24 March 2017

SOPHEON

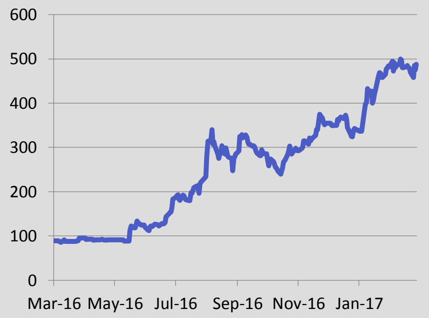
SOFTWARE AND COMPUTER SERVICES

SPE.L

487.5p

Market Cap: £35.5m

SHARE PRICE (p)



12m high/low 500.0p/85.5p

Source: LSE Data

KEY INFORMATION

Enterprise value	£32.1m
Index/market	AIM
Next news	AGM, June 2017
Gearing	6%
Interest cover	4.9x

SOPHEON IS A RESEARCH CLIENT OF PROGRESSIVE

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Enterprise Innovation Management

Or, helping a juggernaut turn on a dime

Sopheon has spent many years evolving a state-of-the-art platform allowing Enterprise customers to manage and monitor their pipelines of innovation. As this market matures and on the back of some major reference client wins, Sopheon's Accolade product is beginning to see material success on a number of fronts. This note describes the marketplace, the technology, and the progress now being achieved.

- The pressure on large organisations is intense and growing – they are not only competing within their vertical markets against each other, on an increasingly global basis, but also fighting a new breed of small, nimble, tech-fuelled startups. In this environment, management of innovation, and the rapid, effective allocation of capital, have become of utmost importance.
- Sopheon has long been a leader in the niche field of Enterprise Innovation Management – a small but critical part of large organisations' approach to initiating, fostering and developing new products and services. The group has a roster of blue-chip clients, and is (unsurprisingly, perhaps) seeing the market begin to accelerate.
- The group has a well-established route to market, and strong gross margins. Additional growth from either the full-scale enterprise Accolade product, or the newer "light" version, could lead to material and sustainable earnings growth. We initiate with this note describing Sopheon and its landscape. Our forecasts are, we believe, cautious, and demonstrate the level of ongoing investment in product and sales during 2017 – the benefits of this should be seen in 2018 and beyond.

We believe that Sopheon's products will continue to find favour with an increasing number of customers as their benefits become clear, and as the requirement to manage innovation becomes even more evident.

We suggest that potential investors spend time acquainting themselves with this niche area, and meet with management to learn more about the specifics of Sopheon's business.

FYE DEC (US$M)	2015	2016	2017E	2018E	2019E
Revenue	20.9	23.2	26.0	29.0	32.0
Adjusted EBITDA	4.3	5.2	5.3	6.1	7.3
Adjusted PBT	1.6	2.7	2.7	3.5	4.6
Adjusted EPS (₵)	13.9	28.1	28.5	36.8	45.1
EV/Adj. EBITDA	9.7x	7.7x	7.6x	6.6x	5.5x
P/E	43.8x	21.7x	21.4x	16.5x	13.5x
Dividend yield	0.0%	0.0%	0.0%	0.0%	0.0%

Source: Company Information and Progressive Equity Research estimates

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Executive summary

Market Background - Innovation Management in the Enterprise

Large enterprises (think P&G, Pepsico and Honeywell) face material challenges in optimising their approach to innovation and product strategy. The "innovation cycle" should logically manage the entire process from conception of idea, through analysis of market opportunity, evaluation of opportunities relative to one another, feasibility studies and early trials, through product design and rollout, and even into analysis of subsequent performance to learn lessons and optimise further activity. Across a global organisation, with hundreds (or thousands) of professional staff all likely to promote and lobby on behalf of "their" projects, this presents a major challenge. Unfortunately for these major corporations, many of them are facing new and nimble tech-driven rivals, benefiting from (or driving) the so-called "digitalisation" of many business processes – Uber, AirBnB and many others are requiring larger competitors to innovate and evolve at a pace never before seen.

The "stage-gate" model of innovation management

One approach to managing this problem is the so-called "stage-gate" method, pioneered in the American chemicals and engineering sectors in the 1940s and 1950s. Essentially, ideas and projects are put through a series of "stages", with a decision "gate" between each stage. This allows a project to evolve, develop and move towards its goal (during the stages), but in a measured and controlled way, with the organisation always able to cancel or amend the project (at each gate) if the results during a given stage suggest it.

Crucially, by managing ALL projects in this way, and holding comparable data, a large company can compare and contrast the competing projects in different divisions or geographies. This allows optimal allocation of limited available capital.

The Sopheon product - Accolade

Sopheon, in conjunction with a leading academic in the "stage-gate" field, Robert Cooper, some time ago developed a software platform, Accolade, which allows global enterprise customers to manage their innovation lifecycles using this stage-gate approach. The product is now in its eleventh major release,and the group has won (and retained) a large number of global blue-chip clients – in addition to the three named above, customers include NASA, Merck and BASF.

Routes to market and revenue model

The group sells almost entirely through a direct sales model – employing its own sales teams, focussed mainly on the USA and European market. Sopheon deals with a small number of reseller partners in certain geographies (notably Australia and China), and its use of such an indirect model is likely to increase as traction is seen with the "Accolade Express" offering, which targets smaller customers.

Financial forecasts – secular growth opportunity

We have included financial forecasts on the front cover of this note, and explained in more detail on pages 16-18. The group is beginning to see the benefits of both its product heritage (and the demonstrable reference base) and the market segment "coming of age" as large corporations realise that other methods are failing to allow them the flexibility and focus they require.

Many vertical sectors are feeling the impact of technology – including some, such as automakers and logistics groups, which until recently seemed some distance from the tech giants of Silicon Valley. Given the major disruptive impact of “digitalisation” across so many industries, the largest players are rapidly moving to accelerate their innovation processes, but risk losing control, making poor decisions, or missing out on the “obvious” opportunities that nimble, tech-heavy start-ups can exploit.

In this environment, Sopheon’s platform is a low-cost way for an enterprise to both optimise its return on capital and reduce risk.

