F-Secure Oyj Buy

Potential upside ignored by the markets

We recommend Buy based on our valuation and analysis. Strong financials and underlying market fundamentals make an attractive investment case. F-Secure has changed its strategy and shown strong growth in competitive markets over the last years.

- **Business description:** F-Secure is a Finnish cyber security company focusing on device protection software (end-point protection). The company's focus has elevated from consumer customers to corporate customers during the last years. The company's consulting capabilities were strengthened through the acquisition of nSense in 2015.

- **Recent events:**

Apr 5, 2017	Annual General Meeting
Mar 3, 2017	Publication of Annual Report 2016
Jun 2, 2016	Samu Konttinen appointed as new CEO of F-Secure
Feb 16, 2016	New share-based incentive program
Jun 2, 2015	Acquisition of nSense, Nordic's leading cybersecurity firm
Feb 4, 2015	Divestment of Personal Cloud Business Operation

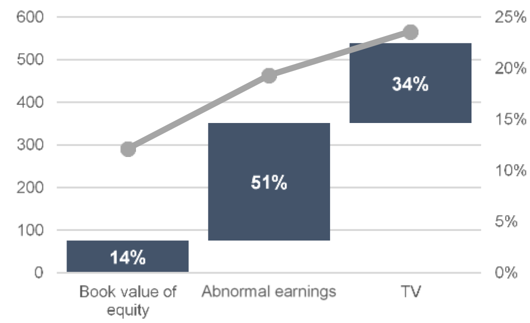
- **Cyber security & consulting drive growth.** F-Secure is pursuing growth in the rapidly growing corporate cyber security business. The growing consulting and new sophisticated protection services (e.g. EDR) create possibilities yet are a challenging and competitive segment at the same time. The growth in these business areas can be limited if the company cannot recruit extensively new professional consultants and gain notable references to succeed in the market of larger corporate customers. However, we see that F-Secure has excellent possibilities to overcome these challenges, for instance through acquisitions if the organic growth possibilities will not be enough.

- **Sound financial position & cash generation ability support future M&A.** F-Secure has no debt and has therefore excellent flexibility in the rapidly changing cyber security markets. The great cash flow generating business creates stable free cash flows despite the negative cash flows due to non-recurring residual tax payment in 2016. However, the company is currently increasing its cash balance and marketable securities balance strongly. We expect this to indicate active M&A activity in the future, which is a good way to complement the organic growth of F-Secure in the corporate business.

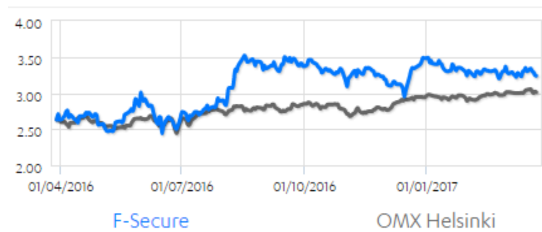
- **Summary:** the slight undervaluation of F-Secure stems from market scepticism towards management growth ambitions in the enterprise market. F-Secure's business is tremendously challenging to forecast due to fragmented market and rapidly changing competitive landscape.

Key data	
Price (EUR) - 24.3.2017	3.24
Target price, 12-month	3.75
Target price, %-increase	15.7%
All time high	19.40
Market cap (EURmn)	514.5
No. of shares	158,798,739
Ticker	FSC1V
PER	32.04

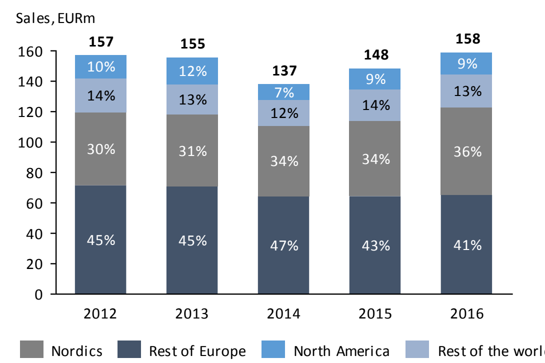
Intrinsic value at EUR 538.5m & EBIT-% on promising growth trajectory



Historical performance



Revenues by geography



1. Business description

F-Secure is an internationally operating information technology company specialized in cybersecurity. **Error! Reference source not found.**.1 shows the company's business model (IL17, AR16). *Consumer Security Products* on the right side of the figure have been the core of the company's offering since its listing in 1999. Over 200 telecommunication operators, retailers and the F-Secure's web shop sell the products to consumers, including micro firms. Most of the consumer sales are annual subscriptions, which implies a likely recurring revenue for the firm. F-Secure's product delivery is simple. Consumer end-users can download, install and take the product into use typically with little to no product support.

Most of the company's revenue comes from the F-Secure *SAFE* anti-malware product sales. *SAFE* can also protect smartphones and tablets, even though the current business is very much Windows PC based one. In addition, the *Freedome* privacy product and *Key* password management products complement the *SAFE* product, providing additional revenue streams. The geographical scope of F-Secure's consumer security business is global, and it is based on an international operator and reseller network. However, three quarters of the company's revenues come from Europe.

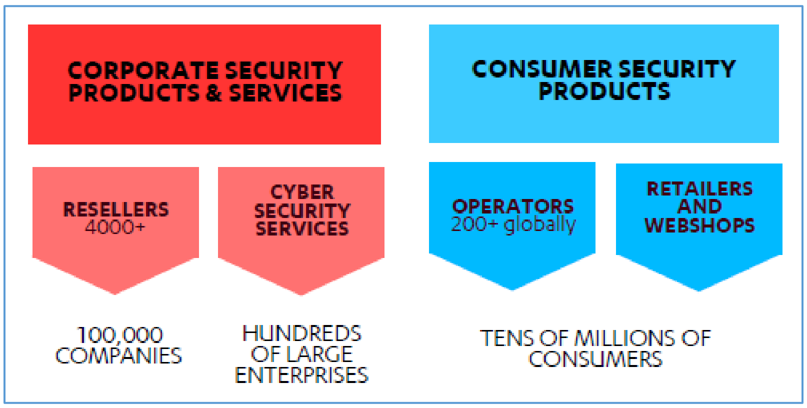


Figure 1.1. F-Secure business model. Source: F-Secure's Investor Leaflet 2017 (IL17)

Left side of the figure represents the second F-Secure portfolio category of *Corporate Security Products and Services*. The current two main F-Secure corporate offerings are the *Protection Business Service* subscription for SMBs and the *Business Suite* for medium to large customers. These offerings protect corporate devices, referred to as endpoints in cybersecurity vocabulary. In contrast to consumer products, they offer tools to manage substantial number of endpoints. F-Secure states in its annual report (AR16), that the geographical focus of the endpoint protection business is in Europe and Japan.

Since 2015, F-Secure has also offered products and services to target the rapidly growing mid and large corporation cybersecurity market segment. The three offerings, *Radar* product, the *Rapid Detection Service* (RDS) and *Cybersecurity Consulting*, are based on the acquisition of a Nordic cybersecurity firm nSense in 2015. This business differs significantly from F-Secure's past software products business in three ways. First, the targeted entities are much larger corporations than those of the past SMB focus (AR14, AR15, AR16), which calls for improved capability in sales lead, relationship and decision management issues in deal making. Second, this business is service led and dominated. Indeed, F-Secure estimates software's revenue share in the range of 12% of the deal size (CMD15). Third, the existing cybersecurity experts are located in Finland and Denmark (CMD15), which in practice means that outside the Nordics, F-Secure builds local professional services capability either organically or via acquisitions. The alternative of allying with capable local partners is also possible, but would likely mean losing a large share or even all service revenues.

2. Industry overview and competitive positioning

2.1 Key cybersecurity terms for analysis and discussion

In order to understand F-Secure's target market forecast and competitive positioning, we explain three essential cybersecurity market terms, which are: 1. Endpoint Protection Platform, 2. Endpoint Detection and Response Solutions, and 3. Managed Security Services.

First, Endpoint Protection Platform (EPP), provides security capabilities to protect corporate endpoint devices, such as workstations, smartphones and tablets (Ouellet, McShane & Litan 2017). F-Secure's *Protection Service for Business (PSB)* and *Business Suite (BS)* belong to this product category.

