
The Drone Industry Barometer 2022

DRONE
INDUSTRY INSIGHTS

Consolidating New Trends and Perspectives of the Commercial Drone Industry

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EXECUTIVE SUMMARY

Another year brings another edition of our annual Drone Industry Barometer. Given the way the world economy has picked up after two years of on-and-off lockdowns and restrictions, this year's Barometer is able to gauge industry opinions before, during, and after the pandemic.

Much like in 2021, this year's barometer had a strong showing by Asian countries. However, where China was the top Asian country last year, this year it was Japan that provided a huge amount of responses, followed closely by the US. Based on data published in our yearly [Drone Market Report](#), the US and Japan are among the strongest commercial markets in the world, and other countries in the top ten markets (e.g. Germany, South Korea, and the UK) were also in the top 10 of respondents for the Barometer. So once again, the data and opinions correspond well with the overall global market.

This year's question about drone operation methods was quite different in comparison with last year. Participants in this Barometer chose their main applied method per industry. Based on the responses, Photography & Filming is the most applied method among all companies in different industries, followed by Mapping & Surveying and then Inspection.


When it comes to the reasons to adopt drones, this year's question also has a slightly more nuanced [and interesting] approach. The 4 top options remained the same, but instead of only asking participants to choose between "not important", "important" and "very important", we added two intermediary options, which made for a much more interesting angle on which of these may be *most* or least important (p. 7).

In terms of expectations, last year we saw remarkable optimism from drone companies whose expectations for the coming year were as high as ever. Unfortunately, these expectations turned out to be rather unrealistic and companies experienced the lowest-rated year since 2018. It is likely that these two are correlated and the unfulfillment of extremely high expectations caused an equally large disappointment that caused a large gap between expectations and reality.

Nevertheless, the impact of the pandemic has largely subsided. More and more companies are reporting "no impact on my business" or other negative effects such as layoffs and drop in demand (p.13). Though it cannot be said that everything is back to "business as usual", business operations are still more normal than they were the previous two years.

Since the start of our Barometer, we have seen less and less focus on product development and an increased focus in marketing & sales as well as staff development. Meanwhile, the focus [and pressure] as most important market-driving actor continues to rest on rule-making authorities. (despite plenty of [progress in drone regulation](#)).

In conclusion, the 2022 Barometer provides the latest and most comprehensive view of the global post-pandemic drone market. Despite the challenges that this unforeseen event presented for companies all around the globe, the industry as a whole has proven its adaptability, resilience and bright future ahead.



Though it cannot be said that everything is back to "business as usual", business operations are still more normal than they were the previous two years.

INTRODUCTORY FACTS OF THE DRONE INDUSTRY BAROMETER

Our 5th annual drone industry survey took place in June 2022 to measure changes in the opinions and perceptions of drone companies towards the commercial drone market. Over the course of five weeks, we collected 891 survey responses which represents a 31% increase compared to 2021 (which had 678 responses). The survey was distributed via the Drone Industry Insights newsletter and social media accounts, as well as other supporting partners.

We received responses from 81 countries, with Japan leading by having provided 351 responses alone. Overall, the drone industry still seems to be more driven by start-ups and SMEs. Most of the companies that responded are small-sized companies with less than 10 employees (48%), followed by companies with a size between 11 and 50 employees (24%). The top 10 most-represented countries (see table below) account for 71% of all answers.

Top 10 Most Represented Countries in the Survey

	Japan
	United States
	Germany
	South Korea
	Spain
	United Kingdom
	India
	Australia
	Switzerland
	France