We believe that the group is likely to see ongoing revenue growth, given the positive market dynamics, and the growing number of reference sites. In the short term, we expect the group to reinvest much of the additional margin, building the platform for additional expansion in the future – this accounts for the relatively modest EBITDA growth that we forecast for 2017.

Risks and challenges

Sopheon is at risk mainly from competitive activity – either niche players competing more effectively (see our summary on page 15), or a more traditional ERP (or other) software provider making a major and successful foray into the Innovation Management segment. The other obvious danger relates to global macroeconomic slowdown – and reduction in levels of innovative activity – although this might be partially offset by renewed focus on cost control, which Accolade could enable.

Summary and conclusion

Sopheon operates in an unusual and global niche market – its software is, arguably, critical to the long term performance of a number of global customers, but the whole area of innovation management is relatively unknown.

We suggest that the group’s many years of dedicated development of the platform might now combine with a number of market sectors badly in need of innovation to combat tech-driven disruption. Most global markets have been competitive for many years, but new technologies both empower new entrants and multiply the number of possible avenues for larger corporates to explore. In this environment, it behoves all large corporations to have a clear and well-structured approach to managing such important decisions.

Some groups will use in-house databases, repurposed project management tools, or other internally-developed platforms (or extensions of CRM or ERP systems). Others will muddle through with spreadsheets, teams of decision-makers and middle-managers.

Our belief, however, is that Sopheon’s product will continue to find favour with an increasing number of customers as its benefits become clear, and as the requirement to manage these processes becomes even more evident. We suggest that potential investors spend time learning more about this niche area, and meet with management to learn more about the specifics of Sopheon’s business.

Enterprise Innovation Management (EIM) – an evolving marketplace

Enterprise Innovation Management is more than just managing new ideas and new products. It encompasses all innovation within an enterprise and looks to manage all the investments a company makes, with goals of growing the business, increasing market share and creating more value in the portfolio.

Enterprise innovation performance

Generally speaking, innovation processes are acknowledged to be some of the least-improved business processes in the corporate world. Despite the available technology, such processes and portfolios are often still managed on spreadsheets or rudimentary databases with out-of-date information that is hard to compare between different divisions or different geographies.

The diagram below depicts the innovation management challenge, within a large organisation. The four key areas map to elements of Sopheon's (and competing) technology platforms.

Enterprise Innovation Management – four key areas

Source: Company information

Strategy and direction must be set and managed "top-down", while assets and resources (including human capital) are corralled and assigned "bottom-up" – in this way, large organisations can apply capital and effort to the most productive and most valuable innovative processes.

Innovation management – processes and outcomes

The concept is simple – companies look to evaluate areas where they enjoy comparative or competitive advantage, they analyse a range of potential new products or services, and then allocate available capital to those innovations that offer the best returns. Once projects or innovations are funded, the return on capital (or expected return) is continually analysed, both to highlight unexpected outcomes, and to improve subsequent modelling processes.

Unfortunately, putting this into practice is difficult, especially across a sprawling global organisation, with "silo" mentalities, divisional managers looking to preserve or grow fiefdoms, and difficulties comparing projects being presented using different criteria and different assumptions. The table below gives an idea of the various different aspects of a successful innovation management structure, and the types of outcome that are desired.

Innovation management – functional processes and desired outcomes

Function	Description	Customer outcome
Roadmapping	Development of interlinked strategic market, product and technology plans with roadmapping using an intuitive graphical user interface	• Long-term competitive differentiation • Sustained business success • More rapid growth opportunities
Managing Process	Improves cross-functional innovation processes and decision-making across the product lifecycle	• Improved investment decisions • Faster time-to-market • Reduced time in meetings
Resource Planning	Aligns resources with the best new product opportunities	• Centralised resource data and analysis • Accelerated resource plan creation • Resources, plans and portfolios aligned
Collaborative Workflow	Streamlines deliverable creation, approval and regulatory compliance	• Faster input from team members • Streamlined document review/ approval • Ensure documentation compliance
Portfolio Management & Optimization	Facilitates selection of the right products, and bringing them to market at the right time	• Decisions based on real-time data • Generation of "what-if" scenarios • Aligns development, priorities and targets
Innovation Planning	Connects bottom-up initiatives with top-down growth strategies	• Dynamic analysis of the impact planned projects will have over time on revenues, market share and key portfolio metrics
Idea Development	Helps identify, manage, and develop ideas into great products	• A strategy-driven ideation processes • Consistent pathway for evaluating ideas • Collaborative nurturing of best concepts

Source: Company information, Progressive Equity Research

It is this combination of problems and challenges that Sopheon helps its customers solve, using Accolade.

Accolade basics, and the four key areas of EIM

Stage-gate process automation

Sopheon's Accolade solution is essentially a "process automation engine". It is based on the stage-gate model created by Robert Cooper with whom Sopheon had an early collaboration, and whose accreditation the group still carries. Sopheon has then added to this for use with business portfolios whereby the best use of investment can be judged.

The "stage-gate" method was pioneered in the American chemicals and engineering sectors in the 1940s and 1950s. Essentially, ideas and projects are put through a series of "stages", with a decision "gate" between each stage. This allows a project to evolve, develop and move towards its goal (during the stages), but in a measured and controlled way, with the organisation always able to cancel or amend the project (at each gate) if the results during a given stage suggest it.

Crucially, by managing ALL projects in this way, and holding comparable data, a large company can compare and contrast the competing projects in different divisions or geographies. This allows optimal allocation of limited available capital.

The stage-gate idea-to-launch model is arguably the industry standard for managing new product innovation excellence. The process integrates numerous performance-driving practices into a solution for users of all decision-levels and functions. This may include market analysis, technical analysis and the impact on profitability. The target is to produce superior products which are launched more quickly and which generate better profits. One of the keys to the usefulness of Sopheon's product is volume: for instance, chemicals or consumer companies often have a large number of ideas and product innovations which need to be brought together in an ordered manner.