Second, Endpoint Detection and Response (EDR) solutions are new state-of the-art information technology for detecting otherwise undetectable cyberattacks, containing them, and restoring the normal before-attack state (Firstbrook, MacDonald 2016). Gartner analysts Firstbrook and MacDonald (2016) imply that EDR solutions are still emerging and immature, which means that security experts need to deploy and operate them. Due to extra complexity and cost, only large corporations and security sensitive entities, e.g. banks and airlines, have deployed EDR solutions. F-Secure's *Radar* product and *Rapid Detection Service (RDS)* belong to the EDR category.

Third, Managed Security Services (MSS), which relates to EDR, refers to outsourced remote security event monitoring and IT security controls as well as functions management with 24/7 security operations centers (SOCs). Typically, corporations do not have the necessary capability to operate complex EDR solutions, and hence they outsource the operations to cybersecurity firms. In F-Secure's case, the *RDS* is offered with MSS, where F-Secure SOC monitors and manages customer networks.

2.2 Market structure, size and development

In the past, F-Secure has focused on anti-malware consumer and the SMB market with its packaged software offering. The current strategy extends the company's focus to the large end of corporate customers. At the same time, the company has since 2015 offered new corporate targeted (EDR) products and services, on the basis of the nSense acquisition. F-Secure's annual report 2016 refers to Gartner market growth estimates with categories of Consumer Products, Endpoint Protection Platforms and Outsourced Security Services. We have selected this as a starting point for our market estimation analysis presented in Table 2.1. In addition, we have added two subcategories of Outsourced Security Services, which we think are the most relevant for F-Secure's EDR activities. The first one, Vulnerability Assessment, is related to F-Secure's *Radar* business and the second one, Managed Security Services, to F-Secure's *RDS* business.

Market size and growth	Market size 2016 (EURbn)	Growth YoY 2015-2020
Consumer products	4.35	1.5 %
Corporate EPP & EDR market	3.05	2.5 %
Corporate outsourced security services	14.70	11.7 %
Vulnerability assessment	0.57	7.0 %
Managed Security Services	0.27	29.8 %

Table 2.1. Market structure, size and development (AR16, CMD15)

2.3 Competitive landscape

Figure 2.1 shows the February 2016 and January 2017 Gartner Magic Quadrants for Endpoint Protection Platforms (MQEPP)(Firstbrook & Ouellet 2016, Ouellet, McShane & Litan 2017), which we use to analyze F-Secure's competitive landscape. The benefit of MQEPP is that besides describing competition in consumer and corporate endpoint protection (EPP), the firm descriptions also include consideration for their EDR capability. Gartner analysts have two reason for this: First, EDR is seen to migrate to EPP over the long-term strategy period. Second, there are emergent technology, which try to offer endpoint protection with EDR approach, trying to bypass and replace incumbent EPP offerings.

MQEPP positions companies into a two-dimensional plane. The horizontal axis describes the completeness of vision for endpoint protection, which could also be interpreted as innovativeness. The vertical axis of the plane describes ability to execute, which could be interpreted as ability to implement marketing promises. The MQEPP 2016 on the left shows F-Secure further right on the horizontal axis than in the 2017 MQEPP. Obviously, F-Secure's nSense acquisition and the resulting EDR product launches in 2015 have impressed Gartner analysts, but as there have not been major launches in 2016, F-Secure has slipped back to the left. On the vertical axis, F-Secure is below mid-point. Gartner comments about limited F-Secure presence outside European key markets and cautions customers to check availability of local F-Secure presence before making comments.

Our analysis divides competitors into three groups. The five incumbent large market leaders Symantec, Intel/McAfee, Kaspersky, Trend Micro and Sophos are in the first group. As can be seen in the figure, they are further on the right than F-Secure and above mid-point. Besides MQEPP, also F-Secure material (CMD15) refers to these firms as usual competitors in the endpoint protection sales cases. The second group is formed by emergent firms such as SentinelOne, Carbon Black, Cylance, CrowdStrike and Invincea. As the figure shows, all these firms are further right on the vision completeness axis and should be considered as potential competitors in EDR solutions. Cylance, CarbonBlack and SentinelOne are also above F-Secure. Of these US firms, Gartner reports only SentinelOne to have a reasonable global presence through a reseller network, so it would seem as the most dangerous competitor for EDR in Europe. Finally, the third group is formed by F-Secure's European EPP peers, like ESET and Panda. Panda is also developing EDR capabilities as part of its offering, so it could potentially match F-Secure's EPP as well as EDR capabilities in the sales cases.

Figure 2.1. Gartner Magic Quadrant's 2016 and 2017 for EPP: Innovation and Implementation Capability of F-Secure and Its Competitors

2.4 F-Secure growth decomposition 2015-2016

Table **2.2.** Decomposition of F-Secure Revenue Growth 2015 and 2016.2 shows the contributors to F-Secure's revenue growth in 2015 and 2016. The decomposition for 2015 is quite fine-grained based on detailed information (AR15, CMD15). Of the EUR 10.2m revenue growth, consumer products have contributed EUR 1.9m, Corporate endpoint protection EUR 3.2m, nSense acquisition associated EDR products EUR 0.6m, and EDR services EUR 4.5 m. Corporate products and services have grown by 18.3% year-on-year. 11.2% of this growth has been from the nSense acquisition and 7% from PSB and BS sales growth. The respective share in our analysis between EDR product and service revenue has been achieved by using F-Secures CMD information (CMD15), which splits EDR revenue to technical services (consulting) 68%, products 12%, and MSS 20%. We have combined consulting and MSS since we think their mix varies according to business cycle timing. In early phase, the consulting is overweighed. Later, when deals accumulating, MSS builds up as recurring revenues. This is a typical for service-led and -dominated managed IT solutions.

The available growth information for 2016 is much less exact, as seen in Table 2.2. Besides, some revenue 2015 has also been reclassified in segment reporting, as EUR 1.7m revenue has moved from Corporate to Consumer category, causing different historical revenue figures for 2015. This action has not been commented in the financial statement notes. In 2016, consumer revenues remained quite flat and contributed only EUR 0.3m. On the other hand, Corporate revenues contributed EUR 10.4m of the EUR 10.7m of revenue growth. The annual report '16 states that Corporate endpoint protection and cybersecurity consulting revenues both grew by double-digit figures. Corporate endpoint business is mature and includes significant competition, which is why we estimate that Corporate endpoint revenue grew by 10% in 2016, or in absolute terms EUR 4.7m.

This leaves EUR 6m for EDR service and product revenue growth component to decompose. We estimated earlier nSense originated EDR service revenues for June-December 2015 as EUR 4.5m and assume they would have been for full year 2015 an additional EUR 3m, which is an inorganic growth component for 2016 EDR services revenues. 2016 EDR service revenue growth is estimated as EUR 2.5m, which corresponds to 13 additional experts with EUR 900 daily rate and 80% billable customer hours. In relative terms, this is 38% growth on adjusted full-year 2015 EDR service revenue base of EUR 7.5m. Finally, Annual

Report (AR16) states that the EDR product need exists in the market, but it is in the early cycle. We interpret this lack of growth information as EDR products requiring more time to accomplish complex and large effort deal making. We estimate EDR or *Radar* and *RDS* products to have grown by 10%, or in absolute terms EUR 0.1m, in 2016. We regard this growth very modest for new products in early ramp-up phase and with a small adjusted 2015 revenue base of EUR 1.0m.

Growth decomposition - FY 2015 & FY 2016	FY 2015		FY 2016	
	Change (EURm)	Change (%)	Change (EURm)	Change (%)
Consumer products	**1.9**	**2.0 %**	**0.3**	**0.3 %**
Direct sales and retailers	1.3	1.4 %		
Operator channel	0.6	0.7 %		
Corporate products and services	**8.3**	**18.3 %**	**10.4**	**20.0 %**
Corporate endpoint protection	3.2			"double-digit" growth
PSB	2.6	5.6 %		
BS	0.6	1.4 %		
nSense	5.1	11.2 %		
EDR products (-> Radar, RDS)	0.6			
Managed Security Services (MSS)	1.0			
Cybersecurity consulting	3.5			"double-digit" growth
Total change	**10.2**		**10.7**	
Component	**Value**		**Value**	
Revenue 2014	137.4			
Revenue 2015	147.6			
Revenue 2016	158.3			
Change	**10.2**		**10.7**	

Table 2.2. Decomposition of F-Secure Revenue Growth 2015 and 2016

2.5 Sales forecast 2017-2020

Table 2.3 shows F-Secure's sales estimate for years 2017-2020, for which we have five key points to explain. First, we forecast that F-Secure consumer products follow Gartner's 1.5% market growth estimate. Consumer market is mature and there are plenty of anti-malware products for consumers to choose from. Nevertheless, according to independent testers (AR14, AR15, AR16), F-Secure has continuously achieved high product quality. A positive differentiator for consumer markets is that in addition to PCs, *SAFE* also protects smartphones and tablets. Finally, F-Secure reports (AR16) being able to get higher revenue per end user by bundling *Freedome* privacy product with SAFE.

