December 2019

A • GUIDE • TO • TECHNOLOGY • GROWTH • SHARES

TECHINVEST

Stockmarket Newsletter

MARKET COMMENT

Share prices were boosted by continuing strength in corporate results in November. Since the last issue of *Techinvest* the FTSE techMARK Focus Index has risen by 8.45%.

Equities often make gains as the end of the calendar year approaches, although last December was an exception. This time around share prices in the UK may receive a boost if the General Election scheduled for December 12 produces a decisive majority for the pro-business Conservative Party. A Labour victory looks unlikely at this point, but should that happen the impact on the financial markets is harder to predict. Labour has a plan to bring the Brexit issue to a speedy conclusion and that much is likely to be welcomed by business. Some of Labour's economic policies could also have benefits for the corporate sector, particularly for small businesses. However, fears of rampant nationalisation, higher taxation, and a tougher regulatory environment associated with a government led by Jeremy Corbyn may prove extremely unsettling for the financial markets, in the short term at least.

The US will also shortly be gearing up for another Presidential election year, with the prominence of left-leaning Democratic candidates (Elizabeth Warren, Bernie Sanders) in the race for the White House potentially a factor that could worry investors in 2020. However, news last weekend that billionaire businessman, Michael Bloomberg, would enter the contest for the Democratic presidential nomination was broadly welcomed by those who favour a more centrist, business friendly approach from the Democrats as they prepare to take on the incumbent Republican president, Donald Trump. Bloomberg might not win the nomination, but his presence in the contest could ensure that the Democrats draw back from some of the more radical left-wing policies that other popular candidates, such as Elizabeth Warren, have been advocating. There is also the thought that a President Bloomberg might bring to the executive office a much-needed new perspective on how to reinvigorate a global economy that has been losing momentum in recent months.

Political concerns and uncertainty aside, we continue to be impressed by corporate resilience in a period when trading headwinds have been increasing. Most of the stocks we follow that have reported results in recent weeks have succeeded in meeting or exceeding market expectations. It would seem that while the business environment is generating significant challenges at present, management teams mostly have the right strategies and systems in place to rise above the difficulties for the time being. Sales targets are being met, order flow remains robust in most cases, and companies are maintaining good financial discipline overall. In fact, it is only a small minority of stocks we cover that have issued downbeat trading statements this year. These are mainly companies in market segments that have been particularly disrupted by the uncertainty surrounding Brexit, with businesses that rely on large orders from UK public sector customers among those most affected. Also, the fall-out from trade tensions between the US and China has reverberated around the electronics industry, making the last few months tough for semiconductor manufacturers in particular. To their credit, however, companies that are currently reporting trading difficulties mostly seem to be putting up a good defence, acting decisively to control costs and pushing forward with sensible plans to strengthen their product offering and administrative functions. Among the factors that are contributing to this greater resilience in the corporate sector are improvements in quality of management and in training of employees, the use of digital technology to create efficiency gains, better control and use of balance sheets to maintain financial stability, and the evolution of advanced management systems through the help of academic research and the development of more powerful analytical tools (including big data and AI).

Indeed, the thought occurs that a key reason why the global economy remains as buoyant as it is at present are these managerial improvements in the corporate sector; smarter business practices and systems may be helping to stave off some of the deeper structural problems in the underlying economy, such as weakness in demand due to an ageing population in western societies and the increasing tax drawdown of caring for the elderly. Whether the contribution of governments and central banks is as helpful as that of the corporate sector in supporting the economy, is difficult to assess. All parties will probably have to find ways of working smarter together if major challenges such as climate change, an ageing population, wage stagnation, and debt escalation, are to be prevented from causing widespread economic disruption in the coming decades. The excellent progress that corporates are making in terms of sustaining continuous improvement, partly with the help of science and technology, makes us optimistic about the broader social and economic outlook. Technology will have a big part to play in addressing the structural challenges globally and that gives us confidence too that the tech sector remains the best place to be for investors today and for the foreseeable future.

We review the 2019 New Year Tips in this month's issue: the gains made by the stocks we tipped very much reflects the hard work of the excellent management teams and workforces associated with the underlying companies.

IN THIS ISSUE

FTSE 100	**7403.14**
FTSE Small Cap (excl Inv Cos)	**4508.61**
FTSE techMARK Focus (formerly techMARK 100)	**5773.58**

Figures are as of the close of business on Tuesday, November 26th

UPDATES

New subscribers should note that these Updates provide comment and reviews of previous Techinvest New Buy ratings until they are no longer worth holding in our view. This is a service to regular readers and as such the notes are written in the context of the original tip.

A rating such as "Hold" means that someone who bought at or close to the tip price is advised that the shares are worth holding, even though they could still be a worthwhile buy. Sometimes a previous tip is again rated a buy. This normally arises where for no apparent reason the price is below the original tip or where subsequent good news justifies a further purchase at a higher price. Except where noted shares are on the London Official List.

Castleton Technology
74p (CTP; AIM)

Castleton warned in October that reported revenues for the six months to September 30 would be lower than expected due to issues affecting hardware sales and professional services. With the interim results published, the background to the warning is now clearer. Revenues decreased by 10% to £11.6m, with organic revenue down by 13%, driven by lower one-off revenues. The better news is that recurring revenues increased from £7.0m to £7.6m, comprising 66% of total revenues. During the period, hardware revenues fell by £2.6m. This was due to a handful of clients abandoning their hardware refresh and opting for cloud technology instead. The switch helped bolster recurring revenues, but adversely impacted in-year revenue. In professional services, revenue declined by £1.6m from the corresponding period last time. Castleton reported that in the second quarter some clients were spending more time on embedding their already-purchased solutions and therefore were less willing to embark on new project work.

Adjusted EBITDA decreased 3% to £2.9m and the company registered a pre-tax loss of £0.2m compared to a profit of £0.5m a year earlier. Cash generated from operations was £2.3m, which is 80% cash conversion. Adjusted net debt at period end was £4.1m, down from £5.1m at the end of March. A maiden dividend of 1p per share was paid in September. Significant new managed services contract wins were secured during the period with Grand Union, Suffolk Housing and Colne Housing. Other operational highlights included the completion of the first version of the Castleton.AI platform, and first standalone sale of this product. The social housing customer base increased by 4 to 595 in the period and the percentage of customers taking more than one product has increased to 53% from 50% six months earlier. Growth in contracted backlog of 5% has been achieved since the end of the first half and the board expressed confidence that revenue, EBITDA and cash generation will show a material improvement in the second half of the year.

Castleton has now incorporated a reduction in hardware revenues in its forecasts and the company is confident that it can achieve its target for professional services for the full year. With the software and managed services business consolidated in a single unit since June, this should streamline sales and delivery and have a positive impact on cross-selling and upselling. The company has also made good progress in integrating Deeplake and other positive developments include winning a place on a National Housing Federation framework agreement as preferred supplier for the Castleton Community Solution. Overall, we feel that the outlook for Castleton remains positive, despite a few recent headwinds. Continue to hold.

Synectics
152.5p (SNX; AIM)

In a trading update for the year ended November 30, Synectics has reported that it anticipates results will be materially below market expectations due to continued weakness in the UK integration businesses in security and mobile transport. As had been flagged earlier in the year, the UK public sector has been deferring many projects. In addition, Synectics' on-vehicle security activities have been adversely affected by the disruption from the bankruptcy of a bus manufacturer customer and new bus registrations in the UK market continuing to be substantially down year-on-year.

