THE 2020 EXECUTION MANAGEMENT SYSTEMS SURVEY

With the basics covered, it's all about
innovation in the EMS space

While providers gained the highest overall average marks in history in The TRADE's 2020 Execution Management Systems Survey, declines in product development scores suggest the buy-side want more from their vendors when it comes to innovation.

The 2019 edition of The TRADE's Execution Management Systems (EMS) survey highlighted the definite shift in industry focus, away from concerns over compliance and towards

improving the quality of execution. For the most part, scores have continued to rise, however there are certainly areas of service where vendors can do better and are in danger of falling behind.

Overall, scores were broadly up from 2019, with all categories under scrutiny scoring above the default 'Good' score of 5.00. There were only two categories in which the 2020 average fell below its 2019 level: FIX capabilities (down 0.06) and product development (down 0.03). For all other categories however, average scores were up from 2019, albeit marginal. One exception is in the ease-of-use category, which increased by 0.18 from last year, indicating an increase in the usability of EMS providers across the board this year.

> ## "Providers that are able to offer innovation will likely find themselves with a competitive advantage."

execution quality. The results from this year's survey compounds the sense that both EMS vendors and users are now mostly focused on

Figure 1 shows scores recorded over the past two years, across 13 functional EMS categories under review by buy-side respondents.

As in 2019, two categories recorded an average score of more than 6.00 (Very Good), representing particularly high performance. The

Figure 1: Overall scores

EMS 2020
EMS 2019

Aspect of service	Weighted Average Score

Aspect of service	EMS 2020	EMS 2019
Reliability and Availability	6.27	6.18
Latency	5.97	5.93
Client Service Personnel	5.88	5.84
Ease-of-Use	5.86	5.69
Handling of New Versions/Releases	5.63	5.60
Breadth of Broker Algorithms	5.96	5.96
Timeliness of Updates for Broker Changes	5.77	5.73
FIX Capabilities	6.06	6.12
Breadth of Asset Class Coverage	5.66	5.62
Breadth of Direct Connections to Venues	5.89	5.85
Product Development	5.36	5.39
Ease of Integration to Internal Systems	5.69	5.67
Overall Cost of Operation	5.69	5.61

Table 1: Top scoring categories		
	2019	**2020**
Reliability and availability	6.18	6.27
FIX capabilities	6.12	6.06
Latency	5.93	5.97
Breadth of broker algorithms	5.96	5.96
Breadth of direct connections to venues	5.85	5.89

overall survey average score rose in this year's edition to 5.82, up 0.04 from last year's survey average of 5.78. This year's survey average marks the highest overall average in the survey's history, dating back to 2013. While it would be disingenuous to write up the 2020 results as some kind of spectacular gamechanger, they do underline the sense that improvements are being made gradually, rather than suddenly in the EMS space.

The results from this year's survey show that traders are recognising the work done by vendors to get the 'basics' right, hence the high scores for 'reliability and availability' and 'latency'. The high scores associated with both the breadth of broker algorithms and breadth of direct connections to venues categories show the success that EMS providers are having at ensuring their products can integrate with the wider trading landscape. At the same time, product development counts as the lowest scoring category, indicating that vendors seem to be having more trouble innovating new solutions than improving their existing product.

The area of product development has consistently ranked as the lowest scoring category since

"The consolidation of EMS providers among the buy-side is one trend that shows little sign of abating."

2015, and 2020 is no exception. Despite having made year-on-year improvements from 2017 – 2019, in this year's edition the score for product development fell marginally by 0.03 to a score of 5.36. While above the 'Good' threshold of 5.0, this is still significantly below the survey average of 5.82. The buy-side expects more from their EMS providers when it comes to product development and those providers that are able to offer innovation, will likely find themselves with a competitive advantage.

The highest scoring categories in this year's survey, as in 2019, were reliability and availability and FIX capabilities, recording a score of 6.27 and 6.06 respectively. Other high scoring categories in this year's survey include latency (5.97), breadth of broker algorithms (5.96) and breadth of direct connections to venues (5.89).

Table 1 highlights the top five scoring categories for 2020, along

with their 2019 results for comparison. A rating of 5.00 to 5.99 is considered 'Good', meaning service areas consistently meet expectations. A rating of 6.00 to 6.99 is considered 'Very Good', indicating vendors are exceeding expectations.

Respondents were asked to select their four most important features of EMS functionality and the results are shown in figure 2. In terms of what the buy-side look for most in EMS, ease-of-use (68.1%) and post-implementation client service (45.5%) rank as the most important among respondents in this year's survey. Whereas connectivity with internal systems (41.2%) and number of connections to different brokers (37.6%) rank third and fourth. In this respect, preferences among survey respondents has remained particularly consistent over the past 12 months.

