</b>	<b>108</b>	<b>118</b>
Inventories	0,6	0,6	0,6	0,6	0,6
Other current assets	1,4	4,3	4,3	4,3	4,3
Receivables	50,1	56,7	65,7	70,8	74,7
Cash and equivalents	90,2	27,8	34,4	32,1	38,7
<b>Balance sheet total</b>	<b>175</b>	<b>228</b>	<b>241</b>	<b>254</b>	<b>271</b>

Source: Inderes

Liabilities & equity	2017	2018	2019e	2020e	2021e
<b>Equity</b>	<b>70,6</b>	<b>66,3</b>	<b>70,8</b>	<b>80,3</b>	<b>92,9</b>
Share capital	1,6	1,6	1,6	1,6	1,6
Retained earnings	67,6	63,1	67,6	77,1	89,7
Hybrid bonds	0,0	0,0	0,0	0,0	0,0
Revaluation reserve	0,6	0,2	0,2	0,2	0,2
Other equity	0,8	1,5	1,5	1,5	1,5
Minorities	0,0	0,0	0,0	0,0	0,0
<b>Non-current liabilities</b>	<b>22,5</b>	<b>70,0</b>	<b>61,3</b>	<b>59,3</b>	<b>57,3</b>
Deferred tax liabilities	1,4	4,1	4,1	4,1	4,1
Provisions	1,2	1,2	1,2	1,2	1,2
Long term debt	0,0	31,0	36,0	33,0	30,0
Convertibles	0,0	0,0	0,0	0,0	0,0
Other long term liabilities	19,9	33,7	20,0	21,0	22,1
<b>Current liabilities</b>	<b>82,0</b>	<b>91,7</b>	<b>109</b>	<b>115</b>	<b>120</b>
Short term debt	0,0	6,1	10,0	8,0	5,0
Payables	80,1	84,9	98,4	106	115
Other current liabilities	1,9	0,8	0,8	0,8	0,8
<b>Balance sheet total</b>	<b>175</b>	<b>228</b>	<b>241</b>	<b>254</b>	<b>271</b>

Development of balance sheet key figures





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Recommendation	Upside potential*
Buy	> 15 %
Accumulate	5 - 15 %
Reduce	-5 - 5 %
Sell	< -5 %

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## 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 €



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**2014, 2016, 2017**  
Recommendations



**2014, 2015, 2016, 2018**  
Recommendations  
& estimates



**2012, 2016, 2018**  
Recommendations



**2012, 2016, 2017, 2018**  
Recommendations  
& estimates



**2017**  
Recommendations



**2017**  
Recommendations



**2018**  
Estimates



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