Survey Respondents by Company Size

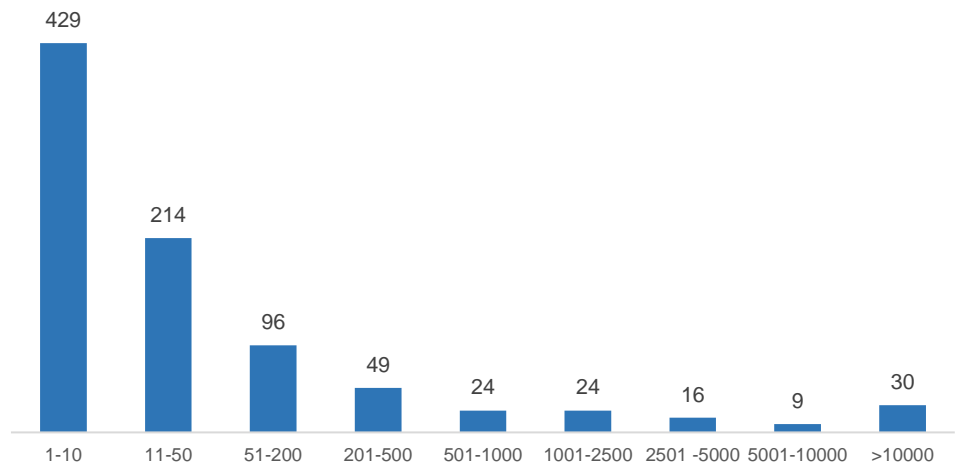


Fig 1: Most Represented Countries in Drone Industry Barometer Survey 2022

Fig 2: Company Size of Respondents (n=891)

Survey Respondents By Market Segments

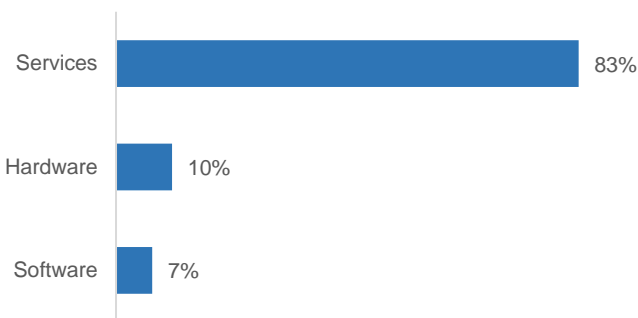


Fig 3: Survey Respondents by Market Segment (n=891)

The share of responses in the service segment increased a substantial amount in comparison to last year (2021: 69%). Within the service segment, drone service providers show an overall share of 33% (vs internal services, training, etc).

The portion of hardware manufacturers decreased to 10% from 24% in 2021. This increase in services and decrease in hardware may be due in part to Japan's service-intensive market and the large number of respondents from that country. Additionally, last year's survey included China which may have added to the number of hardware companies that participated.

Finally, the share of software remains unchanged in comparison to last year (7%).

Definitions:

Segment	Sub-Segment Examples
Hardware:	Platform and components, counter-drone system and eVTOL/passenger drone manufacturers, etc.
Software:	Manufacturers of software for UTM, flight-, fleet- & operation management, data analysis, etc.
Services:	Drone service providers (DSP), drone operators for business-internal services (BIS), training, education, insurance, research, engineering, reseller, maintenance, etc.

When it comes to application methods, the share of inspections is 21% for DSPs while is only 8% for BIS.



DRONE OPERATION

This year we asked companies in which industries they operate drones and what method they use most during their [drone applications](#). These companies are all either drone service providers (DSP) or business-internal services (BIS). DSPs are third-party service companies whose business is to offer drone services to clients from all kinds of industries like energy, construction or agriculture. BIS are mainly companies operating drones in-house and do not offer services to third parties.

The most relevant findings are:

- Photography & Filming is the most applied method among the companies in different industries. The share of this method is 48% for BIS companies and 33% for DSPs.
- Mapping & Surveying ranked second for both types of

company. Furthermore, the share of this method is roughly the same for both DSPs and BIS at around 30% .

- Inspection is the method that DSPs applied more than BIS in different industries. As can be seen in the graph, the share of Inspections is 21% for DSPs while is only 8% for BIS.
- The shares of the remaining methods: Localization & Tracking, Delivery and Spraying & Dispensing are between 3% - 5% for both, DSPs and BIS.
- It should be mentioned that this year's question about drone operation methods is different from last year, thus the results are not comparable to the last year.