On the plus side, Synectics' core Systems division, supplying high-end surveillance systems globally, has performed well in the year and is expected to generate results ahead of the board's expectations. In particular, the company has made substantial progress in its target market sectors of Transport & Infrastructure and High Security and continues to achieve strong results from its Gaming surveillance activities in the Far East and North America. Work on the breakthrough major European transport infrastructure project announced in July 2019 is progressing as planned and is expected to be delivered in 2020.

A mix of Brexit uncertainty and factors specific to the UK transport market have taken the wind from Synectics' sails. Broker Shore Capital now anticipates revenues of £69.5m for the year, down from their previous forecast of £77.8m, with adjusted earnings per share of 11.5p versus 17.9p. Encouragingly, the company remains committed to increasing investment in R&D, with more resources being dedicated to its next-generation software solutions, as well as further enhancements to its Synergy software platform and cyber security resilience. Synectics sees increasing opportunities to capitalise on emerging software technology applications to expand its position in the market for complex surveillance solutions. Operational gearing will work in the company's favour as and when revenue growth is restored. Meanwhile, the balance sheet remains strong, with net cash of £5.3m (29.8p per share) at the end of the first half. Hold.

CyanConnode
2.1p (CYAN; AIM)

CyanConnode has announced that it is unlikely to meet market expectations for fiscal 2019 due to ongoing delays in the award of some major Indian contracts. The company sounded confident that the contracts would be secured in the coming weeks. CyanConnode has also carried out a review of its order book. In 2017, orders worth $48.0m received from NIK LLC were announced, for territories including Bangladesh and Ukraine, with deployments expected to be over a three-year period. Whilst the company is still in dialogue with NIK LLC regarding a rollout of these orders, revenue is not expected to be received in the near term. The current order book, (excluding the NIK LLC contracts), is now £40.0m.

CyanConnode had reported previously on the problems with the NIK LLC contracts in Bangladesh and Ukraine. The Indian contracts are more material to the company at this point and any further delays would risk undoing the progress made by CyanConnode over the last few years in building confidence that the business can secure significant market share in the expanding Asian market for smart meters. Weak hold.

First Derivatives
2515p (FDP; AIM)

The company has delivered a strong set of interim results, highlighting encouraging revenue growth and increased profits. For the six months to August 31, revenue was up by 11% to £117.0m and gross profit increased by 9% to £48.0m. Adjusted EBITDA climbed 22% to £22.0m and pre-tax profit was 12% higher at £8.4m. Reported diluted earnings per share were up 11% to 24.2p. Cash from operating activities was £16.4m before taxes paid (H1 2019: £13.5m) representing 74% conversion of adjusted EBITDA.

Multiple contract wins were secured during the period across all parts of the business. This includes notable deals signed with a major Japanese bank for the global roll-out of a next generation e-FX platform built on Kx and multi-year assignments across the managed services and consulting business. Software revenue was up 13% to £71.4m, driven by 19% growth in recurring software license revenue. While total software license revenue increased by 3%, this included a 52% fall in perpetual license revenue and a 19% gain in recurring license revenue as the company focused on growing its high-quality recurring revenue. Software revenue from FinTech increased by 11% to £44.6m, reflecting a 10% decline in license revenue and 30% growth in services revenue. Revenue from MarTech was up by 13% to £22.4m, driven by continued growth in subscription revenue, which was up by 20% to £11.7m, and a 7% increase in services revenue.

Managed services and consulting revenue increased by 7% to £45.2m while delivering gross margins of 24%, up from 22% in the prior period. Based on current activity levels in this business First Derivatives anticipates another year of double-digit revenue growth and has increased recruitment in recent months in line with future growth expectations. During the first half the company also completed the acquisition of the minority shareholdings in Kx Systems, funded by new financing facilities which provide flexibility to support the group's growth plans. First Derivatives added that with a strong pipeline and momentum going into the second half it has confidence in its full year performance.

These results reflect the strength of First Derivatives' high-performance analytics offerings, including the innovative Kx system. Recent multi-year contract wins have been impressive and provide a strong underpinning for future growth, while demand for the Kx database technology builds strongly in both the company's traditional financial service segment and the wider industrial and utility markets. The search for a new CEO following the death of former CEO and founder Brian Conlon last July is progressing. Strong hold.

EDITOR	Andrew McHattie
PRINCIPAL CONTRIBUTOR	Michael Kirby
CONTRIBUTORS	Conor McCarthy Darren Freemantle
SUBSCRIPTIONS	Sarah McHattie

MTI Wireless Edge
37.5p (MWE; AIM)

MTI has reported that Ginat Wave, its offset manufacturing company in India, has secured an order from a returning European customer totalling €1.5m for the supply of cable harnesses. The order is to be supplied over 5 years.

This is another large-scale order received by Ginat which is becoming a significant manufacturer within the MTI group of businesses. The demand for offset manufacturing in India in particular is considerable. We made shares in MTI a New Buy at 23p in September. Continue to buy.

SmartSpace Software
62.5p (SMRT; AIM)

Strong results for the six months to July 31 provided a further endorsement of the company's decision last year to become a pure play software business focused on the market for smart buildings. Revenue from continuing operations increased by 57% to £3.0m, with recurring revenue up 332% to £0.78m. Gross profit was £1.22m (H1 2019: £0.97m) with a gross margin of 41%. Pre-tax loss was £4.0m compared to a loss of £2.7m a year earlier. Net cash at period-end was £3.8m (13.5p per share).

The Enterprise business has a good order pipeline, mainly for existing customers, and is supported by continued investment in the Workplace platform, with version 2.1 released last July. SmartSpace is in the process of deploying the platform for its single largest customer, a global bank with 86,000 employees. The self-serve business recorded strong growth, with customer numbers for SwipedOn increasing by 23% to 3,348. The introduction of new modules and a new pricing model resulted in ARPU growing by 10.4% during the period. As part of the company's initiative to broaden the addressable market for SwipedOn, a Dutch-language version was launched in the Netherlands in July, the first time SwipedOn has released a non-English language version of its visitor management solution.

The company has also announced that it has agreed to acquire Space Connect, an Australian cloud-based software provider, for a total consideration of approximately £3.2m in an equal split of cash and shares. Space Connect's product suite comprises a cloud-based solution that provides small and mid-market customers with the ability to manage desks, meeting rooms, visitors and deliver occupancy data. Whilst the functionality offered is similar to the SmartSpace Workplace enterprise platform, Space Connect has a range of distinctive functionality already available that includes facial recognition, voice recognition, enhanced analytics and artificial intelligence. In addition, Space Connect has a number of key integrations with Zoom and Polycom, offering video conference and VoIP services respectively. SmartSpace anticipates that the acquisition will deliver savings of up to £1.2m per annum in product development spend from 2020 onwards and help accelerate the development roadmap for the enlarged group by up to two years.

Following the disposal of the Systems Integration and Managed Services divisions which completed in June 2018, SmartSpace has made significant progress in becoming a provider of integrated space management software. Modules developed so far include desk, meeting room and visitor management, wayfinding and event management. The company has also signed two major enterprise customers, one in the financial sector and one in the hospitality sector. Going forward, SmartSpace aims to provide greater visibility of forward revenues by targeting the self-serve and mid-range markets which can deliver pure SaaS revenues at higher margins. Acquisitions are also on the agenda and the example of Space Connect shows how significant synergies can be achieved through deals of this kind in a sector that is ripe for consolidation. Hold.

Open Orphan
6.3p (ORPH; AIM)

Open Orphan, which was formed through the reverse takeover of Venn Life Sciences earlier this year, has signed a contract with Ipsen Group. Under the agreement Open Orphan will be the preferred partner for Ipsen's Data Management and Biostatistics. The preferred vendor structure will last for a 3-year period. This partnership has already delivered substantial revenues for Open Orphan and positions the business as an integrated drug development partner for Biopharma companies in Europe such as Ipsen.