If you get the gates wrong, the stages don't matter

Accolade's focus on stage-gate principles is a key differentiator, especially from other more generic "project management" or ERP-based attempts to deal with the innovation challenge. Most technologies focus on the stages, and the various requirements to progress a plan or project; Accolade focusses clearly on the "gate" – looking to ensure that all the relevant data are available, comparable and timely. This allows critical decisions to be made with the correct information – clearly the "stages" must also be optimally managed, but the "gate" aspect is, on the Accolade platform, critical.

With this stage-gate mentality, and with a clear prioritisation of the informational quality for correct "gate" decisions, Sopheon addresses the four key areas of innovation management, as introduced earlier on page 5.

Sopheon's software both allows enterprises to achieve the best results, and saves costs relative to less-efficient ways of running such processes – the group estimates that some 30-35% cost savings can be achieved in terms of administrative processes (relative to working without relevant software).

1. Strategic Innovation Planning & Roadmapping

Roadmapping - a key USP; better decision-making at lower cost

The “roadmapping” element of the Accolade software is a key element of the suite. Essentially providing a decision support system, Accolade allows senior decision-makers to assess changes in regulation, technology and consumer preferences, and to steer corporate initiatives accordingly.

By choosing the best course of action, and efficiently allocating the right level of resource, large organisations can deliver shareholder value on a material scale.

2. Idea and concept development

Considering the many ideas that may come to management teams requires sorting the wheat from the chaff to ensure that the right ones are taken forward. However, many innovation ideas are not in line with the business strategies of the companies which spawn them. In addition, many are unlikely to be high yielding enough to warrant expanding them.

Collaboration throughout an organisation makes better ideas more likely and a consistent approach to facilitating ideas generation makes them likelier still. Just as importantly, focussing rationally on performance in a controlled framework allows the early removal or cancellation of failing projects from a portfolio.

3. Process and Project Management

Process management

Customers need Sopheon’s innovation management plan to produce viable products and positive business results to optimise all forms of investment, create new products and bring them to market. A structured, automated innovation process management solution combined with proven best practices and methodologies to manage innovation can increase the likelihood of a product’s success. Accolade’s flexible, modular structure provides the process foundation and strategic decision-making support to help bring the right new products to market. Accolade can automate any new product development (NPD) methodologies and processes.

Project management

The successful application of a structured process to innovation project management should reduce risk in the business process and increase innovation results for a given level of available resources. This can be measured through the proportion of new products that achieved their expected business goals, the number of products that can be brought to market in a specific time period and the contribution to appropriate financial metrics such as NPV or profit.

4. Portfolio Optimisation

In conjunction with strategic innovation planning (see above) which determines the funding of new product development and innovation, Portfolio Optimisation helps businesses manage their product portfolios to make the right investment decisions and to optimise the value of the portfolio (also, see above). Optimisation should focus a business on getting the most from its portfolio by aligning the portfolio and the businesses' resources with objectives and strategies. It adds transparency and should highlight low-value projects which should not receive further investment. Importantly, businesses should find it easier to adjust portfolios more quickly when responding to outside influences or changes to internal strategy.

Sopheon proposes a four stage process to deliver those outcomes:

- **Portfolio visibility**: initially, a 'tactical' view of projects and initiatives in the portfolio to facilitate operational reviews of the portfolio to assess business or technical risks, and to identify problems as early as possible.
- **Portfolio analysis**: risk assessment of the portfolio to ensure an appropriate mix of investments designed to maximise the portfolio value – but within defined, acceptable, risk levels.
- **Strategic prioritisation**: a strategic portfolio planning approach to innovation planning which starts with determining what the company's strategies are, and then using effective strategic portfolio prioritisation to achieve those strategies.
- **Dynamic planning**: maintain an ability to quickly adjust portfolios to respond to changing circumstances by using product and project portfolio optimisation to determine the best combination of innovation and NPD initiatives and projects to meet your market and business goals.

Post-implementation analysis and evaluation

Accolade also links into the major ERP platforms (notably SAP) to allow the retrieval of information regarding post-implementation or post-launch performance. In this way, "actual vs budget" analysis can be performed, and relevant changes made to later iterations of the same (or similar) forecasts and decisions. Changes can be made to projects during their implementation, failing initiatives aborted quickly, and processes refined to ensure that similar errors are not repeated in future analyses.

Accolade – additional detail and results achieved

Often, key objectives and strategy are planned by the management team but those at the operating level do not necessarily see them or have them explained. Sopheon's solutions aim to keep a customer's business strategy at the forefront of decision-making and investment by bridging the gap that prevents corporate operating plans being translated into specific, detailed action plans. It targets improved performance across four specific business capabilities which are highlighted below.

Driving enhanced performance

Solution	Examples of what it addresses for customers	What it does	What it achieves
Strategic Innovation Planning & Roadmapping	Creation of plans to achieve business objectives Focus on relevant strategies for a business	Aligns long-term Innovation Plans with market requirements, industry regulations, and supply chain capabilities	Creates stronger strategic initiatives and priorities for customers
Idea & Concept Development	Identifies ideas/concepts which support strategic objectives Identifies which ideas/concepts are viable initiatives	Generates and develops higher value Ideas and Concepts	Fills key gaps in business models which are relevant to achieving strategic initiatives
Innovation Process & Project Management	Decisions on whether initiatives should move forward to launch Decisions on whether initiatives should move into development	Improves Process and Project Management Tracks and enables key decision making, Focuses on evaluating projects associated with innovation initiatives	Accelerates productivity and velocity of development efforts through better execution and collaboration
Portfolio Optimization & Resource Planning	How to get more from a portfolio Assessing whether a portfolio is achieving its performance goals	Uses data management, analytics and integrity tools improve Portfolio Optimization	Ensures the best return on innovation investments

Source: Company information, Progressive Equity Research

Enterprise Innovation Performance

Sopheon's Accolade solution addresses the problems which are created when corporate operating plans are not smoothly translated into action plans.

Whilst key objectives and strategy are planned by the management team, the plans are not always passed on to those who are working in the company. In addition, innovation strategy and new product development initiatives – key to growth - aren't sufficiently connected or aligned with the corporate strategic plans. This results in innovation strategy remaining in line with existing processes rather than evolving to encompass new strategic plans. In addition, operating plans can quickly become out of date.