Main Applied Methods

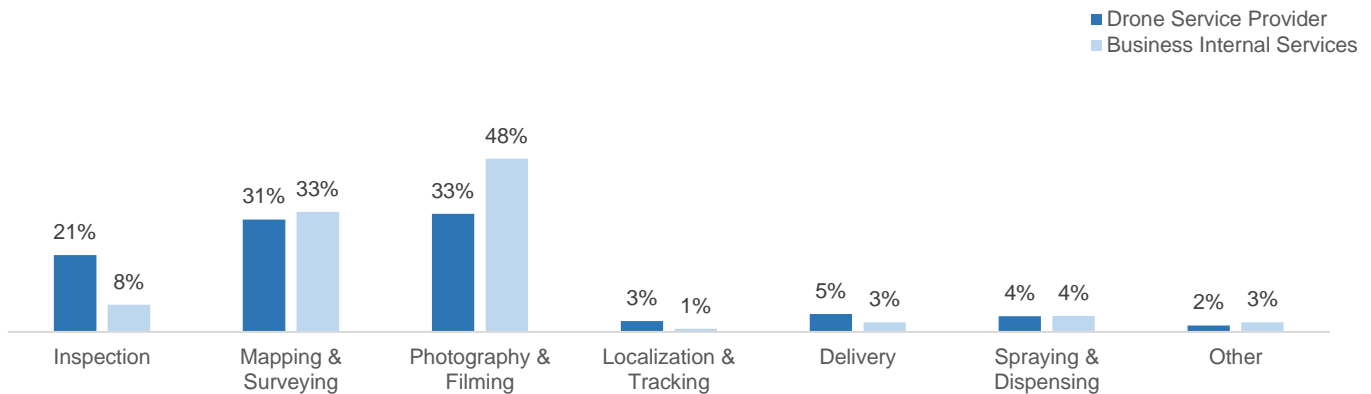


Fig 4: Main Applied methods (multiple answers possible, n=259)

Reason for Adopting Drones

(Multiple selections possible)

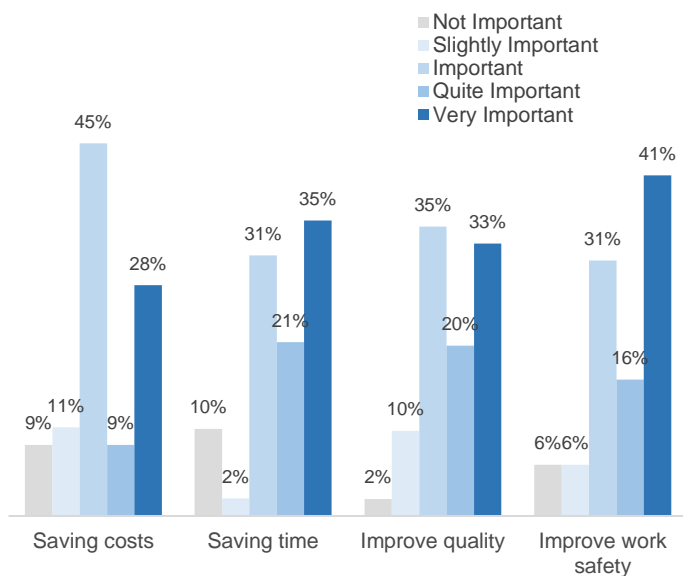


Fig 5: Reasons for Adopting Drones (n=50)

Ever since we started the Barometer series, it has been clear that all of the top 4 reasons to adopt drones are quite important for the industry. So this year we decided to add more nuance by making this question a scale from 1-5 rather than a 3-way choice between *not important*, *important*, and *very important*. BIS operators are the group who responded this question. The results are quite enlightening and thought-provoking.