F-Secure Sales Forecast (EURm)	FY 2016	FY 2017E	FY 2018E	FY 2019E	FY 2020E
Consumer products	95.8	97.2	98.7	100.2	101.7
Corporate EPP & EDR market	53.5	57.8	68.2	80.5	94.9
Corporate security services	9.0	12.2	16.4	22.1	29.9
Total	**158.3**	**167.2**	**183.3**	**202.8**	**226.5**
YoY growth		*5.6 %*	*9.6 %*	*10.6 %*	*11.7 %*

Table 2.3. F-Secure Sales Estimate 2017-2020

Second, for Corporate EPP, we estimate that F-Secure is able to grow somewhat faster than the market, 8% annually. EPP segment grew by 7% in 2015 and at least by 10% in 2016. In addition, according to Gartner, EDR functionality will over the long-term migrate to EPP and strengthen those vendors' position, which could improve their EPP with advanced functionality. Nevertheless, the market is mature, and we do not believe in continuous F-Secure double-digit growth with average EPP market growth being 2.5% (Table 2.3).

Third, for Corporate EDR, we have analyzed that it takes more time to mature, but will yield larger solution deals starting from 2018. This assumes that F-Secure is persistent developing the more complex solution business, starting with large Nordic enterprises. We have modeled the EDR impact with extra growth of 10% to revenue from EPP & EDR market in 2018-2020.

Fourth, for Corporate security services, we have assumed that F-Secure continues to increase annually the cybersecurity consulting workforce by 35% and captures also respective revenue from the market. According to an assumption of 900€ daily rate, 258 annual working days and 80% billable customer hours this requires in year 2017, 2018, 2019 and 2020, 17, 23, 31 and 42 additional consultants, respectively.

Fifth, we have not included *SENSE* consumer product or *Cloud Protection for Salesforce* offering to the sales forecast. The *SENSE* is now one year late from initial market availability. Salesforce Protection feature is not available either yet. Timing, revenues, cost and risk for each of these offerings are very difficult to value at this point in time. Thus these future offerings remain unaccounted upsides to our F-Secure valuation.

3. Financial analysis

In this section, we critically evaluate and discuss the financial development of F-Secure during the last three years (L3Y). Our analysis is based on both the qualitative and quantitative material from F-Secure's annual reports for years 2014, 2015, and 2016. This historical timeframe was chosen for two reasons. First, F-Secure's market and industry conditions are changing at an extremely rapid pace. Consequently, a timeframe that would extend further back to the history (e.g. L10Y) would not make our analysis more meaningful – in fact, quite the opposite. Second, F-Secure's current business structure, in which the personal cloud business has been divested as non-core to Synchronoss Technologies, was formed in the beginning of February 2015. Even though this acquisition happened in 2015, F-Secure has fortunately restated the majority of its financial figures as of Q1/2014[1]. Conclusively, restated financials from FY 2014 are the oldest financial figures that we still deem as both relevant and meaningful to include in our analysis – hence, FY 2014 was selected as the baseline year for our financial analysis.

3.1 Income statement

Table 3.1, which illustrates F-Secure's income statements for the L3Y, conveys a key message that consists of two aspects.

Income Statement				Comparative IS			Trend IS		
	FY 2014	FY 2015	FY 2016	FY 2014	FY 2015	FY 2016	FY 2014	FY 2015	FY 2016
Revenue	**137.4**	**147.6**	**158.3**	**100%**	**100%**	**100%**	**100%**	**107.4%**	**115.2%**
Cost of revenue	7.1	5.6	5.8	5.2%	3.8%	3.7%	100%	78.9%	81.7%
Gross margin	**130.4**	**142.0**	**152.5**	**94.9%**	**96.2%**	**96.3%**	**100%**	**108.9%**	**116.9%**
Other operating income	1.6	4.0	4.3	1.2%	2.7%	2.7%	100%	250.0%	268.8%
Sales and marketing	72.4	86.3	95.5	52.7%	58.5%	60.3%	100%	119.2%	131.9%
Research and development	30.1	26.9	28.4	21.9%	18.2%	17.9%	100%	89.4%	94.4%
Administration	7.3	12.7	13.7	5.3%	8.6%	8.7%	100%	174.0%	187.7%
EBIT	**22.2**	**20.0**	**19.2**	**16.2%**	**13.6%**	**12.1%**	**100%**	**90.1%**	**86.5%**
Financial net	1.0	0.7	1.5	0.7%	0.5%	0.9%	100%	70.0%	150.0%
EBT, continuing operations	**23.5**	**20.7**	**20.8**	17.1%	14.0%	13.1%	100%	88.1%	88.5%
Income taxes	-4.9	-8.6	-5.1	-3.6%	-5.8%	-3.2%	100%	175.5%	104.1%
Result, continuing oper.	**18.6**	**12.1**	**15.7**	**13.5%**	**8.2%**	**9.9%**	**100%**	**65.1%**	**84.4%**
Discontinued operations	-2.8	10.0	-0.5	-2.0%	6.8%	-0.3%	100%	-357.1%	17.9%
Result for the period total	**15.8**	**22.1**	**15.2**	**11.5%**	**15.0%**	**9.6%**	**100%**	**139.9%**	**96.2%**

Table 3.1. F-Secure's Income Statements

First, the business of F-Secure has grown, which is clearly illustrated by the L2Y cumulative revenue growth of 15.2 percent. However, this growth has not been reflected as increased operational profitability (i.e. EBIT -wise) because the overhead costs have increased simultaneously. In fact, the revenue growth and lower operational profitability are highly related: F-Secure attributes the increase in revenue to higher investments in both the sales organization and product development which, naturally, mean larger overhead costs. More specifically, the marginal benefit (e.g. increased average annual revenue per customer) has not yet enough exceeded the corresponding increase in the marginal cost, which is, among other aspects, a result of a larger sales organization and, ceteris paribus, higher overheads.

Conclusively, it is rather fair to argue that F-Secure is still in the middle of a ramp-up period in terms of its investments in sales, marketing and R&D, and unfortunately, the situation is unlikely to change in the near-term. This argument is also supported by

1 [Figures restated, excluding the comprehensive cash-flow statement in 2014, which was restated by Group 1 as the foundation for a vis-à-vis comparison between the historical statements]

the current strategy of F-Secure: the company aims to pursue notable revenue growth in the near-term, while being willing to sacrifice profitability, when pursuing growth and seizing market opportunities.

The second key aspect relates to the business re-organization that F-Secure conducted via two M&A transactions during FY 2015. First, and as discussed above, F-Secure disposed their personal cloud business in the beginning of 2015 and the income statements presented above are restated accordingly. It is worth highlighting the positive earnings effect of the discontinued operations in FY 2015: the net incomes were EUR 10m and EUR 12.1m for discontinued and continued operations, respectively – the reader can see that they are almost of same size. The second transaction of F-Secure in 2015, was their acquisition of nSense in June 2015. This transaction has also already proven partially beneficial; F-Secure's revenue growth in 2016 amounted to 7 percent, while organically they would have grown "only" by 5 percent.

3.2 Balance sheet

Table 3.2 contains the historical balance sheets of F-Secure, and shows that the revenue growth has also resulted in a size expansion of the balance sheet.