The company has also signed a contract with Carna Bioscience for a first-in-human clinical pharmacology trial. Carna is a Japanese company specialising in kinase biology, developing innovative treatments against cancer and immune disorders. Open Orphan will provide Carna with a range of expertise from chemistry manufacturing and controls to clinical trial management as well as biometry, legal and regulatory support. The contract is expected to deliver significant revenue for the company over the next twelve months and builds upon several years of existing work between Open Orphan (in the guise of Venn Life Sciences) and Carna during which both parties closely collaborated on drug development planning and pre-clinical activities services contracts.

These new partnership agreements are part of Open Orphan's strategy to transform Venn Life Sciences and are expected to be amongst many long-term partnership contracts which will deliver recurring revenues for the business. Open Orphan's aim is to transform Venn through restructuring to reduce operational leverage, increase revenue, improve operating margins and launch additional complementary services. Hold.

GAN
141p (GAN; AIM)

GAN has issued an update on trading for the four months ended October 31, together with an updated outlook for the full year ending December 31. Trading was ahead of expectations due to higher-than-expected demand for internet gambling in both New Jersey and Pennsylvania. Gross operator revenue in the four-months was up 222% to US$121.5m. During the period internet sports betting was launched in the State of Indiana and revenue was derived from the overseas internet casino delivered by GAN to the Chickasaw Nation of Oklahoma in selected European markets. GAN reported that the outlook for 2019 continues to remain highly positive and the company now expects to see year-over-year revenue growth in excess of 100% for full year 2019 (2018: £10.6m).

The ramp-up in real money internet gambling is accelerating ahead of GAN's budgeted expectations in Pennsylvania and New Jersey, particularly since the start of the American football season in early September. GAN's early mover advantage (the company's technology platform has been optimised over several years in conjunction with clients in New Jersey) is proving to be a significant competitive advantage as US internet gambling operators scramble to position themselves for further liberalisation of US gaming laws. GAN's share price has more than doubled over the last three months on the back of positive trading updates and news of the rapid increase in internal gambling as more US states embrace regulated gaming. We first tipped the shares at 31.5p in August 2016. After such a strong run up in the share prices in recent weeks, we would suggest booking part profit (or, at least, selling enough shares to cover the original purchase cost). Keep the rest of the shares in anticipation of further gains in due course. Hold.

Alfa Financial Software
96.7p (ALFA; AIM)

Alfa has announced a new contract win with the asset finance subsidiary of a UK challenger bank. The deployment, to be implemented in a short timeframe, will involve cloud hosting and maintenance bundled into a monthly subscription model. Expected revenues are already included in the company's forecasting assumptions for 2019 and 2020, and the contract value will be in the lower tier relative to other Alfa implementations.

Although this is a relatively small contract, it is strategically significant in demonstrating that Alfa's software is accessible for many ambitious smaller organisations in the UK market. The contract win also provides welcome relief for Alfa's management after a challenging period when the share price has been under pressure due to news of contract delays and market headwinds. At core, we feel that Alfa has a good business based around an innovative software suite and embedded relationships with key customers. Trading difficulties over the last eighteen months have highlighted areas where the business needs to be strengthened and management have been taking appropriate steps to implement the necessary improvements. On that basis, we feel it is worth maintaining an interest for recovery. Hold.

Kape Technologies
127p (KAPE; AIM)

Kape's share price was boosted during the month after the company announced the transformational acquisition of Private Internet Access (PIA) for a total consideration of circa US$95.5m. The consideration will be satisfied by a combination of circa US$52.9m cash and the rest in new Kape shares. Established in 2009, PIA is a US-based digital privacy company with a strong position in data privacy services and over one million paying customers. Since its inception, the business has grown to become a leading VPN service provider focused on the consumer market and employing approximately 65 employees. For the year to 31 December 2018, PIA generated revenues of US$47.42m and cash of US$16.3m.

The acquisition, which is expected to be immediately earnings enhancing, represents a significant step-change in Kape's development, with the potential to deliver substantial operational and financial benefits. Not only will it double Kape's existing customer base, it is also expected to increase earnings by around 90% in fiscal 2020. Adding PIA will give the enlarged group a strong presence in North America and position the company as a truly global operator for the first time. Kape estimate the immediate cost synergies to be between US$3.5m-4.5m on an annual basis. The privacy market is currently worth around US$24.0bn and is expected to grow by 50% by 2022 at a CAGR of 15%. We made shares in Kape a New Buy at 65.5p in January 2018, with a gain to date of 93.9%. Strong hold.

ULS Technology
47.5p (ULS; AIM)

Updating the market on trading for the six months to September 30, the company has reported that demand for its technology has remained robust. Despite a challenging housing market, the company's pre-tax profit in the first half was similar to last year at £2.8m. Cash flow was strong and this will enable the payment of a progressive dividend for the period. ULS reports that it has concentrated on higher margin segments of the market and has continued to invest in its key products, which should allow growth to accelerate over time.

ULS has a strong distribution network, is highly operationally geared and remains well placed to generate significant returns as the market improves. The focus remains on developing high margin routes to market with the continued roll out of the company's new flagship product, DigitalMove, which is expected to start contributing directly to revenues during the next financial year. The roll out of DigitalMove will enable ULS to optimise commercial opportunities within its existing client base in addition to providing a stronger basis for targeting new clients. Continue to hold.

Pennant International
86.5p (PEN; AIM)

Pennant has been awarded a major new contract by a UK OEM valued at circa £3.4m for the design and build of a helicopter maintenance training aid which will comprise a full-size representation of the relevant airframe to enable UK military training on anti-surface weapons systems. The contract is an engineered-to-order programme, whereby revenue will be recognised on a 'percentage of cost completed' basis, as the programme runs across 2020 and 2021, with final acceptance due in the fourth quarter of 2021.

Pennant has also given a positive update on a major contract for Qatar. As previously announced, the company had budgeted to realise key revenue streams in the second half of 2019 upon acceptance of training aids for the Qatar programme. Pennant has now confirmed that all four IAMT devices for Qatar have achieved acceptance, enabling the revenues and profits associated with those training aids to be recognised in the current year. Two further products are on schedule for acceptance testing in December 2019.

After a challenging period for Pennant, it is good to see products being successfully completed on schedule and on budget for the Qatar programme, plus the conversion of one of a number of key opportunities in the company's substantial single-source pipeline into a valuable contract award. Strong hold.

Parity
9.25p (PTY; AIM)

Parity has announced a revenue sharing agreement with healthcare technology specialist, Integumen. The deal will give Parity access to Integumen's AI software that it will be allowed to supply across its client base, which includes the NHS, central government and private institutional clients. The software includes full GDPR compliance with secure cloud data migration from existing legacy systems to a digital workplace through military grade encryption.

This agreement accelerates Parity's transformation from a predominately commoditised recruitment business to a data consultancy service provider of intelligent data management systems. Integumen's technology will help Parity accelerate its plan to support its public sector and healthcare clients with their requirements to securely manage and extract value from their data. Transitioning from a recruitment business to a value-added supplier of data management services will take time, but the company has made significant strides in this direction since the appointment of new CEO, Matthew Bayfield, in February. Continue to hold.

Ideagen
176p (IDEA; AIM)

Trading has remained strong in the first half to October 31, Ideagen has reported. Revenue and EBITDA are both expected to be significantly ahead of the same period last year and in line with management's expectations. This has been achieved through both organic revenue growth and the acquisitions of Redland Business Solutions in June and Optima Diagnostics in October. Annual recurring revenue has increased by 20% to £43.9m. This comprises acquisition-led growth of £3.8m combined with organic growth of £3.7m within the period. Total organic revenue growth was 7%, which, in the context of an accelerated SaaS transition, represents a strong performance. Recurring revenue is expected to be approximately 74% of total revenue and is expected to rise to over 80% in the next full financial year.