If we focus on what the industry considers “very important”, the top reasons to adopt drones are [in order]: improving work safety (41%), saving time (35%), and improve quality (33%). When looking at “quite important” (not measured last year), the ranking is: saving time (21%), improve quality (20%), and improve safety (16%). This could mean that saving time is generally considered to be the most important factor, however “saving time” also received the highest amount of responses for “not important” (10%). So which is the top reason overall?

When looking at the general shape of the graphs, one could argue that “improve quality” is the top reason while “saving cost” is the least (after all, drones *can* be expensive despite being worth the money). Yet we prefer to simply present the data and leave the interpretation to our readers’ discretion.



From 2018 to 2020, the trend of expectations and reality converged. However, in 2021, the gap between expectation and experience increased again by a substantial amount.

EXPECTATIONS VS. REALITY

Another aspect that the Barometer seeks to measure is companies' expectations of the drone market. Therefore, the graph below shows the comparison of how the respondents' expectations match with the reality from different perspectives (ex ante vs. ex post of the respective year). The market development is defined based on the companies' sales growth. The past four years of surveying show that each year, drone industry expectations (blue bubbles) somewhat decrease

except in 2021, where the expectations increased significantly.

When it came to expectations for the 12 months ahead, respondents from 2018 were much more optimistic (7.3) than respondents in 2019 (6.6), who were in turn more optimistic than in 2020 (6.3). In 2021, the optimism came back (7.2) and respondents expected more growth for their next 12 months. However, the optimism declined again in 2022 and the respondents' expectations for upcoming 12 months is 6.3.

Comparison of Retrospective Analyses of the Drone Market with Prospective Ones

(0: dramatically falling - 10: strong sales growth)