Balance Sheet - Assets				Comparative BS			Trend BS		
	FY 2014	FY 2015	FY 2016	FY 2014	FY 2015	FY 2016	FY 2014	FY 2015	FY 2016
Tangible assets	7.2	3.4	3.3	4.8%	2.0%	2.0%	100%	47.2%	45.8%
Intangible assets	14.1	12.2	13.4	9.4%	7.3%	8.0%	100%	86.5%	95.0%
Goodwill	19.4	7.6	7.6	13.0%	4.5%	4.5%	100%	39.2%	39.2%
Deferred tax assets	2.9	1.3	2.7	1.9%	0.8%	1.6%	100%	44.8%	93.1%
Other receivables	0.0	0.0	0.1	0.0%	0.0%	0.1%	n/a	n/a	n/a
Non-current assets total	**43.6**	**24.5**	**27.2**	**29.1%**	**14.6%**	**16.2%**	**100%**	**56.2%**	**62.4%**
Inventories	0.1	0.1	0.1	0.1%	0.1%	0.1%	100%	100.0%	100.0%
Other receivables	44.6	42.7	46.5	29.8%	25.4%	27.7%	100%	95.7%	104.3%
Available-for-sale financial assets	40.3	64.4	63.7	26.9%	38.3%	37.9%	100%	159.8%	158.1%
Cash and bank accounts	21.1	29.9	29.0	14.1%	17.8%	17.3%	100%	141.7%	137.4%
Current asset total	**106.1**	**137.2**	**139.4**	**70.9%**	**81.6%**	**82.9%**	**100%**	**129.3%**	**131.4%**
Discontinued operations	0.0	6.4	1.5	0.0%	3.8%	0.9%	n/a	n/a	n/a
Total Assets	**149.7**	**168.1**	**168.1**	**100%**	**100%**	**100%**	**100%**	**112.3%**	**112.3%**

Balance Sheet - Liabilities				Comparative BS			Trend BS		
	FY 2014	FY 2015	FY 2016	FY 2014	FY 2015	FY 2016	FY 2014	FY 2015	FY 2016
Equity	**79.9**	**77.1**	**75.9**	**53.4%**	**45.9%**	**45.2%**	**100%**	**96.5%**	**95.0%**
Deferred tax liabilities	0.4	0.9	0.4	0.3%	0.5%	0.2%	100%	225.0%	100.0%
Provisions	0.0	0.0	0.2	0.0%	0.0%	0.1%	n/a	n/a	n/a
Deferred revenue	11.0	12.1	13.7	7.3%	7.2%	8.1%	100%	110.0%	124.5%
Other non-current liabilities	0.0	0.1	0.2	0.0%	0.1%	0.1%	n/a	n/a	n/a
Non-current liabilities total	**11.4**	**13.2**	**14.4**	**7.6%**	**7.9%**	**8.6%**	**100%**	**115.8%**	**126.3%**
Other current liabilities	26.4	32.3	34.6	17.6%	19.2%	20.6%	100%	122.3%	131.1%
Deferred revenue	32.0	36.0	40.5	21.4%	21.4%	24.1%	100%	112.5%	126.6%
Current liabilities total	**58.4**	**68.4**	**75.1**	**39.0%**	**40.7%**	**44.7%**	**100%**	**117.1%**	**128.6%**
Discontinued operations	0.0	9.6	2.6	0.0%	5.7%	1.5%	n/a	n/a	n/a
Total Liabilities	**149.7**	**168.1**	**168.1**	**100%**	**100%**	**100%**	**100%**	**112.3%**	**112.3%**

Table 3.2. F-Secure's Balance Sheets

The three most interesting observations about the balance sheets relate to: 1. Time structural changes on the asset base, 2. Notable increase in deferred revenues (i.e. non-current and current) with simultaneous upward changes in both cash and financial assets, and 3. F-Secure's general financing structure.

First, the relative shares of non-current and current assets have moved into opposite directions, with approximately same sized effects –the former has dropped, while the latter has increased by approximately a third. Hence, F-Secure's asset base has exhibited time structure related changes. The primary driver behind this evolvement has been the recent M&A activity, which has had subsequent effects on F-Secure's Goodwill. For example, EUR 19.4m, equal to the entire Goodwill at F-Secure's Balance Sheet in 2014, of Goodwill was written-down due to the divestment of the Cloud division. On the contrary, the acquisition of nSense resulted in a Goodwill appreciation of EUR 7.6m, which is equal to the entire Goodwill at F-Secure's Balance Sheet ever since. They key insight is that F-Secure has either grown organically or it has conducted poor acquisitions on which the Goodwill has been thereafter written-down after impairment tests.

Second, the soared revenue from corporate customers has resulted in notable increases in deferred revenues (i.e. non-current and current). This aspect relates to the underlying differences in contractual designs between corporate and household customers. In other words, corporate customers usually make longer contracts (i.e. increases deferred revenue) and might not pay by cash immediately (i.e. increases trade receivables, which are under other current liabilities). On the other side of the balance sheet, the abovementioned development has been reflected on simultaneous increases in both cash & bank assets and available-for-sale financial assets, which are short-term investments in liquid fixed income instruments (i.e. almost equal to cash).

We argue that instead of distributing these funds as higher dividends to the shareholders, F-Secure has chosen to increase its cash balance due to two aspects. First, F-Secure has probably been building war chest for their contemplated business expansion because this manoeuvre will most likely require a significant amount of capital. In addition, F-Secure's willingness to prefer revenue over profitability in this plan makes the existing cash become even more beneficial. Second, it is in F-Secure's best interest to keep their non-systemic risk at a minimum, as it is an aspect that especially counts for the corporate customers, whom are seeking long-term partners for security and malware threat protection. Even if we take F-Secure's business risk as given, the company can reduce its non-diversifiable risk by addressing the other constitutes, which include e.g. the default risk. The most straightforward way to decrease the aforementioned risk is to primarily utilize internal supply and external equity financing, instead of debt financing – as F-Secure has historically done. Lastly, it is probable that debt financing is not even available to F-Secure, as they do not have any tangible assets to be used as potential collateral.

Third, the overall evolution of F-Secure's financing structure is rather clear: the value of book equity has exhibited a modest decrease due to high dividend payments, which were paid in the aftermath of the cash supplying divestment in 2015. Furthermore, the increases in both non-current and current liabilities have been purely related to the development of F-Secure's operational business – the expansion of deferred revenues, following discussion above, is natural, when the number of corporate customers increases. Additionally, the main culprit for the increase of other current liabilities is the operational development. For example, the single largest item is the accrued personal expense. Lastly, while the 53-47 equity-debt split has evolved into a 45-55 split, F-Secure does not, as of 31/12/2016, carry any interest-bearing liabilities on its balance sheet.

3.3 Cash flow statement

Table 3.3 presents the historical cash flow statements:

Cash flow from operations
Since 2014, F-Secure's cash flow profile has enhanced both before and after considering the changes in working capital. However, the aggregate cash flow from operations has exhibited negative development as the income taxes paid have increased substantially. Fortunately, this development has been mainly driven by a residual tax payment (i.e. non-recurring), which related to the cloud business divestment.

Cash flow from investments
The most notable changes are seen in the FY 2015, which are due to the divestment of cloud business. The Y-o-Y comparison is not meaningful due to the outlier nature of this event.

Cash flow from financing
The key finding is that the dividends paid have increased during the L2Y. In fact, it is the only item in the cash flow from financing because the group does not have any interest-bearing liabilities.

Overall, the business has been generating positive net-cash flow, which has been thereafter reflected in subsequent increases in the cash balance on the balance sheet.