Ideagen has a clear strategy to grow revenues organically and maintain high EBITDA margins whilst transitioning from a perpetual licence to a SaaS-based subscription model. Successful execution of this strategy should provide an even more robust business model and a higher quality of earnings over the medium term. Strong hold.

Kainos
607p (KNOS; Computer & Software Services)

Results for the six months to September 30 showed further strong growth across Kainos' businesses. Revenue was up 29% to £86.9m and pre-tax profit climbed by 38% to £12.0m. Sales orders increased by 10% to £99.5m, with SaaS sales orders up 156% to £16.4m. The value of contracted revenue that has yet to be recognised grew by 4% to £131m. Diluted earnings per share were up 39% to 7.9p and cash at period end was 6% higher at £41.3m (35p per share).

Digital Services delivered strong growth, driven by new and existing customer demand. Revenue from the division increased by 29% to £73.7m. Trading also accelerated in the smaller Digital Platforms operation, where revenue increased by 34% to £13.2m, helped by strong international expansion as more overseas customers signed up for Smart, the company's SaaS platform for automated testing of the Workday suite. There are now 190 international organisations using the platform compared to 139 at the same point in 2018. Revenue diversification across the group continued, with revenue from customers in commercial sectors increasing by 66% to £29.3m. The majority of this expansion came from business conducted outside the UK which rose by 86% to £17.9m during the period. SaaS and software-related revenues also performed strongly increasing by 34% to £13.2m.

Kainos also completed the acquisition of two specialist consulting companies, Formulate in the UK and Implexa in Germany, in November. The acquired companies are experts in the Adaptive Insights financial and business planning software. Adaptive Insights was acquired by Workday in June 2018 to help businesses better plan, execute and analyse data across the enterprise in one system, by combining Adaptive Insights' business planning cloud technology with Workday's applications for finance and HR. Since inception in 2016, Formulate has served as one of only eleven certified partners to Adaptive Insights and is one of its largest partners worldwide. Established in Hamburg in 2014, Implexa is one of the leading German Adaptive Insights partners, working in the ERP and Planning market. The acquisition adds Hamburg-based software and consulting capabilities to Kainos' existing Frankfurt presence and capabilities.

With a strong set of first half results, Kainos remains on track to deliver its tenth consecutive year of growth despite the tough trading environment in the UK currently. Successful international expansion is helping and the business is also benefiting from increased work in the commercial sector so that it is no longer quite so reliant on large public sector contracts. The latest acquisitions of Formulate and Implexa appear a good fit with Kainos' expansion strategy, helping the enlarged group to build and expand on its Workday offering and to execute Adaptive Insights contracts across the UK and wider Europe. We made Kainos a 2019 New Year Tip at 402p, with a gain to date of 51%. With a strong order book and pipeline of future prospects, we feel that the upward re-rating of the shares has further to go. Strong hold.

Proactis
49p (PHD; AIM)

Results for the year to July 31 confirmed that stability has returned to Proactis' business after a period of difficult trading in 2018. Reported revenues increased by 4% to £54.1m and annualised recurring revenue was maintained at £44.3m. Adjusted EBITDA of £15.1m (2018: £17.3m) was in line with expectations. Adjusted earnings per share were 6.6p compared to 10.6p a year earlier. Trading in the company's US CGU business has been challenging over the last two years and to reflect that an impairment charge of £27.0m was booked with these results. Pre-tax loss was £25.8m against a profit of £3.8m in 2018. Net bank debt at period end had reduced to £36.5m from £39.3m at January 31, and management report that the debt remains fully serviced and within covenants.

Contract value signed in the period was £11.3m, adding to the revenue pipeline for future years. Deal flow was strong with 60 new names added during the period (2018: 64). Increased up-selling to existing customers saw 127 deals secured compared to 113 in the prior year. Esize, which was acquired in August, has performed well. The first sale by the German commercial team has been completed, demonstrating early success of Proactis' recent restructuring and new strategic plan. A committed overdraft facility of £20.0m has been signed to support the delivery of the company's supplier-paid accelerated payments solution, bePayd, which is now live.

After receiving expressions of interest from potential acquirers, Proactis announced in July that it had entered a formal sales process. This has led to more advanced discussions with certain parties and Proactis confirmed that the process remains ongoing with no certainty that any offer will be forthcoming.

Following the completion of the operational review announced last April, Proactis has been working to assess and rectify the issues that have adversely impacted the company's performance *over the last two financial years. This has included managing leadership change throughout the regions affected with the aim of building teams that are capable of executing Proactis' new go to market strategy. The board believes that this capability is now in place and the management team can now execute efficiently to deliver a substantial and high growth business. Relevant progress is already being seen with the pipeline starting to build and an encouraging level of order intake in the new financial year. However, we anticipate that reducing customer churn, which has been the main problem detracting from the business over the last two years, will be a gradual process that may take a number of years to conclude. In the meantime, there remains the possibility that the formal sales process will lead to a takeover offer. Proactis currently trades on a lowly price-to-sales ratio of 0.84, and with debt falling, a competitive take out price ought to be some way higher than the current market capitalisation. Hold.*

Tracsis
622.5p (TRCS; AIM)

Tracsis has reported another year of strong growth. For the year to July 31, revenue climbed by 24% to £49.2m. Organic growth accounted for 9% of the revenue increase, while the other 15% was contributed by three acquisitions completed during the year. Adjusted EBITDA was up 12% to £10.5m and operating profit before exceptional items increased 13% to £6.7m. Fully diluted adjusted earnings per share increased 8% to 27.42p and the cash balance at year-end was up by £1.8m to £24.1m (84p per share). The cash balance increased even after paying £9.6m in respect of the three companies that were acquired in the year.

Revenue from the Rail Technology & Services division increased to £21.9m from £19.0m a year earlier. Pre-tax profit was £6.7m compared to £6.6m last time. Within the division, sales of operational software and infrastructure software, excluding acquisitions, increased by 9% to £14.8m. Revenue from the remote conditioning monitoring product suite also grew strongly, up by 64% to £4.9m. Revenue from the Traffic & Data Services division was £27.3m compared to £20.8m a year earlier. Pre-tax profit increased by 45% to £2.9m, with continued margin improvement reflecting an increased focus on data analytics and a stronger technology offering. Order flow remained robust during the period, with Tracsis securing its largest software contract to date, a five-year framework agreement with a major train owning group for the TRACS Enterprise product.

The acquisitions Tracsis completed in 2019 will have a full impact in the next year and, combined with the strong pipeline of organic sales opportunities, provide a good platform for future growth of the business. Barriers to entry are quite high in Tracsis' chosen markets and contracts are often sold on a repeat basis. Drivers of business growth in the transport sector are also strong, with big data/connectivity being a key theme alongside a growing requirement for greater levels of operational efficiency and asset optimisation across the industry. Trading on a prospective P/E of 21 for the current year, we feel the shares remain good value given the strong position Tracsis occupies in a rapidly growing market. Continue to buy.

Instem
373p (INS; AIM)

The company has acquired US-based Leadscope for a total consideration of up to US$4.6m in cash and shares. Founded in 1997, Leadscope is a provider of in-silico safety assessment software used to enhance and accelerate life sciences research and development. The software is provided on a subscription or pay-per-use basis and uses artificial intelligence and machine-learning algorithms to predict potential safety outcomes and to enable scientists to perform expert reviews. Leadscope has 65 clients, including 10 of the world's top 20 pharmaceutical companies. For the 12 months ended 31 July 2019, Leadscope reported sales of US$1.9m and EBITDA of US$0.4m. Recurring subscriptions accounted for 78% of revenues, providing strong levels of visibility. The acquisition is expected to be earnings enhancing from 2020.