One area that recorded a significant yearly increase in importance among survey respondents was low

Figure 2: Most important features

*Each respondent named up to four important features

EMS 2020
EMS 2019

Feature	% of Respondents (*)
No. of Connections to Different Brokers	37.6 (2020) / 41.7 (2019)
No. of Asset Classes Covered	18.6 (2020) / 19.7 (2019)
No. of Direct Connections to Venues	17.4 (2020) / 21.4 (2019)
No. of Types of Algorithms Available	27.5 (2020) / 26.2 (2019)
Timeliness of Implementing Updates	27.5 (2020) / 30.4 (2019)
Connectivity with Internal Systems	41.2 (2020) / 46.5 (2019)
FIX Capabilities	13.9 (2020) / 14.9 (2019)
Low Latency	28.7 (2020) / 22.0 (2019)
Global Client Coverage	22.0 (2020) / 26.5 (2019)
Post-implementation Client Service	45.5 (2020) / 42.8 (2019)
Ease-of-Use	68.1 (2020) / 70.1 (2019)
Integration with OMS	29.9 (2020) / 30.1 (2019)

latency, rising by 6.7% from 2019 to 2020. Although it experienced a small decline of 2% from 2019, the ease-of-use category continues to preside over all other categories as the most important feature, as it has over the past three years. The rise in importance attributed to low latency and the continued dominance of ease-of-use as an important feature of EMS, underline the critical importance of efficient usability to a successful EMS offering.

The consolidation of EMS providers among the buy-side is one trend that shows little sign of abating, as shown in figure 3. Over 67% of buy-side respondents reported to using a single EMS provider in this year's survey. This is beginning to build up to a pattern where a growing proportion of buy-side respondents use a single EMS provider. In 2017 this was proportion was just 34% and it has since grown year-on-year to reach 67.3% in 2020, almost double the 2017 figure. Admittedly part of this dramatic increase from 2017 can

"One industry insider described EMS as a 'cockpit' for traders during the COVID-19 crisis, providing technology to access analytics and liquidity."

be explained by the introduction of MiFID II in January 2018, prompting asset managers to try out a variety of options before settling with a single EMS provider. This tendency to use fewer EMS providers is also partly explained by the increasingly broad offering of vendors who have expanded their asset class coverage to non-equity classes such as foreign exchange (FX) and fixed income securities.

The rise in the proportion of respondents opting for a single EMS provider was offset by declines in the proportion of respondents using more than one EMS provider. Most significantly there was a 2.5% decline in the proportion using two providers, and much smaller declines in the proportion of

respondents using three or more providers. Again, this underlines the growing range of capabilities offered by EMS vendors to the extent that a growing proportion of the buy-side are comfortable using just one provider to fulfil all of their EMS demands.

Figure 4 shows the average number of EMS providers for participants, broken down by the client firm's assets under management (AuM) bracket. The results remain on a par with last year, with slight decreases observed in the average number of providers across all AuM categories, with the exception of respondents in the $1 billion – $10 billion bracket. In this category the average number of providers was 1.45, up by 0.04 from

Figure 3: Numbers of providers used (% of respondents)

Number of providers
1   2   3   4   5
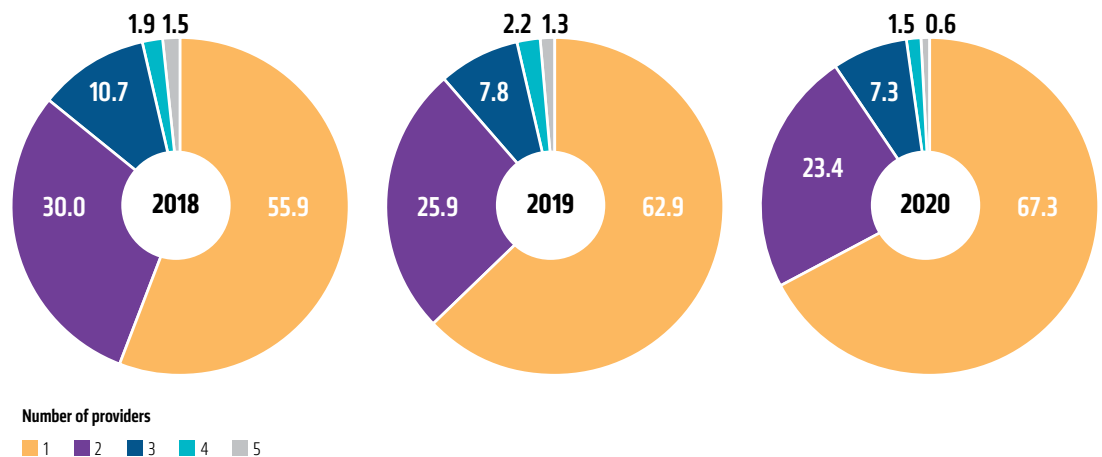
the 2019 result. In all other AuM categories, the average number of providers was down, with the largest decreases occurring in the larger AuM range of more than $10 billion. It would seem that even the larger buy-side firms with often more complex strategies and more resources behind them, are also becoming more comfortable with a smaller number of EMS providers. This presents certain opportunities for vendors who are able to meet the demands of larger buy-side firms.