Cash flow statement				Comparative CF			Trend CF		
CF from operations	**FY 2014**	**FY 2015**	**FY 2016**	**FY 2014**	**FY 2015**	**FY 2016**	**FY 2014**	**FY 2015**	**FY 2016**
Result for the period	15.8	22.1	15.2	11.5%	14.9%	9.6%	100%	139.8%	96.6%
Adjustments	16.0	7.1	19.7	11.6%	4.8%	12.4%	100%	44.3%	123.2%
CFO before changes in WC	**31.8**	**29.1**	**34.9**	**23.1%**	**19.7%**	**22.1%**	**100%**	**91.7%**	**110.0%**
Change in net working capital									
Current receivables, increase (–), decrease (+)	-0.8	-1.5	1.3	-0.6%	-1.0%	0.8%	100%	181.8%	-153.7%
Inventories, increase (–), decrease (+)	0.2	0.0	0.0	0.1%	0.0%	0.0%	100%	-16.7%	16.0%
Non-interest bearing debt, increase (+), decrease (–)	3.0	2.5	0.9	2.2%	1.7%	0.6%	100%	83.1%	30.8%
Provisions, increase (+), decrease (–)	0.0	1.2	0.2	0.0%	0.8%	0.1%	n/a	n/a	n/a
CFO before financial items and taxes	**34.1**	**31.3**	**37.3**	**24.8%**	**21.2%**	**23.6%**	**100%**	**91.7%**	**109.4%**
Interest expenses paid	0.0	0.0	-1.0	0.0%	0.0%	-0.6%	100%	100.0%	12625.0%
Interest income received	0.0	0.0	0.1	0.0%	0.0%	0.1%	100%	195.8%	387.5%
Other financial income and expenses	0.5	2.1	-0.7	0.3%	1.4%	-0.5%	100%	454.3%	-160.7%
Income taxes paid	-5.5	-4.5	-13.8	-4.0%	-3.0%	-8.7%	100%	82.0%	252.1%
∑ CFO	**29.1**	**28.9**	**21.9**	**21.2%**	**19.6%**	**13.8%**	**100%**	**99.2%**	**75.2%**
CF from investments	**FY 2014**	**FY 2015**	**FY 2016**	**FY 2014**	**FY 2015**	**FY 2016**	**FY 2014**	**FY 2015**	**FY 2016**
Investments									
In intangible and tangible assets	-6.7	-4.6	-6.9	-4.9%	-3.1%	-4.4%	100%	68.9%	103.1%
In subsidiary shares, net of cash acquired	0.0	-10.2	0.0	0.0%	-6.9%	0.0%	n/a	n/a	n/a
In available-for-sale financial assets	0.0	-35.7	-9.5	0.0%	-24.2%	-6.0%	n/a	n/a	n/a
∑ Investments	-6.7	-50.6	-16.4	-4.9%	-34.3%	-10.4%	100%	756.3%	245.6%
Proceeds							n/a	n/a	n/a
From sale of intangible and tangible assets	0.0	43.9	0.0	0.0%	29.8%	0.0%	100%	231136.8%	231.6%
From available-for-sale financial assets	0.0	11.4	11.7	0.0%	7.7%	7.4%	n/a	n/a	n/a
∑ Proceeds	0.0	55.3	11.8	0.0%	37.5%	7.4%	100%	291236.8%	62031.6%
∑ CFI	**-6.7**	**4.8**	**-4.6**	**-4.9%**	**3.2%**	**-2.9%**	**100%**	**-71.6%**	**69.5%**
CF from financing	**FY 2014**	**FY 2015**	**FY 2016**	**FY 2014**	**FY 2015**	**FY 2016**	**FY 2014**	**FY 2015**	**FY 2016**
Dividends paid	-9.3	-24.9	-18.7	-6.8%	-16.9%	-11.8%	100%	266.7%	200.0%
∑ CFF	**-9.3**	**-24.9**	**-18.7**	**-6.8%**	**-16.9%**	**-11.8%**	**100%**	**266.7%**	**200.0%**
Change in cash	**13.1**	**8.7**	**-1.4**	**9.5%**	**5.9%**	**-0.9%**	**100%**	**66.7%**	**-10.9%**

Table 3.3. F-Secure's Cash Flow statements

3.4 Financial ratios and key figures

Several of the traditional financial ratios (e.g. debt, coverage and inventory ratios) are not meaningful for F-Secure considering the nature of its business. Hence, we have omitted some financial ratios from our presented analysis and selected the ones which best describe the company's business.

The overall picture depicted by F-Secure's financial ratios is rather strong. Key financial ratios are presented in Table 3.4. The company has no financial debt and solid liquidity, and we see minimal financial risk for the company going forward. Furthermore, F-Secure uses its assets very efficiently and managed to improve its turnover ratios even further in 2016. On the negative side, F-Secure's profitability has taken a beating coming into 2016. Its ROA (ROCE) weakened from 14% (28%) in 2015 to 9% (20%) in 2016. This fall was explained by the decrease in operating profit margin. We see profitability remaining at this new lower level, due to e.g. the company's growth investments in corporate security.

Financial ratios	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016
ROA decomposition							
Return on assets (ROA)	14.1%	13.7%	11.1%	12.5%	11.0%	14.4%	9.0%
Operating profit margin	11.8%	11.2%	9.0%	10.7%	11.5%	15.5%	9.6%
Asset turnover	1.2x	1.2x	1.2x	1.2x	1.0x	0.9x	0.9x
ROCE decomposition							
Return on common equity (ROCE)	30.5%	29.4%	22.6%	23.9%	20.7%	28.2%	19.9%
Common earnings leverage	1.0x	1.0x	1.0x	1.0x	1.0x	1.0x	1.0x
Financial structure leverage	2.2x	2.1x	2.0x	1.9x	1.9x	2.0x	2.2x
Liquidity ratios							
Current ratio	1.3	1.2	1.4	1.6	1.8	2.0	1.9
Quick ratio	1.2	1.2	1.3	1.6	1.8	2.0	1.9
Working capital	12.7	10.3	18.7	33.4	47.7	68.8	64.3
Activity ratios							
Accounts receivable turnover	5.6	5.2	5.1	4.9	4.1	4.6	4.8
Accounts payable turnover	1.9	1.3	1.2	1.5	1.1	0.8	0.9
Debt ratios							
Equity ratio	69.1%	68.1%	72.7%	74.3%	74.9%	64.1%	66.7%
Gearing	-63.2%	-47.1%	-50.9%	-65.6%	-76.6%	-122.4%	-122.1%
Other figures							
Nr. of employees	812	942	931	939	921	926	1,026
Revenues per employee (EURm)	0.160	0.155	0.169	0.165	0.149	0.159	0.154

Table 3.4. Key financial ratios 2010-2016

Table 3.5. shows key ratios for F-Secure's share over the past years. The key point we want to highlight here is that although the company's valuation levels have increased recently, we see these levels warranted given our investment thesis outlined before. In other words, we do not believe the stock is overvalued at current levels. F-Secure is also a consistent payer of dividends, and has either maintained or increased its dividend per share each fiscal year since 2010. According to the company's dividend policy, its aim is to pay out approximately half of its earnings as dividends.

Share related figures	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016
Earnings per share (EUR)	0.10	0.10	0.09	0.10	0.09	0.14	0.10
Shareholders' equity per share (EUR)	0.33	0.38	0.41	0.46	0.50	0.49	0.49
P/E ratio	23.1x	19.0x	17.1x	17.6x	22.2x	18.2x	35.6x
P/BV ratio	6.1x	5.4x	3.8x	4.1x	4.5x	5.2x	7.2x
Dividend per share (EUR)	0.06	0.06	0.06	0.06	0.06	0.12	0.12
Dividend yield	2.9 %	2.9 %	3.8 %	3.2 %	7.0 %	4.7 %	3.5 %
Share price Dec 31 (EUR)	2.00	2.01	1.55	1.87	2.27	2.58	3.48

Table 3.5. Share related key ratios and figures 2010-2016

Figure 3.1 presents F-Secure's revenue split by the geographical location of customers as well as the breakdown of sales coming from consumer security and corporate security. F-Secure's investments in corporate business are notable from the development of its sales breakdown. Corporate security solutions have made up an increasing portion of the total revenues, and as the company has outlined increasing investments in corporate security, the trend can be expected to continue. In terms of geographic sales, the Nordics have continued to increase their significance, mainly on the expense of other European sales. F-Secure has outlined Europe and Japan as its focus markets in corporate security, and it has grown faster than the market in these regions.

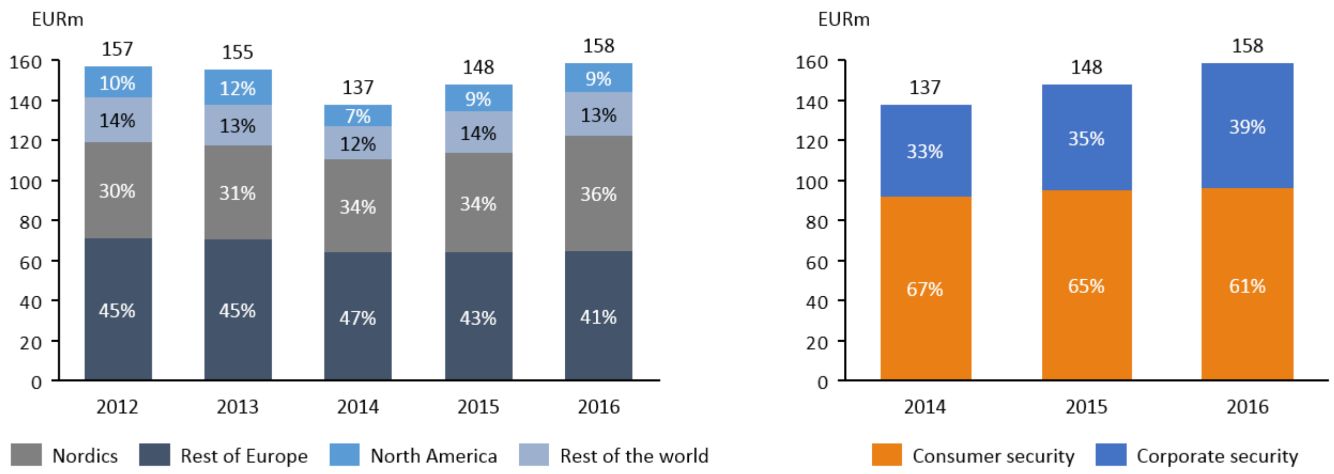


Figure 3.1. F-Secure's historical revenue breakdown by geography and business

4. Investment risks

F-Secure has specified multiple major risks it sees as threats to its business. Many of the risks are normal to large businesses and already quite well mitigated by the actions of the company or by the nature of the customer base. However, we have analysed key risks affecting the attractiveness and value of the company. The figure below shows the impact and probability of the key risks.