This bolt-on acquisition will extend Instem's currently small but rapidly growing Informatics operations, adding a regulatory-backed business with strong recurring revenues and high levels of client retention, in addition to opening up the potential for cross selling of solutions to the combined client base. Leadscope also aligns well with Instem's strategy of expanding into adjacent market areas, particularly those having strong regulatory drivers for technology adoption. Following the announcement, broker N+1 Singer upgraded its forecasts for fiscal 2020 and fiscal 2021 by 6.5%, saying that it sees scope for significant revenue synergies over time. For 2020, the broker is now forecasting adjusted pre-tax profit of £4.7m and corresponding earnings per share of 22.5p. These figures rise to £5.1m and 24.5p for 2021. On a prospective P/E of 16.6 for fiscal 2020, the shares offer reasonable value. Strong hold.

Blue Prism
1163.5p (PRSM; AIM)

In a trading update for the financial year ended October 31, Blue Prism reported that it has seen a significant acceleration in sales in the second half of the year, contributing to a strong full year performance. Sales volumes have continued to be high, particularly in upsells, and increased deal sizes have driven a significant increase in the total business generated in the year of £181.0m (2018: £143.0m). The company added 685 net new customers during 2019 while maintaining a customer retention rate of 96% (2018: 97%). Total customer base at year-end was 1,677, an increase of 69% on 2018. Blue Prism closed the year with a cash position of £74.0m (94.6p per share).

The market responded positively to the update, marking the shares up 30% on the day of the announcement. Part of the excitement was due to the strong increase in new customers. Blue Prism has an excellent track record of upselling into its customer base and by adding so many new clients the opportunities for further sales growth and efficiency gains are considerable. RPA is fast emerging as a significant software category and customers are beginning to materially scale their deployments, with Blue Prism well placed to be a major beneficiary of this trend. We rate the shares a strong hold.

CentralNic
60.25p (CNIC; AIM)

CentralNic has announced the acquisition of Team Internet, a German domain name monetisation services provider, for up to US$48.0m. The acquisition is expected to be immediately earnings enhancing and significantly accretive in the financial year ending 31 December 2020 before any synergies. Team Internet generated US$66.7m of revenue and US$10.6m of adjusted EBITDA in the 12 months to 30 June 2019. Team Internet's revenue is highly recurring with approximately 35,000 individual customers signed to rolling contracts to monetise a total of more than 20 million domain names using Team Internet's proprietary technology for matching domain names with the highest paying advertisers. The acquisition will add an additional 40 staff in Germany, shifting CentralNic's critical mass with almost 200 engineering and other staff members based there.

The company also issued a trading update for the nine months from January 1 to September 30. For the period, unaudited revenues were US$77.1m and adjusted EBITDA was US$13.1m. The acquisitions of TPP Wholesale, Hexonet, and Ideegeo contributed US$5.6m of revenue and US$0.9m of adjusted EBITDA for the two months under CentralNic's ownership. The net debt position was US$35.9m at September 30, reflecting the issuance of a €50.0m bond in July and continued strong cash generation.

The acquisition of Team Internet is a natural extension of CentralNic's domain sales business and a major step in adding domain related web services to the company's service offering. It is another web-based recurring revenue business that will be significantly earnings enhancing from day one. There will also be considerable opportunities to drive cross selling by expanding both Team Internet's customer base and product set. Following completion of the deal, CentralNic will be one of the world's leading providers of domain name monetisation services with a proprietary platform that enables domain name investors to generate recurring advertising income from their assets. Management believe that domain monetisation is a service that could potentially be bundled with an estimated 30% of all domain name registrations. This represents a significant opportunity as CentralNic currently has 18.6 million domains under management. The shares were a 2019 New Year Tip at 52p. Continue to buy.

IQE
45.05p (IQE; AIM)

In a trading update for the year to December 31, the company reported that it now expects to deliver revenue of between £136.0m and £142.0m, compared to the previous guidance range of £140.0m to £160.0m, including a forex tailwind of circa £3.0m. A mid-single digit adjusted operating loss is now expected resulting from revenues being slightly below the previous guidance range, additional one-off commissioning costs at the new foundry in Newport, and general diseconomies of scale associated with operating at low volume in some sites. Since June, the company has taken steps to reduce costs and capital expenditure as the infrastructure phase of capacity expansion has been completed. Capex will be towards the bottom end of the previous guidance of £30-40m and the net debt position at year end is expected to be between £15.0m to £20.0m, against increased debt facilities of £57.0m announced in the summer.

The outlook for 2020 includes a seasonally weak first quarter and continued supply chain transitions in the wireless market. Beyond the first quarter, IQE is cautiously optimistic about a return to growth, driven by expected content gains in an expanding market for 3D sensing, demand for GaN to meet accelerating 5G infrastructure deployments and expanding Asian market opportunities for both Photonics and Wireless products as supply chains continue to localise. Taking all of the above into account, the company expects total revenue will return to moderate growth in 2020.

This was a disappointing update, though not entirely unexpected given the trading headwinds affecting the semiconductor market presently. Shortfalls in revenue relate predominantly to two major customers, with whom IQE is confident it has not lost share and who we understand remain well positioned for returns to growth in 2020. More broadly, IQE remains well positioned to capitalise on an expanding future compound semiconductor market opportunity driven by the macro trends of 5G and connected devices. Continue to hold.

Playtech
401.65p (PTEC; AIM)

Playtech has issued a mixed update for the period from July 1 to October 31 (the first four months of the second half). Trading within the core B2B Gambling and Snaitech continues to exceed management expectations, while trading in Asia has remained stable. However, trading conditions in TradeTech have been highly challenging during September and October and Playtech expects the division's results for 2019 to be well below management's expectations. Overall, group adjusted EBITDA for fiscal 2019 is now expected to be a little below current consensus.

Regulated B2B Gambling revenue for the four months was up 12% on the same period in 2018 at constant currency and excluding acquisitions. Revenue going forward should be boosted by the signing of a long-term structured agreement with Wplay, one of the leading betting and gaming brands in Colombia. Playtech will be Wplay's strategic technology partner and will deliver operational and marketing services. This further extends Playtech's reach in Latin America and follows the success in the region with Caliente, which has become one of the company's top licensees by revenue. Snaitech's operational performance continues to be very strong, exceeding management's expectations, driven by continued outperformance in online.

Although trading conditions in Asia remain tough, it was good news that Playtech's position in that market is stabilising after a period of significant challenges. The core B2B Gambling business continues to go from strength to strength and Snaitech continues to deliver on its early promise. TradeTech's difficulties echo those reported by other operators in the sector and it would not be surprising to see some restructuring or disposals in this part of the business in due course. Playtech has a leading position as a technology partner for gambling operators around the world, but the sector faces a lot of challenges at present and that is making for a tough trading environment for the company at present. Weak hold.

CML Microsystems
313p (CML; Technology Hardware and Equipment)

Results for the six months to September 30 reflected a challenging semiconductor market. Revenues were down by nearly £2.0m to £13.06m and gross profit fell 10.1% to £9.73m. Pre-tax profit was £0.91m compared to £2.36m a year earlier. Basic earnings per share were 6.0p (H1 2018: 12.65p). The balance sheet remained strong, with no borrowings and net cash of £11.20m (65.6p per share).