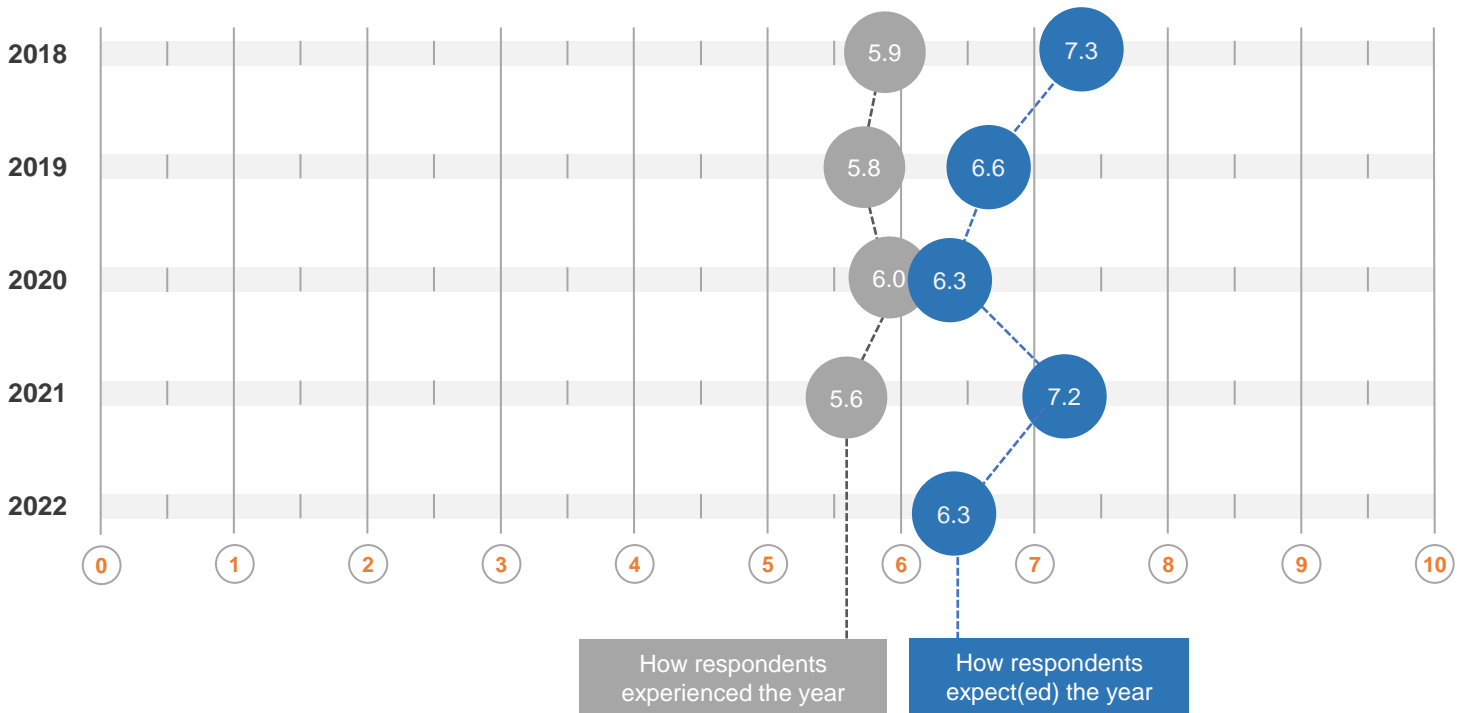


Fig. 6: Market Development in the Next 12 Months and Their Reflections on the Past 12 Months (n=599)

In the chart above, the grey bubbles show how respondents rated their previous 12 months. The decrease from 6.0 in 2020 to 5.6 in 2021 suggests that last year was tough for the industry when compared to the expectations that companies had.

From 2018 to 2020, the trend of expectations and reality converged. However, in 2021, the gap between expectation and

experience increased again by a substantial amount. Though it is common for expectations to be higher than reality, the very high level of expectations in 2021 may have led to the even lower perception of how the year went in retrospect.

MARKET DEVELOPMENTS BREAKDOWN

Companies in most market segments saw a lower level of market development during the last 12 months and their scores decreased in comparison with the last year.

Passenger drone manufacturers seem to be not happy with how the last year turned out. The score decreased from 6.3 in 2021 to 5.0 this year.

DSPs and BIS experienced the market development lower than the previous year(s).

Counter-drone manufacturers seemed to have a better year

than the ones before (with score changing from 5.9 in 2021 to 7.0 in 2022).

Overall, most sub-segments experienced a lower growth if we compare their development to the last year (with the exception of counter drone manufacturers and drone training & education).

How has the market developed in the last 12 months?