When it comes to evaluating EMS providers, ten firms received sufficient responses from buy-side users to garner a profile in this year's survey results. As with previous years, Charles River recorded the lowest score of all profiled providers with 5.05 – down from 5.08 in 2019 – while also recording the lowest scores in nine of the 13 areas under evaluation. Meanwhile Virtu Triton received the highest average score with 6.20. Interestingly, both companies have been recently involved in M&A activity, demonstrating the appetite for consolidation in the historically fragmented trading industry. Charles River was bought by State Street in October 2018 and Virtu bought rival agency brokerage ITG in March 2019. Yet disparity between their performances would indicate that Virtu

Methodology

Survey respondents were asked to provide a rating for each Execution Management System (EMS) provider on a numerical scale from 1.0 (Very Weak) to 7.0 (Excellent), covering 13 functional criteria. In general, 5.0 (Good) represents the 'default' score of respondents. In total, over 350 individuals responded; 495 evaluations were submitted; and more than 20 providers were evaluated. The evaluations were used to compile the overall market review information as well as ten provider profiles covering the major EMS providers based on responses received. Each evaluation was weighted according to three characteristics of the respondent; the value of assets under management; the scale of business being conducted electronically; and the number of different providers being used. In this way the evaluations of the largest and broadest EMS users were weighted at up to twice the weight of the smallest and least experienced respondent. In arriving at any overall calculations, the scores received in respect of each of the 13 functional categories were further weighted according to the importance attached to them by survey respondents. The aim is to ensure that in assessing service provision the greatest impact results from the scores received from the most sophisticated users in the areas they regard as the most important. Finally, it should be noted that responses provided by affiliated entities have been discarded and that other responses, where respondents were unable to be properly verified, were also excluded. We hope that readers find this approach both informative and useful as they assess different capabilities in the future. As with this year's Algorithmic Trading survey, analysis for the EMS survey was carried out by Aite Group.

has certainly been more successful at leveraging their recent expansion.
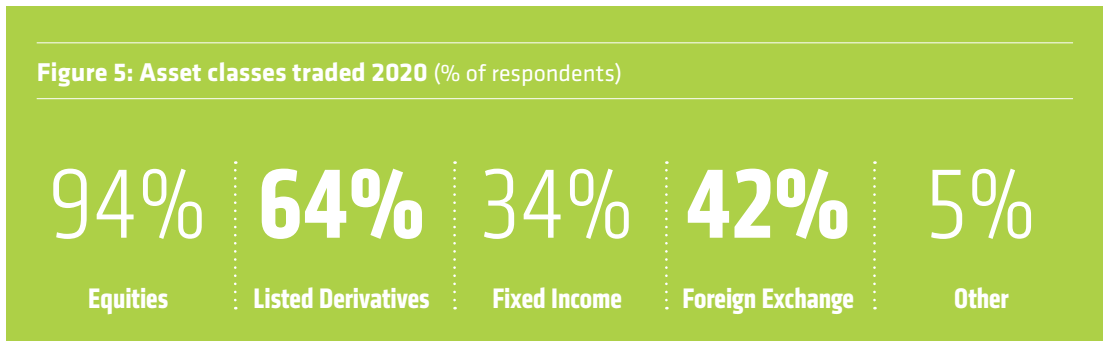
In response to whether or not

firms had plans to implement additional EMS providers to their existing set-

Figure 4: Average number of providers by AuM, 2020

1.33	**1.33**	1.45	**1.41**	1.64
< $0.5 Bn	$0.5 to $1.0 Bn	$1.0 to $10 Bn	$10 to $50 Bn	> $50 Bn

Figure 5: Asset classes traded 2020 (% of respondents)

94%	**64%**	34%	**42%**	5%
Equities	Listed Derivatives	Fixed Income	Foreign Exchange	Other

up, 57% of respondents answered that they had no plans to do so, while just 10 respondents were able to name which provider they hoped to onboard in future. Similarly, 66% of respondents said that they had no plans to change which EMS provider they were currently using.

In terms of the asset classes traded through these systems (see figure 5) equities continue to dominate the landscape with just under 95% of survey respondents trading this class of instruments. Interestingly there were also noticeable

increases in the proportion of other asset classes: listed derivatives rose to almost two thirds of respondents (64%), fixed income rose to a third of respondents (33.5%) and foreign exchange increased from 12.4% in 2019 to 42.4% of respondents in this year's survey. This all goes hand-in-hand with research from Aite Group that has explored in detail the trend toward electronic and automated trading in non-equity asset classes.

Figure 6 shows that the geographic spread of respondents to this year's survey was broadly in

line with 2019, with three quarters of respondents being based in North America and Asia Pacific. A slight increase in the proportion of European respondents was observed as well as a small decline in the proportion of UK-based respondents.