CML described the period as one of stabilisation and continued R&D investment against a market backdrop that remains difficult. Sequential six-monthly order bookings were a little ahead and evidence of a shorter timescale between customer order placement and requested delivery date is seen by management as positive indicator going forward. Shipments into wireless public safety applications were robust, but storage solutions continued to be impacted by the memory market cycle and the fall-out from the US/China trade wars.

CML sounded positive about achieving a sequential improvement in sales revenue in the second half in conjunction with a favourable product mix. Measures to tighten cost control should also start to feed through, helping to offset the continuing headwinds in the semiconductor market. We feel that with an expanded portfolio of semiconductor solutions and an improved sales operation, CML remains well placed to benefit once customer demand normalises, and the timing of that recovery in the market should become clearer early next year. Continue to hold.

Dialight
246p (DIA; AIM)

Trading remains tough for Dialight, with the slowdown in global markets and the ongoing uncertainty about US/China trade negotiations being the latest headwinds to batter the stock. In a trading update for the year to December 31, the company confirmed that the Signal and Components business has had a difficult year, with market conditions remaining weak. Recovery is not anticipated until the second half of 2020. Group full year EBIT is now expected to be in the range of £5.0m to £8.0m after adjustment for non-underlying costs of around £6.0m.

Dialight remains in recovery mode with a strong focus on rebuilding customer and distributor confidence following the disruption caused by an outsourcing manufacturing arrangement with Sanmina that turned sour. Operations are running more smoothly now that manufacturing has been returned in-house, but the switch has involved significant costs and to date efforts to reach a compensation settlement with Sanmina have drawn a blank. Meanwhile, the business continues to face trading headwinds over which it has little control. We think these difficulties should prove short-term and that the market for LED lighting continues to benefit from strong secular growth trends. Dialight also now has a leaner and more tightly focused business as a result of the restructuring necessitated by the breakdown in the relationship with Sanmina. Accordingly, we think the shares are worth retaining for recovery, so we rate them a hold.

Idox
35.45p (IDOX; AIM)

Idox has announced that it expects to report results in line with the board's expectations for the year ended October 31. Revenues are broadly unchanged on the corresponding period last time at £66.0m, with recurring revenue up 20% to £38.9m. The contracted software and services order book increased by 29% to £12.1m. Adjusted EBITDA matched the figure achieved in the prior fiscal year at £14.4m. Net debt was down 17% at £26.4m.

Idox has made significant progress over the last year following the appointment of a new board, new senior management and finance teams, and full integration of prior period acquisitions. The company continues to be focused on its core of public sector software, supported by its content and engineering divisions. Idox's financial profile is starting to look more solid now, with a significant reduction in debt and strong growth in recurring revenues. Continue to hold.

MARKET MOVERS

Risers Over the Month	Change %
Kape Technologies	59.75
CentralNic	45.18
Blue Prism	42.37
Mercia Asset Management	37.13
Parity	37.04

Fallers Over the Month	Change %
Lightwave RF	-56.86
CyanConnode	-48.15
IQE	-37.21
Checkit	-29.46
Dialight	-26.57

Stocks from our list of current New Buys featured heavily among the strongest risers this month. Shares in security software specialist, **Kape Technologies**, put on 60% after the company announced the transformational acquisition of a US-based digital privacy company, Private Internet Access, for US$95.5m. The deal will give Kape a strong presence in North America and position the company as a truly global operator for the first time. It will also double Kape's existing customer base and is expected to increase earnings by around 90% in fiscal 2020. A year-end trading update from **Blue Prism** referred to a significant acceleration in sales in the second half, with the share price soaring by 42% in response. **CentralNic** was another big gainer among our New Buy stocks, up 45% after issuing a strong trading update and announcing the acquisition of Team Internet, a German domain name monetisation services provider, for up to US$48.0m. The deal will expand CentralNic's presence in continental Europe and further strengthen the company's fast-growing domain-related web services business.

Shares in **Parity** advanced by 37% on news of an innovative revenue-sharing agreement with healthcare technology specialist, Integumen. **Mercia Asset Management**, the tech investment specialist that was formerly named Mercia Technologies, was another big gainer, up 37% after a share overhang was cleared. Other stocks from our New Buys list that made double-digit gains in November were **XLMedia**, **Keywords Studios**, **MTI Wireless Edge**, **Softcat**, **Castleton**, **Vianet**, **Kainos**, **Pennant International**, **Gooch & Housego**, **Ideagen**, **Eckoh**, **Alfa Financial**, and **GAN**.

The biggest faller last month was smart homes solutions provider, **LightwaveRF**, down 57%. This is not a stock we have covered in *Techinvest*, though it has been on our radar as a company to monitor given the exciting market opportunities for home automation technology. LightwaveRF has been listed on AIM for a number of years but remains loss making and the share price has been heading south almost continually since early 2015. In November the company issued a year-end trading update mentioning that the rate of growth in revenue had fallen below the board's previous expectations due to a shortfall in cash available to fund sales activity in the fourth quarter. This has since led management to undertake a strategic review and to initiate a formal sale process with the aim of attracting a larger partner to invest in the business. The company generated around £4.2m in sales in the year just ended and generally has been making solid operational progress in recent times. This is the type of business that in the US would probably have no difficulty in raising significant funding in one tranche to bring its products to market quickly and to support an appropriately robust sales effort. In the UK, unfortunately, investors are more reluctant to provide a generous level of funding in one initial shot; they prefer to invest smaller amounts in stages, with release of further funds dependent on performance of the investee company. That cautious approach to financing can result in early stage companies failing to take full advantage of available market opportunities in a timely manner due to being too budget-constrained, and achieving profitable growth then becomes more difficult as a consequence. From our list of New Buy stocks, **IQE**, **CyanConnode**, and **Dialight** were significant fallers in November and we report on each of these companies in the Update section of this issue.

REVIEW OF 2019 NEW YEAR TIPS

New Year Tips Update			
Company	**Price (p) 31/12/18**	**Price (p) 26/11/19**	**Gain/Loss %**
CentralNic	52	60.25	15.9
Cerillion	136.5	194	42.1
Clinigen*	750.75	855	13.9
Eckoh*	35	57.5	64.3
GB Group	423	673	59.1
Kainos*	402	586	45.8
Oxford Metrics	72.5	88.5	22.1
Pennant International*	119	88	-26.1
RM	203	280	37.9
Scisys*	148.5	254.15	71.1
Softcat*	591	1125	90.4
Universe Group	3.4	5.3	55.9
Average Gain			**41.0**
Average Gain of Naps			**43.2**
** denotes Nap Tip*			

The New Year Tips have delivered a pleasing performance, with an average gain of 41.0% compared to a return of 29.6% over the same period for the FTSE techMARK Focus Index and just 9.9% year-to-date return for the FTSE 100.

The performance of the six nap tips was slightly ahead of the overall return for the twelve tips, with a gain of 43.2%. The average gain of the best six performers was 64.3%. The gains for the twelve stocks were evenly spread, with **Pennant International** being the only selection to deliver a negative return, down 26.1%. Pennant's underlying commercial performance during the year has been strong, with a lot of new orders booked and good execution on key contracts. Order delays, partly due to the situation with Brexit, accounted for the decline in the company's share price in the second half of the year. However, we think the shares are well placed to bounce back as the disrupted order flow is smoothed out. One of the stocks, **Scisys**, attracted an agreed takeover offer in June and the deal looks set to complete later this year. Five of the New Year selections made gains of over 50%. For anyone with the foresight to sell each of the twelve recommended stocks at its year high, the gain across the portfolio would have been 52.7%.