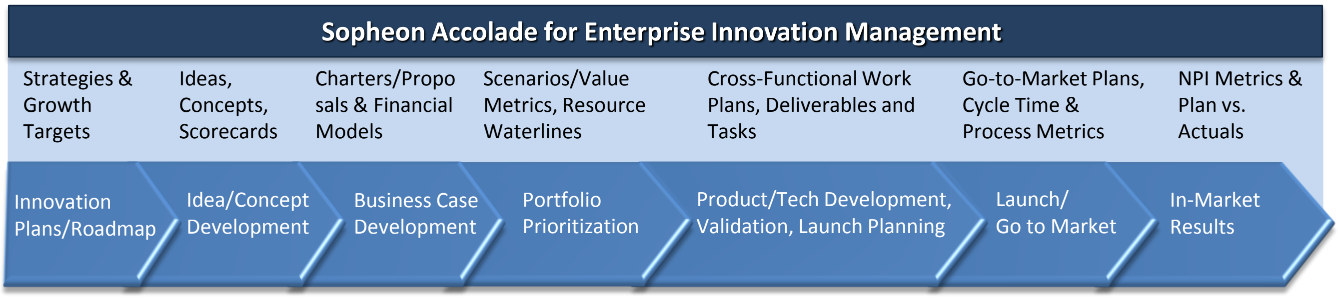
The impact is often worsened by the lack of understanding throughout the operational side of an organisation as to how the strategy is executed, and how it connects to business objectives.

To rectify these problems, Sopheon provides solutions to close the gaps that exist in organisations between planning and execution, and to connect and interpret strategic plans into execution plans and priorities. The results of implementing the solutions is demonstrated by objectively measuring business metrics such as increases in the success rate (actual versus planned performance); reduction in the time-to-market using the same investments and resources; and increased portfolio value (generally NPV).

When customers plan innovation, product development and construct their annual budgets, they need those processes to be dynamic and iterative. If they are to be harmonised, the result is a demand for a solution which connects across an entire enterprise. This is where Accolade comes into its own. Sopheon believes that it has effectively created a new layer of Enterprise Software in a segment that was previously served mainly by groups of middle-managers with spreadsheets – collating and controlling the information around innovation decision-making. Although Accolade was arguably blazing the trail in creating this market, companies have moved to adopt other platforms to automate these tasks. Specific competitors Planview and Planisware are considered later in this note, and Microsoft Project is also used by large numbers of companies who feel that it can help with these activities.

Within this overall market structure, Sopheon helps its customers define and adopt new leading practices for innovation across their enterprises:

Accolade: Interconnected decision-making platform



Source: Company information

Increasing the value of a product portfolio

In this context, a Product Portfolio is a set of investments that must be considered as a whole to ensure the achievement of specific business objectives. Generally, these investments are managed using software-based Product Portfolio Management (PPM) solutions. The value of the portfolio may be measured in terms of NPV, revenue, margin or the level of cost of savings achieved. To improve the growth in value beyond that achieved by changes to the average size of the investments, a strategic approach using software-based PPM solutions is required. This may include reducing the number of projects to improve the overall value of the remaining portfolio.

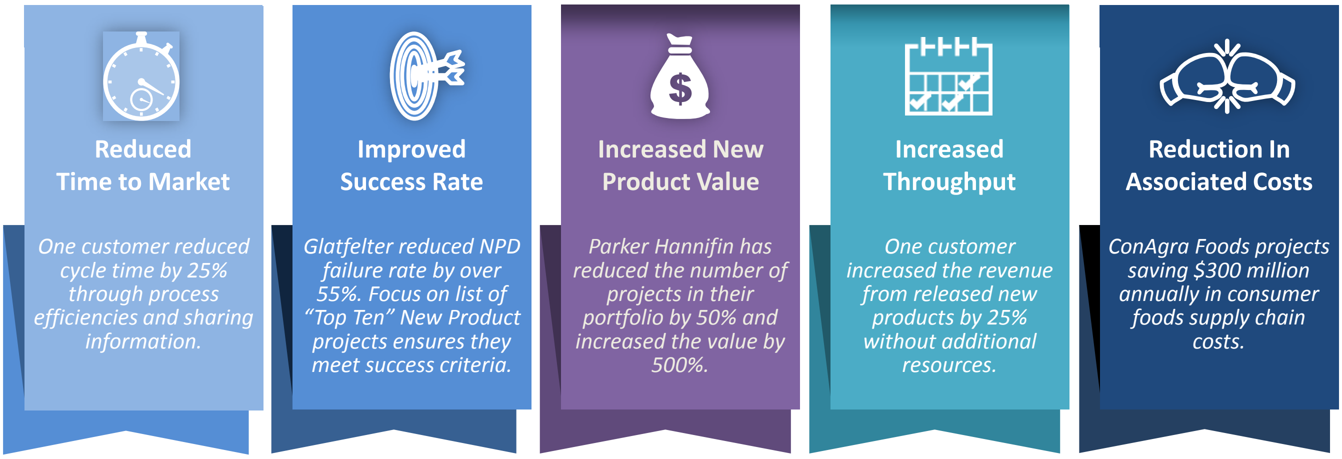
Accelerating time to market

Missing a launch date for a product can have a detrimental impact on revenue and profits. It can result in missed opportunities and, worse still, allow competitors' products to launch in the meantime. Sopheon's Accolade solution aims to reduce time to market and improve the speed with which revenues are achieved from new products.

Improving product innovation and new product development

New ideas can become stuck in their development phases and new products may not hit their profit objectives. Sopheon can help increase revenues from new products and reduce costs by aligning portfolios and new product development initiatives with corporate strategic plans and business revenue and profit goals. It is also critical to develop and maintain a strong pipeline of the right types of innovation and new product initiatives. This should be overseen in conjunction with identifying which product ideas are worthy of further investment and where resources are best allocated. Poor execution can be rectified if discovered at an early stage, and if structured processes are put in place to ensure that new product development is correctly aligned with a company's business objectives. Examples of the successes seen through Accolade's deployment are as shown in the table below :

Improving ROI



Source: Company information

Cost saving initiatives

Although development of new initiatives and products requires properly directed investment, businesses often have the capacity to yield cost savings. Accolade software can also direct cost-saving programmes and help customers understand how they impact portfolio performance and resource planning. As described in the risks section, this aspect of the software could prove useful in any global macroeconomic slowdown as customers limit innovation, but also look to reduce costs.