Overall, this year's survey broadly depicts a positive outlook as the industry sharpens its focus on execution quality, leaving behind some of the emphasis on compliance brought about by the introduction of MiFID II. While many of the areas under evaluation have performed highly, the COVID-19 pandemic has been a powerful reminder that disruption and extreme uncertainty can never be ruled out. All asset classes have experienced movements in trading as a result of the economic turbulence this year, and the ability to reallocate funds between asset classes with ease is an important quality to mitigate risk and take strategic decisions. One industry insider described EMS as a 'cockpit' for traders during the COVID-19 crisis, providing technology to access analytics and liquidity. It is therefore important that EMS providers stay aware of the changing trading landscape and the obvious need for their solutions to be both innovative and adaptable.

Figure 6: Regional distribution 2020

Asia Pacific 27%
Europe 13%
North America 47%
Rest of the World 3%
United Kingdom 10%

2020
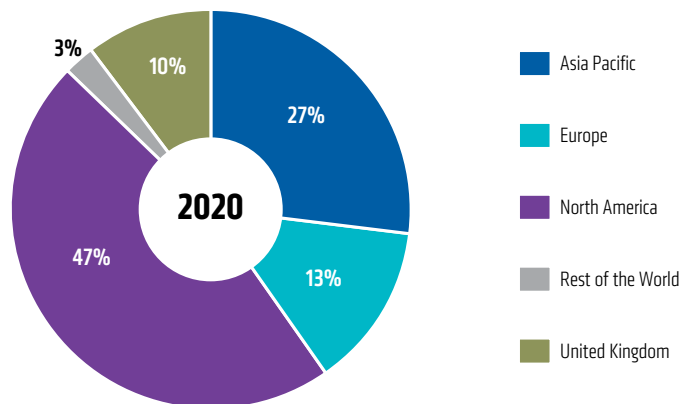
Bloomberg

With the announcement still fresh from last year that Bloomberg plans to withdraw its sell-side execution and order management solutions (SSEOMS) and pull out of the equities OMS market, there has been more attention on the data giant's EMS solution. In terms of its performance in this year's EMS survey the vendor is heading in the right direction, even if scores this year fall below the survey average.

Bloomberg EMSX increased its overall average in this year's survey to 5.37, up from 5.29 in last year's edition. While this is certainly an improvement, the score falls below the 2020 survey average of 5.82. As in 2019, Bloomberg recorded its highest score in this year's survey in the reliability and availability category (6.08), which was the only aspect of service analysed in which EMSX recorded a score higher than 6.00, a yardstick to recognise where a vendor has performed particularly well by exceeding certain expectations.

Bloomberg's most improved year-on-year score was in the ease of use category (up 0.28) and year-on-year increases were recorded in ten functional categories, painting a positive picture for the firm overall. The firm recorded its worst year-on-year score in the handling of new versions/releases and FIX capabilities category, which both declined by 0.07. However, it should not take too much effort to turn this around for future surveys.

Meanwhile, Bloomberg ranked below the category average across all aspects of service analysed and received scores of below 5.00 (Good) in two categories, indicating adequate but nonetheless below average performance: client service personnel (4.88) a worrying -1.00 below the category average and product development (4.56), -0.8 below the category average. While the results of this year's survey reveal many positive developments, there are still a number of areas in which Bloomberg will need to focus hard on to improve its EMSX offering.

BLOOMBERG RATINGS FOR EMS PERFORMANCE

Reliability and availability	Latency	Client service personnel	Ease-of-use	Handling of new versions/releases	Breadth of broker algorithms	Timeliness of updates for broker changes	FIX capabilities
6.08	5.74	4.88	5.29	5.17	5.68	5.34	5.68

Breadth of asset class coverage	Breadth of direct connections to venues	Product development	Ease of integration to internal systems	Overall cost of operation	Average score
5.53	5.45	4.56	5.04	5.34	5.37

KEY STATS

6.08
Highest score
(reliability and availability)

4.56
Lowest score
(product development)

+0.28
Most improved
(ease of use)

-0.07
Least improved
(handling of new versions/releases & FIX capabilities)

Charles River

With the 2018 purchase of Charles River by State Street for $2.6 billion now almost two years ago, the bank has had significant time to integrate the vendor's solutions into its offering. The COVID-19 pandemic and the shift to remote working has however forced extensions to a number of planned go-live dates and Charles River has a considerable amount of on-site work that still needs to be done. While many of the scores are not where the vendor would want, the eventual completion of projects delayed by the pandemic may begin to push Charles River's scores higher in future.

The vendor recorded an average score of 5.05 (-0.03 from 2019) and 0.77 points below the 2020 average of 5.82. Disappointingly for Charles River, it scored below the category average in 12 of the 13 service areas analysed by the survey and ranked below the default 5.00 (Good) in seven functional categories, including the handling of new versions/releases (4.58) and product development (4.48).

As in 2019, Charles River received a relatively low number of responses to this year's survey, representing just 3.23% of the total number of ratings submitted.

The majority of respondents to Charles River were from larger clients, with over 80% managing above US$10 billion. Large-cap buy-side firms with the most demands are often seen as the most critical. The vendor registered year-on-year decreases in seven categories. Most notably, this year's score for latency fell by 0.87 from its 2019 result. Clients, however, will not have to wait long to experience improvements in latency handling, as Charles River is set to go live with a platform refresh in the coming months.