When selecting the Tips back in January we anticipated that 2019 would be a challenging year for UK equities due to Brexit uncertainty and signs of slowing growth in the global economy. That was a key factor in shaping our approach to picking the recommended stocks. We decided to make our selections from proven, quality companies that were well placed to deliver growth in 2019 even if the economic outlook deteriorated. A proviso was that the stocks must be available at a reasonable price, as we reasoned that growth companies trading on exceptionally high multiples would be vulnerable to selling pressure if a slowdown in global growth made investors more risk averse. As it turned out, premium ratings have been slashed this year for many high-flying tech stocks, including some of our favourites such as **First Derivatives, Keywords Studios,** and **IQE**.

We also sought to avoid deep value situations when choosing the 2019 New Year Tips. These normally are stocks which have been beaten down by adverse trading conditions in the underlying business and/or by management failings. To breathe new life into a stock of this kind, a well-financed recovery plan is required, but the wider economic environment also generally needs to be supportive if the plan is to work. Essentially, we felt that recovery stocks would struggle to make headway in 2019 as the business cycle was beginning to peak and demand was weakening in many sectors. Similarly, we avoided highly speculative stocks. Taking a risk by investing at an early stage in a loss-making company that is developing some exciting technology can sometimes payoff substantially. In fact, some of our best performing stock recommendations in *Techinvest* over the years have fallen into this category, with a recent example being **Blue Prism.** However, the market has been very tough on speculative stocks over the last two years, making it difficult for the underlying companies to accelerate their development through raising equity financing on attractive terms. There has also been a dearth of promising, highly innovative tech companies choosing to list on the London market, making for a lower quality pool of speculative stocks than we have known in the past.

Overall, choosing to focus on quality growth stocks available at a reasonable price was a strategy that worked fairly well for the 2019 New Year Tips. The likes of **Softcat, Eckoh, Kainos,** and **GB Group** were not screaming buys on a value basis when we recommended them back in January. In fact, on conventional metrics, they were quite highly rated, though without the valuations appearing overstretched. However, each of these companies offered the strong track record of operational and financial performance, allied to strong growth prospects, that is particularly attractive to investors at a time when the corporate sector is being buffeted by a number of trading headwinds. Their share prices have risen this year in recognition of another period of quality execution by the respective management teams. Each company has been pursuing a credible business strategy, delivering on key financial targets and making clear and sustainable operational progress which is focused on achieving shareholder value. In short, these are businesses that are properly founded; they have a core of quality in their systems, commercial relationships, and products that could continue to generate excellent returns for investors. As such, we are confident that the strong returns generated by most of the 2019 New Year Tips can be advanced in future years providing that wider economic conditions remain supportive.

NORTH AMERICAN NEW YEAR TIPS REVIEW

North American Tips			
Company	**Price (US$) 31/12/18**	**Price (US$) 26/11/19**	**Gain/Loss %**
Allot Communications	6.08	8.68	42.8
Aviat Networks	13.27	13.94	5.0
Frequency Electronics	10.85	10.35	-4.6
Nokia	5.8	3.45	-40.5
Quantenna	14.35	24.5	70.7
Radware	22.7	23.71	4.4
Average Gain			**13.0**

With an average gain of 13%, our North American New Year Tips put in a solid performance, without matching the increase in the Nasdaq Composite index of 27.9% since the start of the year. The star performer with a 70.7% return was **Quantenna**, the Wi-Fi chipsets manufacturer, after the company was acquired in June by Nasdaq-listed ON Semiconductor at US$24.50. Next best, with a gain of 42.7%, was Israeli-based **Allot Communications**, a provider of network intelligence and security solutions for service providers and enterprises worldwide. Quarterly results have been strong all year, and management has maintained its expectations of full year 2019 revenues between US$106-$110m, representing continued double-digit year-on-year growth.

Wireless transport solutions specialist, **Aviat Networks**, delivered a steady operational performance during the year, winning new business in all markets and territories and continuing to invest in technologies for 5G and mission-critical networks. The company recently reiterated guidance for the first half of fiscal 2020. We feel the stock is well placed to make further gains should demand for 5G take-off next year, as some market commentators are predicting. **Radware's** share price has remained stubbornly unmoved despite recently reporting quarterly earnings of US$0.25 per share, beating the Zacks Consensus Estimate of $0.18 per share by some margin. Over the last four quarters, the company has surpassed consensus earnings per share estimates four times and beaten revenue estimates three times. With Radware currently trading on a prospective P/E of 25.4 for fiscal 2020, we feel the shares remain an attractive investment.

Frequency Electronics made a strong start to the year, with the share price up 14% at one point. However, latest quarterly results were slightly below forecast estimates on revenue and earnings per share, which knocked the share price back by around a dollar. The company has been winning some major orders during the year, and in light of the strong order book and the high quality of the underlying business, we feel the shares remain undervalued and are an excellent play on the buoyant markets for space and terrestrial communications technology.

Nokia was the only significant disappointment among the picks. We tipped the shares as a potential beneficiary of the roll-out of 5G, but were possibly a few months too early as progress in delivering the next generation network in 2019 has been less than was anticipated at the start of the year. Last month, Forbes contributor Bernard Marr predicted that 5G, AI, and the IoT will transform telecoms in 2020. If he is right, Nokia's shares can be expected to bounce back strongly next year and we feel they are worth hanging on to at this point.

TECHINVEST TRADER PORTFOLIO 4

	Performance Data 1 month	12 months	since 1/1/00
Trader Portfolio	**6.09%**	**16.31%**	**757.3%**
FTSE 100	**1.33%**	**5.42%**	**6.8%**
FTSE techMARK Focus	**8.45%**	**28.79%**	**56.1%**

Techinvest Trader Portfolio 1
Starting Capital (1.3.85): £20,000
Termination Value (31.3.93): £462,874
Gain (8 years and 1 month): 2214%

Techinvest Trader Portfolio 2
Starting Capital (1.1.93): £50,000
Termination Value (30.4.96): £276,691
Gain (40 months): 453.3%

Techinvest Trader Portfolio 3
Starting Capital (1.4.96): £50,000
Termination Value (27.3.00): £570,402
Gain (4 years): 1040.8%

The Trader Portfolio had one of its best months this year, advancing by 6.09% compared to an 8.45% increase in the FTSE techMARK Focus Index. Stocks which we felt had been unreasonably marked down over the summer made a strong recovery, with our large holdings in **Keywords Studios**, **Kainos**, and **Ideagen** racking-up double-digit gains in November. The boost to the valuation of the Portfolio was considerable.

Some of our smaller holdings delivered even more impressive gains. Shares in **CentralNic** climbed 45% after the company issued a positive trading update and news of a major acquisition. **Parity's** shares climbed 37% on news of an innovative revenue sharing agreement with healthcare technology specialist, Integumen. **Mercia Asset Management's** share price had been under pressure recently as a large institutional investor became a forced seller. Clearing the stock overhang allowed the shares to bounce back last month. **Softcat** and **XLMedia** were among other holdings that made 20% plus gains in November.

GAN has been one of the strongest performing stocks in the Portfolio in recent months. The share price has been buoyed by news that the US market is rapidly opening up as more States move to regulate gambling. GAN was an early mover in the US and is well placed to benefit from the forecast growth in internet-based gambling in the country. The shares were up by more than 40% at one point during the month, having already tripled in value since early summer. We like the longer-term prospects for GAN, but felt that the steep climb in the share price was becoming unsustainable in the short term, particularly as the company has yet to turn a profit and there remains plenty of work for management to complete before the undoubted potential in the business is fully realised. Accordingly, we felt the time was right to take part profit on our position in the stock by selling 10,000 shares at 161p. That leaves a holding of 15,000 shares for the longer term.