How Accolade is delivered – and its customer base

Sopheon has offices in the US, UK, Netherlands and Germany and has resellers in Australia and China. It also has data centres, distribution and service partners in multiple locations, giving the group true global reach, with hosted solutions in numerous geographies.

Sales are almost entirely direct – with reseller partners making up a very small (sub-5%) proportion of total revenues.

The Group has a referenceable blue-chip customer base; we understand that the Pepsico group management team actively use Accolade reports for tracking and status on key initiatives, Merck uses Accolade across multiple divisions, and Honeywell's use of Accolade is its first software platform rolled out on an enterprise-wide basis as a single instance – delivering enterprise wide visibility to new product portfolios and metrics.

The figure below highlights a number of Accolade's flagship clients :

Accolade's flagship clients

Source: Sopheon information

"Express" offering

Sopheon has added scale to its operations, filled out its product range and employed more people in pre-sales, sales and services in order to provide a strong Enterprise-class solution which addresses more than just process improvement. It has also developed an Express offering which is a quick, out-of-the-box solution. These solutions are available on-premise or in the Cloud.

SaaS options (in terms of the customer contracts) aid flexibility and reduce barriers to ownership, but clearly have an impacting on near-term revenue recognition).

Accolade cloud deployment and SaaS availability

Accolade is available as a cloud-based solution and provides customers with the same functionality as the on-premise innovation management software, using a robust enterprise-class, certified platform. Data centres for Accolade Cloud are located in the United States, the Netherlands and Australia.

The Accolade solution is designed to offer flexibility for infrastructure requirements and purchase models. It can be bought or rented through a software-as-a-service (SaaS) model, although most customers still buy the product on a traditional licence basis.

Competitive environment

Accolade competes with three main alternative ways of achieving the required goal; directly competing niche software platforms, Microsoft's Project suite and teams of managers using spreadsheets.

Niche software vendors

Planview

Planview is headquartered in Austin, Texas, USA, and is private equity-owned, with some 700 employees and 3,000 customers worldwide. The group has products for Portfolio and Resource Management, Product Innovation, Enterprise Architecture and Collaborative Work Management. Clients include Cisco, Essilor and Zurich Insurance, and Planview appears to have an active reseller and partner program, suggesting a partially indirect route to market.

Planisware

Planisware is a private equity-backed French corporation, with a base in San Francisco and with around 200 employees. The group claims 2016 revenues of some $60m, and has been established for over 20 years. Active across a range of sectors, Planisware has strong associations with the Life Sciences vertical. Reference customers for the group's Planisware product include Airbus, Bayer, Merck and Pfizer.

Note: both Planview and Planisware have their roots in project management, rather than top-down innovation portfolio optimisation – their strengths lie in running the detailed tasks in the "stages" instead of focussing on the "gate" (see page 7 for explanation), and we believe that the majority of their revenues relate to traditional project management.

Microsoft Project

Microsoft has a well-established product, known as MS Project, which is focussed on assisting in the development of plans, management and scheduling of resources, planning budgets and tracking workloads. Although the product is low-cost (a few hundred pounds for a licence) it can be used for the management and control of relatively complex programmes and projects. Microsoft does not disclose separately revenues related to Project, and although it has some scalability, it is unlikely to be seen as "fit for purpose" for managing the most complex organisations' global innovations processes.

Managers and spreadsheets

Instead of specific software, it is of course possible for large organisations to deliver management and control of innovation using teams of middle-managers, monitoring projects and ideas and reporting to senior group management. Although such structures are likely to have grown up as organisations evolve, above a certain scale, most organisations could benefit from investing in software products (such as those above) to help manage and optimise the process.

Overall, the landscape is competitive; some large (private) companies exist, with strong portfolios, and some potential customers will attempt to "make do" with generic platforms such as Project and Excel. Nevertheless, we believe that, as the pressures on large companies increase, and the crucial importance of innovation becomes ever more clear, greater numbers of enterprises will make the decision to invest relatively small amounts of money in bespoke and tailored software such as Accolade.

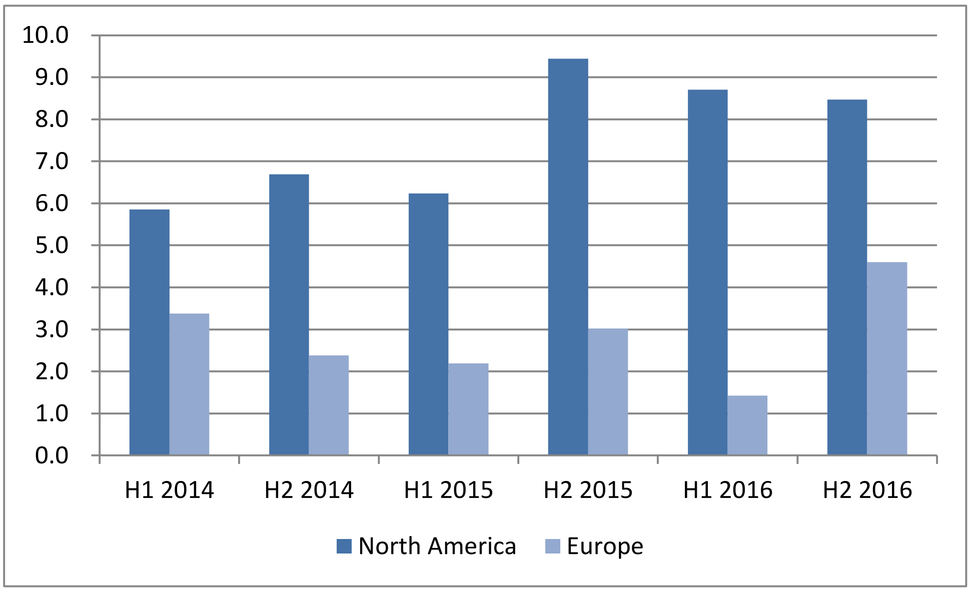
FY 2016 results and basis of forecasts

Sopheon's January trading update stated that the positive shift in the momentum of the business seen in early 2016 had continued to translate into a strong performance in the second half of 2016. That was driven by a large number of license orders in the final quarter. The combination of better revenues and cost efficiencies over the course of the year has led to good growth in revenues and Adjusted EBITDA as seen in the final results announcement

2016 results

Sopheon reported revenues of US$23.2 million in FY 2016, up 11% compared to US$20.9 million in FY 2015. North America represented the bulk of revenues once again at 71% of the total (FY 2015: 69%). The rest was mainly from customers in Europe with small contributions from Asia, Australia and the Middle East. The chart below shows the segmental reporting for the two main geographic areas for the last six half year periods.