It was not all bad news for Charles River. The vendor's highest score was in the FIX capabilities category (5.79) and it also scored well in breadth of asset class coverage, which at 5.69 stands +0.03 above the category average. The vendor recorded year-on-year score increases in six of the 13 functional categories under review, with the most significant increases occurring in breadth of direct connections to venues (+0.61) and breadth of asset class coverage (+0.60). In terms of additional capabilities wanted by respondents, "better cross-asset capabilities" is referenced by more than one large client.

CHARLES RIVER RATINGS FOR EMS PERFORMANCE

Reliability and availability	Latency	Client service personnel	Ease-of-use	Handling of new versions/releases	Breadth of broker algorithms	Timeliness of updates for broker changes	FIX capabilities
5.73	4.75	4.75	5.03	4.58	4.66	4.91	5.79

Breadth of asset class coverage	Breadth of direct connections to venues	Product development	Ease of integration to internal systems	Overall cost of operation	Average score
5.69	5.64	4.48	5.06	4.62	5.05

KEY STATS

5.79
Highest score
(FIX capabilities)

4.48
Lowest score
(product development)

+0.61
Most improved
(breadth of direct connections to venues)

-0.87
Least improved
(latency)

FlexTrade

FlexTrade has been busy over the past 12 months, adding targeted invitations to liquidity sources such as Liquidnet to its multi-asset trading blotter for equities. This has required good partnerships with liquidity providers and follows on from its work with Amazon Web Services in early 2019 to bring about one of the industry's first cloud-based EMS. Much of this hard work has paid off in this year's survey with the vendor receiving increased scores in 12 of the 13 aspects of service under review.

After some disappointing scores last year, FlexTrade recovered much of its standing in this year's survey. Its average score of 5.91 was up 0.41 from last year's 5.50, the vendor boasts 'Very Good' scores in six categories and registered a definite improvement in its results compared to last year. Year-on-year increases were observed in all categories with the single exception of timeliness of updates for broker changes, which recorded a marginal decrease of 0.04. The largest year-on-year increase was seen in the ease-of-use

category, which shot up by 1.01 to 6.09 in 2020. This represented the largest year-on-year category increase recorded across any of the providers profiled in this year's survey.

FlexTrade recorded its highest score in the breadth of broker algorithms category (6.44) and also scored highly in the breath of direct connections to venues (6.23) and reliability and availability categories (6.17).

FlexTrade's lowest score was registered in overall cost of operation (5.49), suggesting that the provider still has work to do on making its costs more competitive. Its worst year-on-year score was in the timeliness of updates for broker changes category, which declined by 0.04. It shouldn't take too much effort for FlexTrade to record future increases in this category. In terms of additional capabilities wanted, one head of trading at a large European based asset management firm calls for "direct streaming in fixed income".

FLEXTRADE RATINGS FOR EMS PERFORMANCE

Reliability and availability	Latency	Client service personnel	Ease-of-use	Handling of new versions/releases	Breadth of broker algorithms	Timeliness of updates for broker changes	FIX capabilities
6.17	6.09	5.88	6.09	5.62	6.44	5.80	6.02

Breadth of asset class coverage	Breadth of direct connections to venues	Product development	Ease of integration to internal systems	Overall cost of operation	Average score
5.68	6.23	5.67	5.69	5.49	5.91

KEY STATS

6.44
Highest score
(breadth of broker algorithms)

5.49
Lowest score
(overall cost of operation)

+1.01
Most improved
(ease-of-use)

-0.04
Least improved
(timeliness of updates for broker changes)

Instinet

In December 2019, Instinet announced the launch of Newport FX, an agency-model electronic trading platform for spot FX. This allows clients of Newport to synchronise FX executions with their equity orders for a more holistic solution. As Instinet marks its 50th year of business, its efforts to improve transparency and efficiency for clients have been rewarded by a rise in scores in areas of service such as ease of integration to internal systems (+0.29), FIX capabilities (+0.21) and latency (+0.14).

Instinet Newport once again outperformed the survey average of 5.82, with an average score of 6.07 in this year's EMS survey results. While this represents a small decrease of 0.08 from its average in 2019, the vendor still sits comfortably in the 'Very Good' range (6.00-6.99).

Instinet saw its greatest year-on-year increase in the ease of integration to internal systems category (6.35), which rose by 0.29 from last year. The vendor received a score of above 6.00 (Very Good) in nine of the 13 functional categories under review, scoring particularly well in the FIX capabilities (6.53), ease of integration to internal systems (6.35) latency (6.35) and reliability and availability (6.33) categories.

While Instinet had a good year by most metrics, the decrease in eight categories shows that the vendor struggled to match its performance from last year. The most significant fall was recorded in product development, which declined by 0.5 to a score of 5.35 in this year's survey. The vendor also recorded a low score of 5.22 in the breadth of asset class coverage category (5.22) which falls 0.44 below the category average of 5.66. It will therefore come as no surprise that client wish lists include greater "multi asset capabilities", more "app-based systems", and "more effective data capture and customisation to manage execution workflow". To regain its momentum, Instinet will need to think about how it can boost product innovation and widen asset class coverage for its Newport solution.