- Sorted from strongest to lowest expected growth per segment -

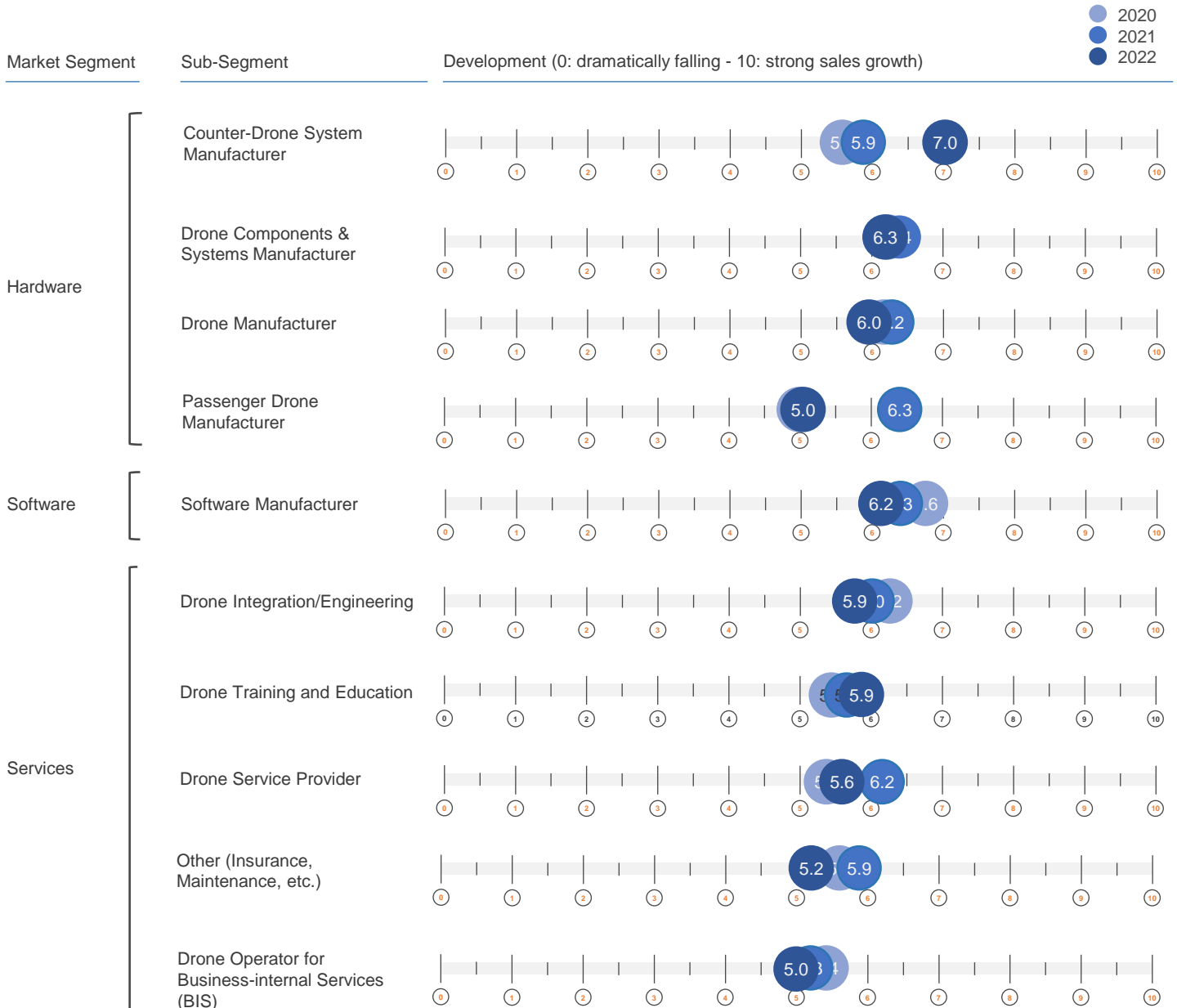


Fig. 7: Market Development in the Last 12 Months by Market Segment (n=599)

MARKET DEVELOPMENTS BREAKDOWN

How do you expect the market to develop in the next 12 months?