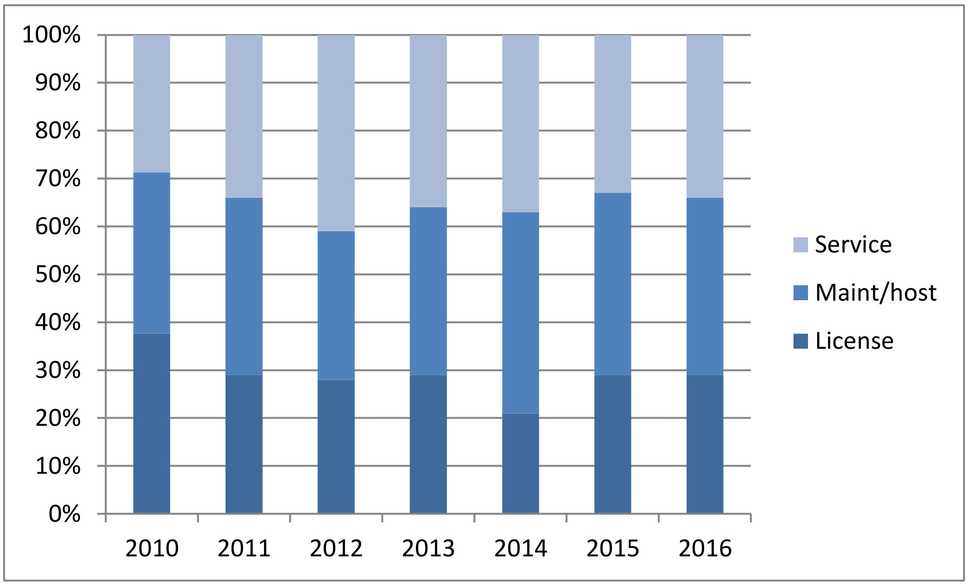
Revenue by segment (US$m)



Source: Sopheon information

Whilst revenue per license transaction reduced, it remained 'well above' $100,000 in license fees and, overall, license revenues were up 11% as both services and maintenance grew as well. Consequently, the proportion of revenues derived from licenses, maintenance, and services reflected that good growth in license revenue (see chart below).

Revenue by type (%)



Source: Sopheon information

On a constant currency basis, growth would have been 12%. The announcement notes that revenues were spread across the year more than in FY 2015 which had shown a very strong H2. Recurring revenues rose to round US$9.9 million at the end of 2016 compared to US$8.2 million at the end of 2015. The 'vast majority' of Sopheon's license revenue remains perpetual in nature, but the announcement says that it is seeing growing interest in SaaS contracts.

The announcement notes that the quarterly revenue profile was more evenly spread during 2016 with peaks in the second and fourth quarters (although Q4 remained the strongest quarter).

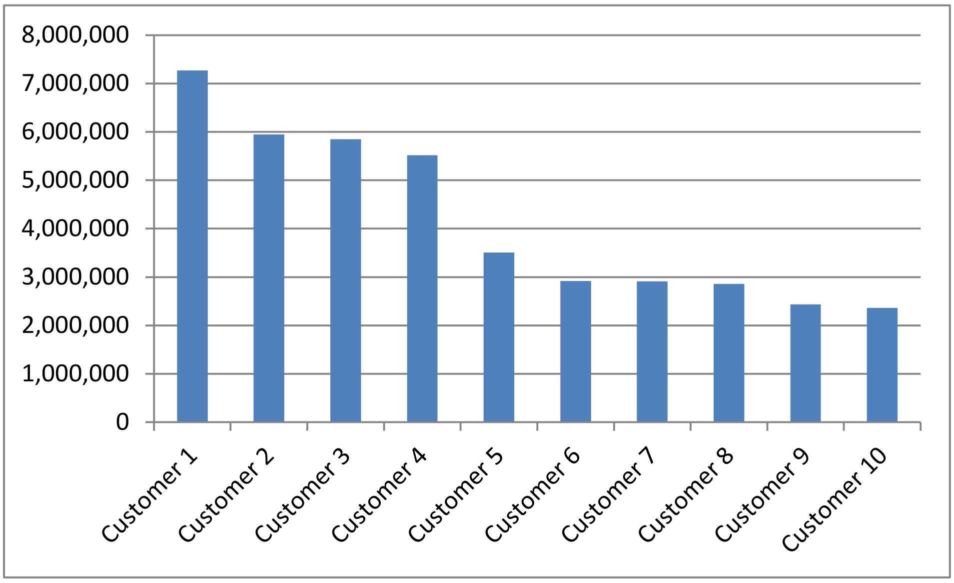
Gross margin was 70.4% (FY 2015, 72.5%) reflecting a slightly higher and more front-end loaded services mix. Overall expenditure in product development resources increased by around US$0.2 million to $4.2 million in FY 2016 after taking account of US$0.4 million of costs to services in cost of sales. The amount of 2016 R&D expenditure capitalised was US$1.9 million (FY 2015: US$2.1 million) offset by amortisation charges of US$2.0 million (FY 2015: US$2.4 million).