INSTINET RATINGS FOR EMS PERFORMANCE

Reliability and availability	Latency	Client service personnel	Ease-of-use	Handling of new versions/releases	Breadth of broker algorithms	Timeliness of updates for broker changes	FIX capabilities
6.33	6.35	6.31	5.94	5.97	6.28	6.08	6.53

Breadth of asset class coverage	Breadth of direct connections to venues	Product development	Ease of integration to internal systems	Overall cost of operation	Average score
5.22	6.15	5.35	6.35	6.07	6.07

KEY STATS

6.53
Highest score
(fix capabilities)

5.22
Lowest score
(breadth of asset class coverage)

+0.29
Most improved
(ease of integration to internal systems)

-0.50
Least improved
(product development)

Neovest

Neovest found its way into this year's EMS survey and came off well alongside the other providers to be profiled in this year's edition. The Neovest solution is completely hosted by data centres in New York, London and Hong Kong and its cloud-based solutions allows clients to focus on their business rather than managing the technology. The vendor has identified FX expansion, venue analysis and multi-broker pairs trading functionality as part of its future expansion. Neovest has been a subsidiary of JP Morgan since 2005.

Neovest performed very well in this year's survey, outperforming the category average in all 13 service areas under review. Having not been profiled in last year's edition, Neovest received a healthy 40 responses (8% of this year's respondents) in this year's survey, reaching the required threshold to warrant a profile. Its average of score of 6.08 sits comfortably within the 'Very Good' range (6.00-6.99) and ranks significantly above the survey average of 5.82.

The firm received a score above 6.00 in nine of the 13 functional categories used to assess EMS providers in this year's survey, indicating that in these categories Neovest exceeded most reasonable expectations. In particular, its score of 6.59 in the client service personnel category placed it top of all profiled providers in this category. The vendor also boasts particularly high scores in the reliability and availability (6.40), latency (6.24) and ease-of-use (6.20) categories.

The spread in category scores (1.11) is relatively wide and at 5.48 and 5.59 product development and ease of integration to internal systems may be considered outliers, however these categories still sit comfortably within the mid-Good range (5.00-5.99). Overall, with an average score equating to 87%, the vendor has demonstrated some very strong results for EMS performance in the 2020 survey data.

NEOVEST RATINGS FOR EMS PERFORMANCE

Reliability and availability	Latency	Client service personnel	Ease-of-use	Handling of new versions/releases	Breadth of broker algorithms	Timeliness of updates for broker changes	FIX capabilities
6.40	6.24	6.59	6.20	6.16	6.06	6.08	6.17

Breadth of asset class coverage	Breadth of direct connections to venues	Product development	Ease of integration to internal systems	Overall cost of operation	Average score
5.94	5.96	5.48	5.59	6.10	6.08

KEY STATS

6.59
Highest score
(client service personnel)

5.48
Lowest score
(product development)

Most improved
(not applicable)

Least improved
(not applicable)

Portware

Having been acquired by FactSet five years ago, Portware has surfaced in and out of the EMS survey in recent years. FactSet has spent much of this time championing the integration between EMS and OMS through its open architecture systems, although the appetite for such a combined offering seems to fluctuate among buy-side users depending on their trading strategies and operational resources.

After an outstanding performance last year, Portware Enterprise was unable to manage a repeat performance in this year's edition of the EMS survey. Most strikingly, Portware recorded year-on-year decreases in all thirteen categories under review. However, there was variation in the magnitude of these declines across the categories. While the most dramatic decreases were observed in the breadth of asset class coverage (down by 0.89) and FIX capabilities (down by 0.79), the most marginal decrease was in the breadth of broker algorithms category, down by only 0.09 from 2019.

Portware's overall average of 5.83 ranks 0.1 above the survey average of 5.82 and places the firm comfortably in the upper 'Good' range (5.00-5.99). Portware outperformed the category average in six functional areas under review and received its highest score in the reliability and availability category (6.69) where it surpassed the scores of all of the other nine providers to be profiled. The vendor also scored above 6.00 in three other categories, namely client service personnel (6.03), breadth of direct connections to venues (6.09) and breadth of broker algorithms (6.36). By the survey's methodology, scores which fall in the 'Very Good' range of 6.00-6.99 represent performance that exceeds normal expectations.

Portware's average score of 5.83 represents a solid 83%, however the challenge for the vendor now is to see if it can get back to the very high standard set by its extraordinary results in 2019, by reversing some of the declines seen in this year's survey.