Both of the purchase transactions that we made for the Portfolio last month got off to a good start in November. **Eckoh** issued a strong trading update a few weeks ago, leading to a significant upward re-rating of the shares. The company has impressed us with its success in the US market in particular and we feel that the prospects for the business are very strong. **Cerillion** delivered a record-breaking set of full year results just as we were going to press this month (we will provide a full update on the results in next month's issue) and the share price ticked up in response. The Portfolio's cash balance was boosted in November by the receipt of proceeds for the takeover of two of our holdings, **APC** and **StatPro**. APC was acquired by Specialist Components for 10p per share and the purchaser for StatPro at 230p per share was Confluence Technologies. We will look for opportunities to reinvest the cash in fresh holdings over the coming weeks.

Number of Shares	Company	Ticker	Date Bought	Buying Price	Total Cost £	Present Price p	Value £
1600	First Derivatives*	FDP	20/10/05	90	1867	**2515**	£40,240.00
50000	dotDigital	DOTD	08/08/11	7.7	3974	**91.5**	£45,750.00
23000	Ideagen*	IDEA	17/12/12	18.875	6796	**176**	£40,480.00
16000	D4t4	D4T4	21/11/13	52.375	8615	**191.5**	£30,640.00
22000	Ideagen	IDEA	04/03/14	33.62	7608	**176**	£38,720.00
60000	Open Orphan	ORPH	23/12/14	16	9865	**6.3**	£3,780.00
40000	Open Orphan	ORPH	05/01/15	19.7	8103	**6.3**	£2,520.00
4000	Cohort	CHRT	16/01/15	233	9580	**550**	£22,000.00
4000	Kainos	KNOS	21/09/15	208.4	8570	**607**	£24,280.00
4000	Keywords Studios*	KWS	22/09/15	188	7728	**1403.5**	£56,140.00
40000	Open Orphan	ORPH	25/09/15	22.5	9251	**6.3**	£2,520.00
12000	D4t4	D4T4	28/09/15	74	9128	**191.5**	£22,980.00
30000	Elecosoft	ELCO	26/10/15	27	8328	**77**	£23,100.00
20000	Thruvision	THRU	16/11/15	48	9825	**27.9**	£5,580.00
22000	Thruvision	THRU	11/12/15	41.5	9384	**27.9**	£6,138.00
100000	Filtronic	FTC	21/03/16	5.7	5859	**8.5**	£8,500.00
18000	Eckoh	ECK	05/05/16	49.3	9095	**57.5**	£10,350.00
15000	GAN*	GAN	01/08/16	35	9036	**141**	£21,150.00
7000	Photo-Me International	PHTM	23/12/16	163	11480	**87.65**	£6,135.50
4000	SmartSpace Software	REDS	09/01/17	145	5842	**62.5**	£2,500.00
18000	Eckoh	ECK	22/02/17	38.25	6932	**57.5**	£10,350.00
10000	Pennant International	PEN	10/03/17	87.5	8806	**86.5**	£8,650.00
6000	Gresham Technologies	GHT	14/03/17	157.5	9510	**103.5**	£6,210.00
50000	BATM Advanced Comms	BVC	24/03/17	16.5	8304	**43.1**	£21,550.00
12000	XLMedia	XLM	18/04/17	107.5	12977	**64.75**	£7,770.00
12000	Idox	IDOX	18/04/17	68.75	8304	**35.45**	£4,254.00
17000	CentralNic	CNIC	10/05/17	46	7872	**60.25**	£10,242.50
5000	D4t4	D4T4	19/05/17	158	7952	**191.5**	£9,575.00
3000	Kainos Group	KNOS	30/05/17	230	6947	**607**	£18,210.00
1700	CML Microsystems	CML	31/07/17	458	7837	**313**	£5,321.00
2000	Iomart	IOM	31/07/17	316	6364	**364**	£7,280.00
800	Playtech	PTEC	31/07/17	949	7642	**401.65**	£3,213.20
2000	Proactis	PHD	22/08/17	185.5	3741	**49**	£980.00
20000	CyanConnode	CYAN	03/10/17	29.25	5892	**2.1**	£420.00
2000	Iomart	IOM	08/11/17	355	7148	**364**	£7,280.00
12000	Eckoh	ECK	08/11/17	48.75	5892	**57.5**	£6,900.00
20000	Gfinity	GFIN	02/01/18	22.7	4575	**4.35**	£870.00
4000	Proactis	PHD	02/01/18	171	6887	**49**	£1,960.00
25000	CyanConnode	CYAN	29/01/18	15.2	3832	**2.1**	£525.00
20000	Mercia Asset Management	MERC	23/02/18	36.7	7389	**32.5**	£6,500.00
50000	Parity	PTY	22/03/18	12	6043	**9.25**	£4,625.00
4000	XL Media	XLM	22/03/18	167	6726	**64.75**	£2,590.00
4000	IMImobile	IMO	29/05/18	278	11188	**320.5**	£12,820.00
6000	Tribal Group	TRB	28/06/18	82	4957	**57.5**	£3,450.00
20000	Mercia Asset Management	MERC	10/07/18	33	6646	**32.5**	£6,500.00
8000	Pennant International	PEN	27/07/18	91	7329	**86.5**	£6,920.00
20000	CentralNic	CNIC	03/09/18	50	10063	**60.25**	£12,050.00
20000	SysGroup	SYS	03/09/18	43.5	8756	**36**	£7,200.00
50000	Parity	PTY	03/09/18	13.85	6972	**9.25**	£4,625.00
1000	Clinigen	CLIN	27/09/18	835	8404	**865**	£8,650.00
6000	Scisys	SSY	23/10/18	141.5	8545	**253**	£15,180.00
6000	Photo-Me International	PHTM	29/10/18	106.5	6434	**87.65**	£5,259.00
1500	Softcat	SCT	19/11/18	626	9449	**1135**	£17,025.00
3000	Synectics	SNX	19/11/18	209	6314	**152.5**	£4,575.00
30000	Petards	PEG	31/12/18	26.5	8002	**15.5**	£4,650.00
3000	Cohort	CHRT	26/03/19	370	11168	**550**	£16,500.00
6000	Amino Technologies	AMO	06/06/19	100	6043	**106.5**	£6,390.00
8000	Pennant International	PEN	09/08/19	53	4274	**86.5**	£6,920.00
8000	Cerillion	CER	29/10/19	188	15128	**194**	£15,520.00
16000	Eckoh	ECK	29/10/19	49.5	7972	**57.5**	£9,200.00
All purchases adjusted for subsequent rights/scrip issues							
* Denotes part profits taken						Cash	£135,050
Starting Capital £100,000 (1-1-2000)						**TOTAL**	**£857,263**

The Trader Portfolio is an unaudited paper fund which is run to illustrate the dynamics of managing an active technology sector portfolio. No new share goes into the portfolio until after it has been rated as a New Buy in an issue of *Techinvest*. After that, the fund can act just like any subscriber, using its judgement to buy, hold or sell in accordance with subsequent price movements and news flow within the sector. All transactions take full account of prevailing bid-offer spreads. Commission is now charged at a flat rate of £12.50 on deals of any size, to reflect current online dealing rates. No credit is taken for dividends paid by companies nor for interest on cash balances. Current holdings are valued using mid-market prices.

The next issue of *Techinvest* will be published on Saturday 4th January 2020.
Our best wishes for a Merry Christmas and a Prosperous New Year to all subscribers.

All enquiries to Techinvest, The McHattie Group, St Brandon's House, 29 Great George Street, Bristol, BS1 5QT, UK. Telephone 0117 407 0225; email techinvest@mchattie.co.uk.