Sales and marketing costs increased by approximately US$0.14 million in FY 2016. While headline administration costs fell by approximately $0.3m, Sopheon notes that this was largely due to the impact of exchange gains captured following the UK's referendum decision to leave the European Union. Consequently, it has stripped US$0.3 million out of its adjusted numbers and our FY 2016 figures in the financial tables in this document reflect that. Accordingly, Sopheon's Adjusted EBITDA for FY 2016 was US$5.2 million compared to US$4.1 million in FY 2015.

A small current tax charge of US$0.1 million was incurred in FY 2016 (FY 2015, US$0.1 million) but the Group also recognised US$1.3 million (FY 2015: Nil) in FY 2016 out of a total potential asset of approximately US$16 million.

As we note elsewhere, in 2016, Sopheon's largest single customer accounted for 20% of group revenues. The chart overleaf shows cumulative 5 year revenue by Sopheon's Top 10 customers – across this longer timeframe, no single customer accounted for more than 10% of revenues.

Cumulative 5 year revenue by Top 10 customers (US$)



Source: Sopheon information

Basis of revenue and cost estimates

Sopheon sells Accolade predominantly on perpetual licences with annual maintenance and hosting fees. Few deals are pure SaaS although there is a good level of recurring income (end FY 2016: US$9.9m) . There can be a degree of lumpiness to orders with large customers potentially influencing the result in any one year. The five year average for customer concentration is that one customer generally accounts for 10% of revenue – although the figure was double this amount in 2016. Customer retention (based on recurring revenue) is around 94% by value. Given that US companies often budget on an annual cycle, there can also be a bias towards Q4 in both extensions and new orders. The product is priced on a per-user list-price basis of around US$1500-US$3000 plus around 20% per annum for maintenance.

The group sells almost entirely through a direct sales model – employing its own sales teams, focussed mainly on the USA and European market. Sopheon deals with a small number of reseller partners in certain geographies (notably Australia and China), and its use of such an indirect model is likely to increase as traction is seen with the "Accolade Express" offering, which targets smaller customers.

Our revenue assumptions for 2017 assume a similar number of large deals to those signed in 2016.

In terms of costs, we understand that Sopheon was slower in hiring people than it intended during 2016, so 2017 costs are likely to reflect this additional recruitment. For this reason, our estimate for Adjusted EBITDA in FY 2017E are broadly unchanged from the figures reported in FY 2016. We have assumed a 0% effective tax rate for our forecast horizon – this drives the lower reported EPS assumed for 2017 than 2016, which saw the benefit of the recognition of a U$1.3m deferred tax asset.

Although we have diluted our EPS estimates assuming conversion of the convertible loan notes, we have also left the associated debt within our forecast balance sheet, both for prudence and to allow like-for-like comparison of the 2016 net cash figure (which was reduced by the convertible debt) with the equivalent figures for later years within our forecasts.

Board of Directors

Barry Mence Chairman

Barry Mence has served as executive chairman and as a director and substantial shareholder of Sopheon since its inception in 1993 when he was one of the founding members. From 1976 to 1990, Mr. Mence was the major shareholder and group managing director of the Rendeck Group of Companies, a software and services group based in the Netherlands.

Andy Michuda, Chief Executive Officer

Andrew (Andy) Michuda was appointed chief executive officer of Sopheon in September 2000. From 1997 to 2000, he served as chief executive officer and an executive director of Teltech Resource Network Corporation, which was acquired by Sopheon. Prior to joining Sopheon, Mr. Michuda held senior leadership positions at Control Data.

Arif Karimjee, ACA, Chief Financial Officer

Arif Karimjee joined Sopheon as chief financial officer in February 2000. Mr. Karimjee served as an auditor and consultant with Ernst & Young in the United Kingdom and Belgium from August 1988 until joining Sopheon.

Stuart Silcock, FCA, Non-Executive Director

Stuart Silcock has served as a director of Sopheon since its inception in 1993 when he was one of the founding members of the company. Since 1982 Mr Silcock has been a principal Partner in Lawford & Co chartered accountants. Mr. Silcock was a non-executive director of Brown & Jackson plc. For four years from June 2001 to July 2005 and has held a number of other directorships in the United Kingdom.

Daniel Metzger, Non-Executive Director

Dan's career started—and remains—in sales and technology. He's spent 40 years growing his expertise as a go-to-market strategist and helping companies strategically grow and win in their markets. As Lawson Software's EVP Marketing, he helped the company grow its revenues from $13 to $400M. At startup auxilium, he set a growth strategy that ultimately made the company's sale to PTC the largest return on investment for its venture capital backer, St. Paul Ventures. As a strategy consultant, Dan helped numerous technology companies reach and exceed their growth objectives.