PORTWARE RATINGS FOR EMS PERFORMANCE

Reliability and availability	Latency	Client service personnel	Ease-of-use	Handling of new versions/releases	Breadth of broker algorithms	Timeliness of updates for broker changes	FIX capabilities
6.69	5.78	6.03	5.46	5.36	6.36	5.63	5.95

Breadth of asset class coverage	Breadth of direct connections to venues	Product development	Ease of integration to internal systems	Overall cost of operation	Average score
5.42	6.09	5.67	5.73	5.63	5.83

KEY STATS

6.69	5.36	-0.09	-0.89
Highest score (reliability and availability)	**Lowest score** (handling of new versions/releases)	**Most improved** (breadth of broker algorithms)	**Least improved** (breadth of asset class coverage)

SS&C Eze

SS&C Technologies acquired Eze Software in October 2018 for $1.45 billion. Over the past year, SS&C has made multiple improvements to trade automation on Eze using artificial intelligence and machine learning technology. The platform is looking to expand its multi-asset class capabilities by developing enhanced features across a range of asset classes.

Unlike 2019, SS&C Eze EMS (RealTick) received sufficient responses in this year's survey to garner a profile. Response numbers however were still relatively low, equalling less than 3% of the total number of responses received for the 2020 edition of the survey. Disappointingly for Eze, its overall average of 5.50 falls 0.32 points below the survey average of 5.82. The vendor underachieves the category average in 10 of the 13 functional areas under review, the most noteworthy being timeliness of updates for broker changes (-0.95), the handling of new versions/releases (-0.82) and client service personnel (-0.51).

Around 70% of responses to SS&C Eze were submitted by respondents based in the US, with the majority of firms categorised in the mid-cap and small-cap AuM brackets of under US$10 billion. The spread in category scores at 1.18 is relatively wide. Eze recorded a score less than 5.00 (the default benchmark for 'Good') in two of the 13 categories used for EMS assessment: handling of new versions/releases (4.81) and timeliness of updates for broker change (4.82). These categories however would appear to be outliers for SS&C Eze, as all remaining service areas score comfortably within the 'Good' range (5.00-5.99).

The vendor's highest score was recorded in the breadth of asset class coverage category (5.99), where it ranked 0.33 above the category average of 5.66 and scored second highest of all providers to be profiled. Ease of integration to internal systems (5.84) outperformed the category average by 0.15 points and Eze's score for product development equals the category average of 5.36. By focusing on the areas where the vendor scored lowest and making its EMS solution more adaptable to handling new versions and broker updates, SS&C Eze should expect to see higher scores from the buy-side in the future.

SS&C EZE RATINGS FOR EMS PERFORMANCE

Reliability and availability	Latency	Client service personnel	Ease-of-use	Handling of new versions/releases	Breadth of broker algorithms	Timeliness of updates for broker changes	FIX capabilities
5.80	5.69	5.37	5.40	4.81	5.63	4.82	5.72

Breadth of asset class coverage	Breadth of direct connections to venues	Product development	Ease of integration to internal systems	Overall cost of operation	Average score
5.99	5.75	5.36	5.84	5.38	5.50

KEY STATS

5.99
Highest score
(breadth of asset class coverage)

4.81
Lowest score
(handling of new versions/releases)

Most improved
(not applicable)

Least improved
(not applicable)

TORA

Having first established its cloud-based solutions 13 years ago, TORA has kept up with market developments in recent years by developing AI tools and including compliance requirements in light of regulations such as MiFID II. Its high score in this year's survey is testament to the vendor's efforts to keep up with changes in the EMS space rather than just rest on its laurels.

TORA produced a strong showing in this year's survey, with its average of 6.11 almost matching its 2019 average of 6.12 and comfortably above the survey average of 5.82. Impressively, TORA outperformed the category average across all 13 functional categories analysed by the survey.

The vendor's highest rating was in the reliability and availability category (6.50) and also performed particularly well in client service personnel (6.41). TORA recorded a score above 6.00 (Very Good) in eight categories overall, and received impressive scores in: latency (6.39), handling of new versions/releases cate-

gories (6.18) and product development (5.89).

TORA received a solid number of responses to this year's survey, representing over 14% of the total number of responses submitted for 2020. Over 72% of respondents to TORA are based in APAC, the vast majority (89%) from the small-cap range, managing assets of under US$10 billion.

The score range across all categories of 0.76 hides no obvious outliers. Comparing TORA's results in 2020 with 2019, the vendor recorded year-on-year increases in six categories and year-on-year decreases in seven categories. These decreases were most apparent in the FIX capabilities (down 0.22), ease of integration to internal systems (down 0.21) and breadth of direct connections to venues categories (down 0.2). In terms of comments made by respondents, one US-based hedge fund praises TORA's pairs trading capabilities, whilst one head of trading calls for "easier end of day report generation".

TORA RATINGS FOR EMS PERFORMANCE

Reliability and availability	Latency	Client service personnel	Ease-of-use	Handling of new versions/releases	Breadth of broker algorithms	Timeliness of updates for broker changes	FIX capabilities
6.50	6.39	6.41	6.11	6.18	6.27	6.22	6.17

Breadth of asset class coverage	Breadth of direct connections to venues	Product development	Ease of integration to internal systems	Overall cost of operation	Average score
5.75	5.93	5.89	5.89	5.74	6.11

KEY STATS

6.50
Highest score
(reliability and availability)

5.74
Lowest score
(overall cost of operation)

+0.23
Most improved
(handling of new versions/ releases)

-0.22
Least improved
(FIX capabilities)

TradingScreen

TradingScreen (TS) has been one of the principal proponents of the integrated order and execution management system and its partnership with data specialist IHS Markit is intended to reduce costs and provide scalability.