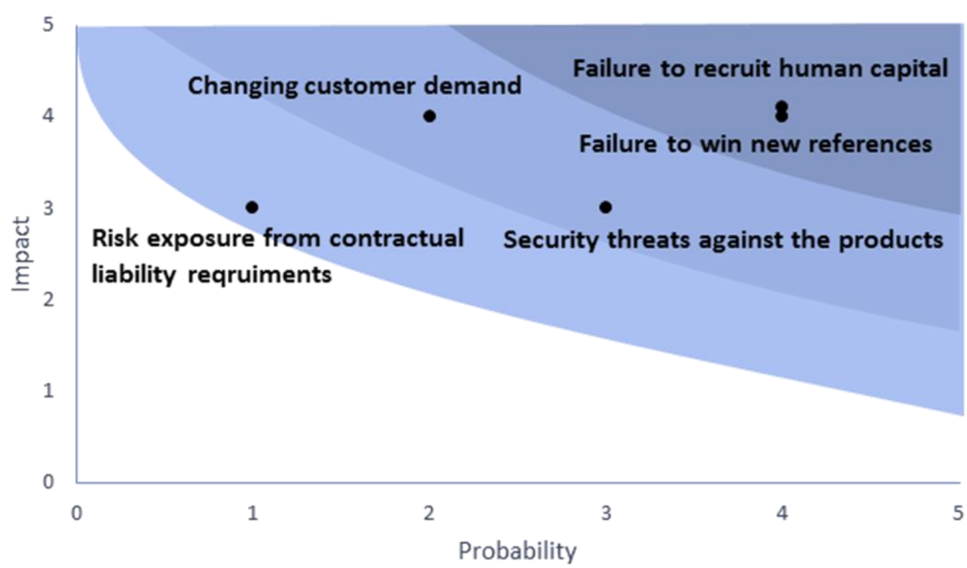


Figure 4.1. Impact and probability of the key risks

4.1 Strategic risks

Failure to win new and retain old reference customers in security consulting business
Winning new and especially big customers is mainly based on the existing references. Therefore, retaining notable client base is a prerequisite to successfully expanding the customer portfolio. The existing references help to win new customers and therefore the growth cumulates on top of the growth of the past. Because the growth mainly comes from the business where the pace of winning new customers can have a huge effect on the future growth, the risk of not winning new customers is important to consider. Considering the size and the customer base of F-Secure this risk is probably the most important risk in terms of the future growth prospects.

Changing customer preferences
Even though the cyber security demand is constantly increasing the possibility of customers, changing customers' preferences pose a risk to F-Secure's business. For instance, F-Secure is focused only in cyber security and certain segments in the industry. Therefore, customers' major shift to demand only full IT or cyber security services could lead F-Secure to lose substantial business if it cannot find the right partners to offer a full-service solutions to complement its service mix.

In addition, new devices can be seen either as an opportunity or threat to F-Secure. The new devices and solutions, e.g. increasing mobile devices and internet of things, increase demand for cyber security but at the same time it is necessary to keep updating and launching new products to keep up with the development of different devices. Failing in this might lead to decreasing growth when the growth in obsolete devices is falling.

4.2 Operational risks

Security threats related to F-Secure products and services
F-Secure offers security services and therefore it is essential to keep the products and services safe for the customers. The vulnerabilities and realized threats against the product mix might affect the reputation and competitiveness of the offering. So far, F-Secure has avoided major security issues with its products. However, there are multiple detected, fixed and announced vulnerabilities each year. Still, there is no clear upward trend in the announced vulnerabilities based on Figure 4.2. As a security provider F-Secure's products are under threat all the time and therefore the possibility of security threats realizing cannot be ruled out.

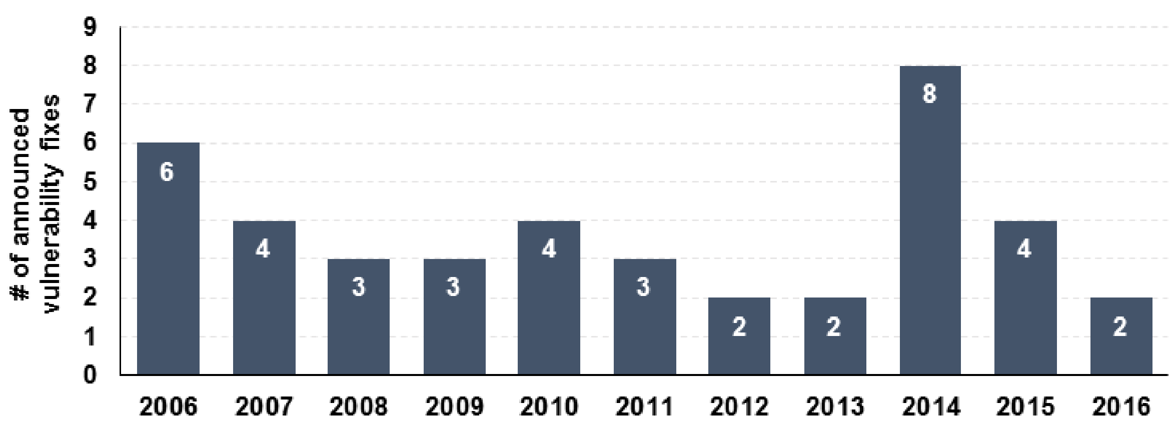


Figure 4.2. Number of announced vulnerability fixes of F-Secure products. Source: F-Secure website

Failure to recruit enough competent employees and retain them
The company's business relies on competent human capital. The growing consulting business is labour intensive and the security software must be updated constantly against new threats. Lack of required human capital can substantially affect the company's growth prospects. In addition, it is essential to retain the company's key employees.

4.3 Legal risks

Risk exposure from contractual liability requirements

F-Secure promises to protect its customers' devices and business. Therefore, F-Secure might face claims against the company if its products caused damage or were unable to secure the customer's device or business. The risk could realize for instance if the products of F-Secure revealed major vulnerabilities. The risk relates to the fact that it is not always possible to control the risk of contractual liabilities throw clauses in agreement, and these kinds of known or unknown legal risks might cause major losses for F-Secure.

5. Corporate governance

F-Secure follows many reliable rules and guides, including for instance the Finnish law and Finnish Corporate Governance Code. The company also states maximizing shareholder value as its main objective. These rules and guidelines give a reliable base for the corporate governance of the company.

The highest governing body of F-Secure is the annual general meeting of the shareholders. The Board of Directors is the highest supervising body looking over the company and taking care of shareholders' interest. It is appointed and its remuneration is decided by the annual general meeting. The BoD supervises the CEO and the Leadership Team, which have the operational responsibility of the company.

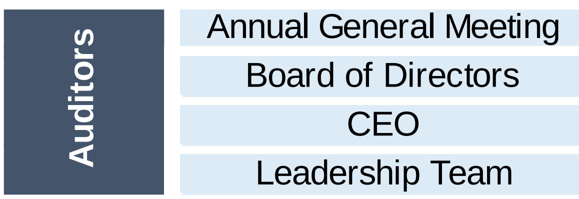


Figure 5.1. The management structure of the company

Position	Reward paid as shares
Chairman of the Board	40%
Committee Chairmen	40%
Other Board Members	40%
Leadership Team	~ 50%

Table 5.1. Remuneration of the management

The Board of Directors comprise independent members except the Chairman, Risto Siilasmaa, and the employee representative, Janne Pirttilahti. Risto Siilasmaa is the founder and former CEO of the company, and owns 38 % of the company. Having the biggest shareholder as the chairman of the company might make sure that the interest of shareholders are taken into account. However, it is also possible that Mr. Siilasmaa could use this position for his own purposes.