Risks

Risks

Risk	Risk/impact	Management action/comments
Credit risk	The risk that a counterparty fails to discharge its obligations	The group's software is principally marketed at major international corporations of good credit standing, and the group's historical bad debt experience is very low.
Credit risk concentration	Due to the potentially large size of certain individual sales, in a particular year one customer can account for a substantial proportion of revenues recorded	Such concentrations rarely persist for multiple years and therefore the directors do not believe that the group is systematically exposed to credit risk concentration in respect of particular customers. In 2015, the largest single customer accounted for 11% percent of group revenues
Key customers	Key customers could experience trading difficulties resulting in lower revenue for Sopheon.	Maintain a diverse customer base. Evolve and build recurring revenues.
Liquidity risk	Liquidity risk arises from the group's management of working capital and its ability to be consistently cash generative and meet its financial obligations as they fall due.	The group's policy is to maintain significant cash balances, short-term bank deposits and facilities with a view to having sufficient cash to meet its liabilities when they become due.
Interest rate risk	Exposure to the effects of fluctuations in interest rates on deposits and borrowings.	As at 31 December 2015, an increase of 1% on its borrowing rate would cause an annualized increase finance costs of $30,000. The annualized effect of an increase of 0.5% in the average interest rate received on the group's bank deposits would result in an increase in the group's interest income of $2,000.
Currency risk	The risk that the future cash flows of a financial instrument will fluctuate because of changes in foreign exchange rates.	The group's policy is, where possible, to allow group entities to settle liabilities denominated in the functional currency with cash generated from their own operations in that currency. The group also maintains cash and bank deposits in the currencies which are the functional currencies of its operating entities, which are the US Dollar, the Euro and Sterling.
Operating market risk	The markets for Sopheon's products may grow erratically as they continue to evolve.	Sopheon has formalised processes for soliciting input to product strategy from analysts and customers, while also capitalizing on the group's leadership in key market areas. Sopheon seeks to improve revenue predictability by balancing new customer acquisition with meeting the needs of existing customers.
Failure to finance growth	Sopheon's ability to continue to finance its investments at the optimal pace is dependent on the group maintaining profitability and sales growth alongside its investment strategy, or having appropriate financial resources in place to invest with confidence.	Sopheon has sought to focus its resources on the sub-segments that it believes offer the best opportunities for growth. Sopheon's management carefully monitors short- and medium-term financing requirements and has regularly raised additional funding resources to meet requirements.
Competition	Competitors and potential competitors have greater resources than Sopheon. New entrants or existing service providers may extend product sets to compete directly with Sopheon's products and services. This may dilute the addressable market and slow down growth.	Sopheon seeks to compete effectively with such companies by keeping its market communications focused, clear and consistent with its product and market strategy, and working to deliver first class quality of execution so that referenceability of the customer base is maximised.
Key personnel	Dependence on skilled personnel, the loss of whom could have a material impact.	Service agreements have been entered into with key executives. Sopheon checks staff remuneration against recognised benchmarks and other industry sources, and seeks to maintain pay at competitive levels appropriate to its business.
Partner risk	Failure to manage relationships with partners who market and implement its products.	Over the years Sopheon has built up a network of both resellers and consulting partners, however this has yet to mature and the revenues delivered through these relationships remain a relatively modest part of the total.

Source: Company information, Progressive Equity Research

Financial Summary

FINANCIAL SUMMARY

PROFIT & LOSS (US$m)	FY-14A	FY-15A	FY-16	FY-17E	FY-18E	FY-19E
Revenue	**18.3**	**20.9**	**23.2**	**26.0**	**29.0**	**32.0**
Adj EBITDA	1.4	4.1	5.2	5.3	6.1	7.3
Adj EBIT	**(0.9)**	**1.5**	**3.0**	**2.9**	**3.9**	**5.1**
Reported PBT	(1.3)	1.2	3.0	2.7	3.5	4.6
Fully adj PBT	**(1.3)**	**1.4**	**2.7**	**2.7**	**3.5**	**4.6**
NOPAT	(0.9)	1.5	3.0	2.9	3.9	5.1
Reported EPS (₵)	(18.4)	11.4	42.2	26.1	34.4	45.1
Fully adj EPS (₵)	**(18.4)**	**13.9**	**28.1**	**28.5**	**36.8**	**45.1**
Dividend per share (₵)	0.0	0.0	0.0	0.0	0.0	0.0

CASH FLOW & BALANCE SHEET	FY-14A	FY-15A	FY-16	FY-17E	FY-18E	FY-19E
Operating cash flow	3.2	4.3	5.4	5.3	5.6	6.8
Free Cash flow (US$m)	0.3	1.7	2.9	3.0	3.1	4.3
FCF per share (₵)	4.2	16.9	28.9	29.1	30.7	41.9
Acquisitions	0.0	0.0	0.0	0.0	0.0	0.0
Disposals	0.0	0.0	0.0	0.0	0.0	0.0
Shares issued	0.0	0.0	0.1	0.0	0.0	0.0
Net cash flow	**0.1**	**1.5**	**2.8**	**2.8**	**3.0**	**4.1**
Overdrafts / borrowings	(5.4)	(6.1)	(5.8)	(5.9)	(6.0)	(6.1)
Cash & equivalents	4.7	7.0	10.1	12.9	15.8	19.9
Net (Debt)/Cash	**(0.7)**	**0.9**	**4.2**	**6.9**	**9.8**	**13.8**

NAV AND RETURNS	FY-14A	FY-15A	FY-16	FY-17E	FY-18E	FY-19E
Net asset value	4.2	5.5	10.4	13.0	16.5	21.1
NAV/share (₵)	**58.3**	**76.0**	**142.3**	**178.8**	**227.1**	**290.3**
Net Tangible Asset Value	(1.6)	(0.0)	4.9	7.6	11.1	15.6
NTAV/share (₵)	**(22.6)**	**(0.7)**	**67.2**	**104.7**	**151.9**	**214.7**
Average equity	2.1	4.9	7.9	11.7	14.8	18.8
Post-tax ROE (%)	**-63.0%**	**23.1%**	**54.2%**	**22.8%**	**23.8%**	**24.4%**

METRICS	FY-14A	FY-15A	FY-16	FY-17E	FY-18E	FY-19E
Revenue growth	*n.a*	*14.2%*	*11.1%*	*12.0%*	*11.5%*	*10.3%*
Adj EBITDA growth	*n.a.*	*197.3%*	*27.4%*	*0.6%*	*15.5%*	*20.0%*
Adj EBIT growth	*n.a.*	*-268.2%*	*94.8%*	*-2.9%*	*33.0%*	*29.9%*
Adj PBT growth	*n.a.*	*-207.9%*	*84.2%*	*0.2%*	*32.1%*	*31.0%*
Adj EPS growth	*n.a.*	*-175.7%*	*102.4%*	*1.1%*	*29.4%*	*22.4%*
Dividend growth	*n.a.*	*n.a.*	*n.a.*	*n.a.*	*n.a.*	*n.a.*
Adj EBIT margins	*-5.0%*	*7.4%*	*13.0%*	*11.2%*	*13.4%*	*15.8%*

VALUATION	FY-14A	FY-15A	FY-16	FY-17E	FY-18E	FY-19E
EV/Sales	2.2	1.9	1.7	1.5	1.4	1.3
EV/EBITDA	29.0	9.7	7.7	7.6	6.6	5.5
EV/NOPAT	(43.6)	25.9	13.3	13.7	10.3	7.9
PER	n.a.	43.8	21.7	21.4	16.5	13.5
Dividend yield	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
FCF yield	0.7%	2.8%	4.7%	4.8%	5.0%	6.9%

Source: Company information, Progressive Equity Research estimates

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