In 2020, TradingScreen TradeSmart outperformed the category average in nine of the 13 functional service areas under review. The most noteworthy increases were breadth of asset class coverage (+0.42), ease of integration to internal systems (+0.20) and product development (+0.14). The vendor's average score of 5.87 was above the survey average of 5.82, and just 0.01 below its 2019 average score of 5.88. In terms of regional breakdown, over 58% of responses to TradingScreen were submitted by respondents based in the UK and Europe, with the remainder based in North America (19%) and APAC (22%).

The firm recorded scores above the mid to upper 'Good' range (5.00-5.99) across all categories and achieved scores of over 6.00 (Very Good) in four sep-

arate categories, including reliability and availability (6.24), client service personnel (6.12), FIX capabilities (6.03) and breadth of asset class coverage (6.08). Furthermore, TradingScreen managed to increase its year-on-year score in six categories with the most prominent increase occurring in the breadth of asset class coverage category (up by 0.17), making TradingScreen the highest scoring vendor of all profiled firms in this category.

Meanwhile, the firm did record year-on-year decreases in seven categories even if many of these decreases were relatively marginal. The largest decrease of 0.19 that occurred in the breadth of direct connections to venues category was almost offset by the year-on-year change in the breadth of asset class coverage category, which increased by 0.17. In terms of additional capabilities desired by respondents, one head of trading at a US-based hedge fund calls for "more ability to calculate underlying risk".

TS RATINGS FOR EMS PERFORMANCE

Reliability and availability	Latency	Client service personnel	Ease-of-use	Handling of new versions/releases	Breadth of broker algorithms	Timeliness of updates for broker changes	FIX capabilities
6.24	5.77	6.12	5.90	5.42	5.98	5.73	6.03

Breadth of asset class coverage	Breadth of direct connections to venues	Product development	Ease of integration to internal systems	Overall cost of operation	Average score
6.08	5.98	5.50	5.90	5.70	5.87

KEY STATS

6.24
Highest score
(reliability and availability)

5.42
Lowest score
(handling of new versions/releases)

+0.17
Most improved
(breadth of asset class coverage)

-0.19
Least improved
(breadth of direct connections to venues)

Virtu (Formerly ITG)

Having acquired ITG for $1 billion in March 2019, Virtu has been busy integrating the agency brokerage with its own business operations. The vendor has been working on improving its offering over the past 12 months by developing a FX API, rolling out the ability to trade fixed income, and then moving clients to a new and completely hosted version of Triton called Triton Valor. Virtu's EMS product, Triton has been one of the top performers in historic EMS surveys carried out by The TRADE and this year is no different, showing that the vendor seeks to use the survey to identify and then act on areas for improvement.

Virtu Triton EMS is one of the top performers in this year's survey. Out of a total of 13 categories under review, the vendor outperformed the category average in all and received scores above 6.00 (Very Good) in 11 of the service areas analysed by the survey. Lower scores were recorded for breadth of asset class coverage (5.71) and product development (5.84), however these still sit comfortably in the upper Good range (5.00-5.99).

Virtu recorded particularly high scores compared with the category average in ease-of-use (6.35), timeliness of updates for broker change (6.23) and overall cost of operation (6.19). However recorded year-on-year decreases in nine categories, lowering its average by 0.8 from 6.28 in 2019 to 6.20. Of these breadth of broker algorithms (-0.28), client service personnel (-0.24) and breadth of direct connections to venues (-0.18) were recorded as the most significant. These areas would be a good place to start for Virtu to regain some lost ground.

In three categories where Virtu improved on its 2019 scores, the increases were relatively marginal, with the exception of handling of new versions/releases (+0.1), indicating that there is still progress to be made when it comes to substantial performance improvements. Even with these impressive category scores, there remain enhancements on some client wish lists, including a call for more cross-asset capabilities.

VIRTU RATINGS FOR EMS PERFORMANCE

Reliability and availability	Latency	Client service personnel	Ease-of-use	Handling of new versions/releases	Breadth of broker algorithms	Timeliness of updates for broker changes	FIX capabilities
6.52	6.29	6.46	6.35	6.05	6.22	6.23	6.34

Breadth of asset class coverage	Breadth of direct connections to venues	Product development	Ease of integration to internal systems	Overall cost of operation	Average score
5.71	6.09	5.84	6.26	6.19	6.20

KEY STATS

6.52
Highest score
(reliability and availability)

5.71
Lowest score
(breadth of asset class coverage)

+0.10
Most improved
(handling of new versions/releases)

-0.28
Least improved
(breadth of broker algorithms)