The average time of a Leadership Team member has been only two years, which raises many questions; perhaps there are disputes between the managers and the members of BoD or the company's business is not as attractive to the managers as it should be. The Board has comprised also some hot names, e.g. Bruce Oreck and Peter Vesterbacka, and it is possible that these members have been appointed just to make an impression on the shareholders. Their knowledge in the cyber security industry might be limited.

The remuneration of the management and the directors is paid partly in cash and partly with shares. The share of fee paid with shares has increased during the last few years, aligning the interest of the managers and the shareholders more efficiently. There are also some option programs in place to enhance the remuneration.

To summarize the case regarding the management, the largest shareholder in the board is a convincing way to align the interest of management and the shareholders. It makes sure that the corporate governance of F-Secure is in check despite some minor red flags.

6. Valuation

In this section of the paper at hand, we aim to provide comprehensive justification for fair market value of F-Secure based on our analysis of the businesses' current health, F-Secure's competitive position in its main markets and present value of growth opportunities (mainly concentrated on the B2B segment). The valuation proceeds as follows: Firstly, we will provide our forecast for F-Secure's IFRS consolidated balance sheet, including commentary for the expected growth rates, margins and dividend policy. Secondly, we showcase our principal valuation model for this exercise (abnormal earnings model, AEM) along with commentary and valuation data from several supplementary valuation approaches. Finally, we provide sensitivity analysis on the fair market value of F-Secure, provide a synthesis of our valuation approaches and derive brief implications for how to view F-Secure stock as potential investment.

6.1 Forecasted consolidated financial statements

Based on the analysis conducted earlier in this paper, we have decided to use forecast period of 10 years, further supported by the notation that we view the firm-specific competitive advantage to be sustainable only in the short run and foresee industry-wide growth prospects as moderate (due to potential further consolidation in the B2B segment once the market becomes saturated, growth subdues and marginal cost of revenue increases to less attractive level). Table 6.1 showcases the forecast with commentary to follow.

Income Statement	FY 2017E	FY 2018E	FY 2019E	FY 2020E	FY 2021E	FY 2022E	FY 2023E	FY 2024E	FY 2025E	FY 2026E	CAGR (5y)	CAGR (10y)	TV
Revenue	**167.2**	**183.2**	**202.6**	**226.3**	**249.0**	**268.9**	**287.7**	**305.0**	**320.2**	**333.0**	**9.5%**	**7.7%**	**343.0**
Growth, %	*5.6%*	*9.6%*	*10.6%*	*11.7%*	*10.0%*	*8.0%*	*7.0%*	*6.0%*	*5.0%*	*4.0%*			*3.0%*
Cost of revenue	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	1.8%	0.9%	6.4
% of revenue	*3.8%*	*3.5%*	*3.1%*	*2.8%*	*2.6%*	*2.4%*	*2.2%*	*2.1%*	*2.0%*	*1.9%*			*1.9%*
Gross margin	**160.8**	**176.9**	**196.3**	**220.0**	**242.6**	**262.5**	**281.4**	**298.6**	**313.9**	**326.7**	**9.7%**	**7.9%**	**336.7**
Other operating income	4.5	5.0	5.5	6.1	6.8	7.3	7.8	8.3	8.7	9.0	9.5%	7.7%	9.3
% of revenue	*2.7%*	*2.7%*	*2.7%*	*2.7%*	*2.7%*	*2.7%*	*2.7%*	*2.7%*	*2.7%*	*2.7%*			*2.7%*
Sales and marketing	-100.8	-110.5	-122.2	-136.5	-150.2	-162.2	-173.6	-184.0	-193.2	-200.9			-206.9
% of revenue	*60.3%*	*60.3%*	*60.3%*	*60.3%*	*60.3%*	*60.3%*	*60.3%*	*60.3%*	*60.3%*	*60.3%*			*60.3%*
Research and development	-28.5	-28.5	-28.5	-28.5	-28.5	-28.5	-28.5	-28.5	-28.5	-28.5			-28.5
% of revenue	*17.0%*	*15.6%*	*14.1%*	*12.6%*	*11.4%*	*10.6%*	*9.9%*	*9.3%*	*8.9%*	*8.6%*			*8.3%*
Administration	-14.5	-15.9	-17.5	-19.6	-21.5	-23.3	-24.9	-26.4	-27.7	-28.8			-29.7
% of revenue	*8.7%*	*8.7%*	*8.7%*	*8.7%*	*8.7%*	*8.7%*	*8.7%*	*8.7%*	*8.7%*	*8.7%*			*8.7%*
EBIT	**21.5**	**27.0**	**33.5**	**41.5**	**49.1**	**55.9**	**62.2**	**68.0**	**73.2**	**77.5**	**20.7%**	**15.0%**	**80.9**
% of revenue	*12.9%*	*14.7%*	*16.5%*	*18.3%*	*19.7%*	*20.8%*	*21.6%*	*22.3%*	*22.9%*	*23.3%*			*23.6%*
Financial net	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
EBT	**21.5**	**27.0**	**33.5**	**41.5**	**49.1**	**55.9**	**62.2**	**68.0**	**73.2**	**77.5**			**80.9**
Income taxes	-4.3	-5.4	-6.7	-8.3	-9.8	-11.2	-12.4	-13.6	-14.6	-15.5			-16.2
%, tax rate	*20%*	*20%*	*20%*	*20%*	*20%*	*20%*	*20%*	*20%*	*20%*	*20%*			*20%*
Net income	**25.8**	**32.3**	**40.2**	**49.8**	**59.0**	**67.0**	**74.6**	**81.6**	**87.8**	**93.0**			**97.0**
Dividends	12.9	16.2	20.1	24.9	29.5	33.5	37.3	40.8	43.9	46.5			48.5

Balance Sheet - Assets	FY 2017E	FY 2018E	FY 2019E	FY 2020E	FY 2021E	FY 2022E	FY 2023E	FY 2024E	FY 2025E	FY 2026E	Driver	TV
Cash and cash equivalents	101.8	121.8	146.6	177.2	212.1	250.3	292.2	337.1	384.7	434.2	Plug	485.1
Inventory												
Trade receivables	50.0	54.8	60.6	67.7	74.5	80.4	86.1	91.2	95.8	99.6	Sales	102.6
Other current assets												
Current assets total	**151.8**	**176.6**	**207.2**	**244.9**	**286.5**	**330.8**	**378.2**	**428.3**	**480.5**	**533.8**		
Goodwill	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	Stable	8.0
Other intangible assets	14.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0	Stable	14.0
Fixed tangible assets	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	Stable	3.0
Associated companies												
Other non-current assets	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	Stable	5.0
Non-current assets total	**30.0**	**30.0**	**30.0**	**30.0**	**30.0**	**30.0**	**30.0**	**30.0**	**30.0**	**30.0**		
Total Assets	**181.8**	**206.6**	**237.2**	**274.9**	**316.5**	**360.8**	**408.2**	**458.3**	**510.5**	**563.8**		617.7

Balance Sheet - Liabilities	FY 2017E	FY 2018E	FY 2019E	FY 2020E	FY 2021E	FY 2022E	FY 2023E	FY 2024E	FY 2025E	FY 2026E	Driver	TV
Shareholders' equity	**88.8**	**105.0**	**125.1**	**150.0**	**179.5**	**213.0**	**250.3**	**291.1**	**335.0**	**381.5**	NI - Div.	**430.1**
o/w minority interests												
Current liabilities	33.0	36.2	40.0	44.7	49.2	53.1	56.8	60.2	63.2	65.7	Sales	67.7
Interest-bearing debt												
Deferred revenue	57.0	62.5	69.1	77.2	84.9	91.7	98.1	104.0	109.2	113.6	Sales	117.0
Other non-current liabilities	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	Stable	3.0
Total liabilities	**93.0**	**101.6**	**112.1**	**124.9**	**137.0**	**147.8**	**157.9**	**167.2**	**175.4**	**182.3**		**187.7**
Total liabilities and equity	**181.8**	**206.6**	**237.2**	**274.9**	**316.5**	**360.8**	**408.2**	**458.3**	**510.5**	**563.8**		**617.7**
Net debt	**-101.8**	**-121.8**	**-146.6**	**-177.2**	**-212.1**	**-250.3**	**-292.2**	**-337.1**	**-384.7**	**-434.2**	Calc.	**-485.1**
Working capital	**-40.0**	**-43.8**	**-48.5**	**-54.2**	**-59.6**	**-64.3**	**-68.8**	**-73.0**	**-76.6**	**-79.7**	Calc.	**-82.1**

Table 6.1. Consolidated group income statement and balance sheet for F-Secure (FY 2017E – FY 2026E)

We would like to make three points to help the reader better understand our forecast. The first relates to revenue: although F-Secures headline figures are currently strong, especially in corporate security, we highlight that generating believable track record in e.g. cybersecurity products RDS and Radar may take several years to gain full traction. Therefore, we are somewhat more restrained than the management in our peak growth figure, as we see the highest growth kicking-in in 2019 (at +11%). Moreover, we note that the CAGR figures are in line with Gartner's forecasts as it pertains to F-Secures business segments: the weighted average of Gartner's growth forecast for F-Secure-relevant markets is 6.86% p.a. in 2015 – 2020, which is in line with our long-term CAGR estimate of 6.90%.[2]

Second, our forecasted EBIT margin reflects F-Secure's continued investment in growth in 2017E, standing at 13.7% and increasing to 22.4% at the end of the forecast period. The rationale behind this is that company is targeting both end-point detection and response (EDR) and consulting markets, which we view as potential growth segments, but which also require initial investments in 2017E.

Third, the balance sheet forecast underpins F-Secure investment case as we note that the company remains highly cash-generative and is able to operate at significantly negative working capital (which is by and large due to deferred revenue line allocated in working capital in our simplified balance sheet). Moreover, the company's net debt is negative throughout the forecast period, which is in accord with the non-asset-heavy business model of stable but growing IT services company.

6.2 Fair market valuation of F-Secure

We opted to use abnormal earnings model (RIM) as our main valuation method due to at least following three reasons: Firstly, unlike dividends and cash flows, ROE estimates provide fairly reliable estimate of future performance. Secondly, assuming clean surplus accounting, which is reasonable given that F-Secures business does not include large pension fund adjustments or fair-value changes of financial instruments in comprehensive income, fairly standardized accounting information should give reliable results as well as derive less of its present value from the terminal value (34% in our case). Thirdly, ROE has clear connection with competitiveness, making forecast potentially more grounded in real-world competitive dynamic: e.g. with terminal value, it makes sense to assume F-Secure to maintain nominal level of competitive advantage, instead of the competitive advantage being so strong that the company would grow at sustainable growth rate g, whilst ROE > r_e > g. This allows the TV-formula to reduce to:

$$TV_T = \frac{(ROE - r_e)B_T}{r_e}$$

Abnormal Earnings Model	FY 2017E	FY 2018E	FY 2019E	FY 2020E	FY 2021E	FY 2022E	FY 2023E	FY 2024E	FY 2025E	FY 2026E	TV
ROE %	**31.4%**	**33.4%**	**34.9%**	**36.2%**	**35.8%**	**34.2%**	**32.2%**	**30.2%**	**28.0%**	**26.0%**	**12.0%**
Required rate of return	**5.6%**	**5.6%**	**5.6%**	**5.6%**	**5.6%**	**7.3%**	**7.7%**	**8.1%**	**8.5%**	**8.9%**	**8.9%**
Beta	0.78	0.78	0.78	0.78	0.78	0.95	0.95	0.95	0.95	0.95	1.0
Equity risk premium	6.3%	6.3%	6.3%	6.3%	6.3%	6.3%	6.3%	6.3%	6.3%	6.3%	6.3%
Risk-free rate	0.7%	0.7%	0.7%	0.7%	0.7%	1.4%	1.8%	2.2%	2.6%	3.0%	3.0%
Abnormal earnings	**19.6**	**24.7**	**30.8**	**38.3**	**45.3**	**48.1**	**52.2**	**55.1**	**56.8**	**57.0**	**11.7**
Discount factor	*0.9472*	*0.8972*	*0.8498*	*0.8049*	*0.7624*	*0.6539*	*0.5935*	*0.5348*	*0.4784*	*0.4248*	16.0
PV	**18.6**	**22.2**	**26.2**	**30.8**	**34.6**	**31.5**	**31.0**	**29.5**	**27.2**	**24.2**	**187.0**
Market value of equity	**538.47**										

Table 6.2. Abnormal earnings model

Table 6.2 illustrates the base case market value of equity for the company. Our valuation case includes assumptions on beta (Kauppalehti, F-Secure historical beta for FY 2017E – FY2021E; average unlevered cash-adjusted beta in software industry by Prof. Aswath Damodaran for FY 2022E -), equity risk premium (Finland total equity risk premium, Prof. Aswath Damodaran) and risk-free rate (10-year Finnish government bond, assuming interest rate normalization by in FY 2022E – FY 2026E).

[2] Gartner growth estimates for endpoint security, IT outsourcing, consumer security and information security stand at 2.6%, 11.9%, 1.3% and 7.8%, respectively. Sourced from F-Secure Annual Review 2016.

6.3 Valuation summary

As final step of the RIM, we conduct a sensitivity analysis by altering the ROE and required rate of return parameters in perpetual growth phase, whilst the base case stands at 12.0% and 8.9%, respectively. The full sensitivity table suggest maximum valuation of c. EUR 748m and minimum valuation of c. EUR 351m (+41% to -33% to market value of c. EUR 522m on March 23, 2017). Our base case points to valuation of c. EUR 538m (EUR 3.39 per share). Moreover, by assuming more reasonable degree of error, the fair value of the company using RIM stands at EUR 595m – EUR 504m. As the midpoint of this range stands c. 5% above current market value, we are internally sound with our valuation as it pertains to our more growth estimates presented earlier.

Based on this assessment, we recommend **BUY** rating for F-Secure with 12-month target price of EUR 3.75 (assuming 158,798,739 common shares outstanding). Target price is contingent on the management being able to deliver on their promises on the cybersecurity and consulting services businesses for corporate customers.

Market value of equity sensitivity to PERP. parameters							
	Required rate of return						
Return on equity	*7.50%*	*8.00%*	*8.50%*	***8.94%***	*9.00%*	*9.50%*	*10.00%*
10.0%	504.13	473.61	443.08	416.38	412.56	382.04	351.51
10.5%	534.65	504.13	473.61	446.90	443.08	412.56	382.04
11.0%	565.18	534.65	504.13	477.42	473.61	443.08	412.56
11.5%	595.70	565.18	534.65	507.95	504.13	473.61	443.08
12.0%	626.22	595.70	565.18	538.47	534.65	504.13	473.61
12.5%	656.75	626.22	595.70	568.99	565.18	534.65	504.13
13.0%	687.27	656.75	626.22	599.52	595.70	565.18	534.65
13.5%	717.79	687.27	656.75	630.04	626.22	595.70	565.18
14.0%	748.32	717.79	687.27	660.56	656.75	626.22	595.70

Table 6.3. Sensitivity analysis of F-Secure market value based on abnormal earning model

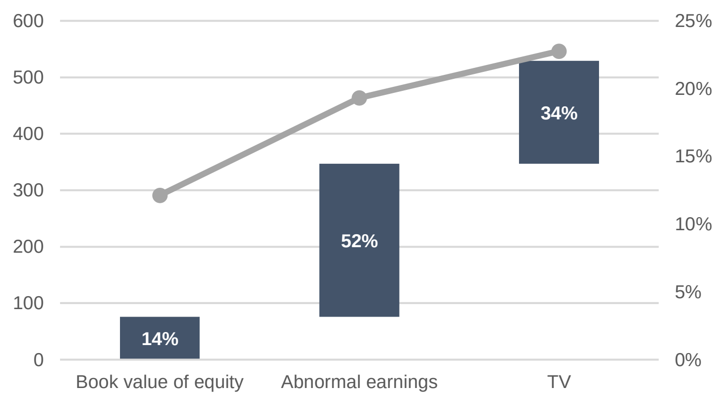


Figure 6.1. Fair value waterfall and evolution, EURm (LHS) and EBIT evolution (RHS)

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