- Sorted from strongest to lowest expected growth per segment -

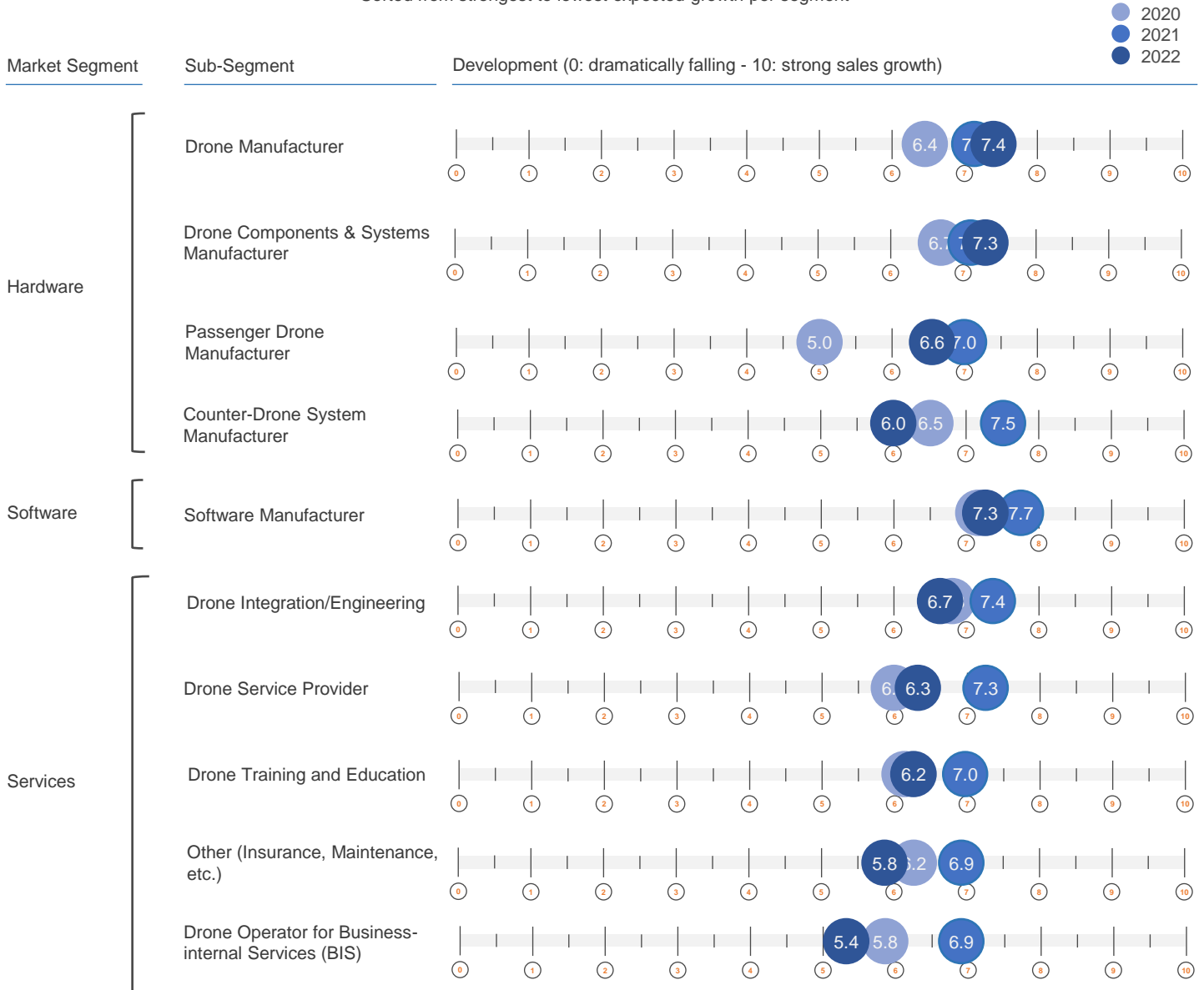


Fig. 8: Market Development in the Next 12 Months by Market Segment (n=599)

As we saw before, the overall drone market's expectation for the coming year decreased from an average of 7.2 in 2021 to an average of 6.3 in 2022. This trend is also observable in individual market segments.

The figure shows that most market segments are more pessimistic than last year. However, drone manufacturers and drone components manufacturers are the most positive about the market development and they are the only one whose expectations rose in comparison to last year.

For drone services, all the sub-segments' expectations decreased in comparison with 2021. This can be seen

especially for BIS whose expectations declined substantially from 6.9 in 2021 to 5.4 in 2022, which was the highest decrease from one year to the next (alongside counter-drone in the hardware sector).

Software manufacturers are in a more stable position, as their expectations have not changed substantially in three years.

Overall, it can be said that the negative effects of the pandemic have mostly subsided.



THE IMPACT OF THE CORONAVIRUS

After more than two years since the start of the pandemic, fewer companies experienced a drop in demand (33% in 2022 vs. 35% in 2021 and 43% in 2020). Production/operation shutdown also went down to 15% this year (2021: 21%; 2020: 33%) and staff layoffs declined to 9% in 2022 (2020: 16%). So overall it can be said that the negative effects of the pandemic have mostly subsided.

More companies also stated that the pandemic had no impact on their business (31% vs 19% in 2020). All of this could be a sign that companies found a way to adjust so that there would be less impact by the virus and its consequences. Some companies used the lockdowns to further develop and sharpen their products and services.

How has your business been impacted by the coronavirus pandemic?
(Multiple selection possible)

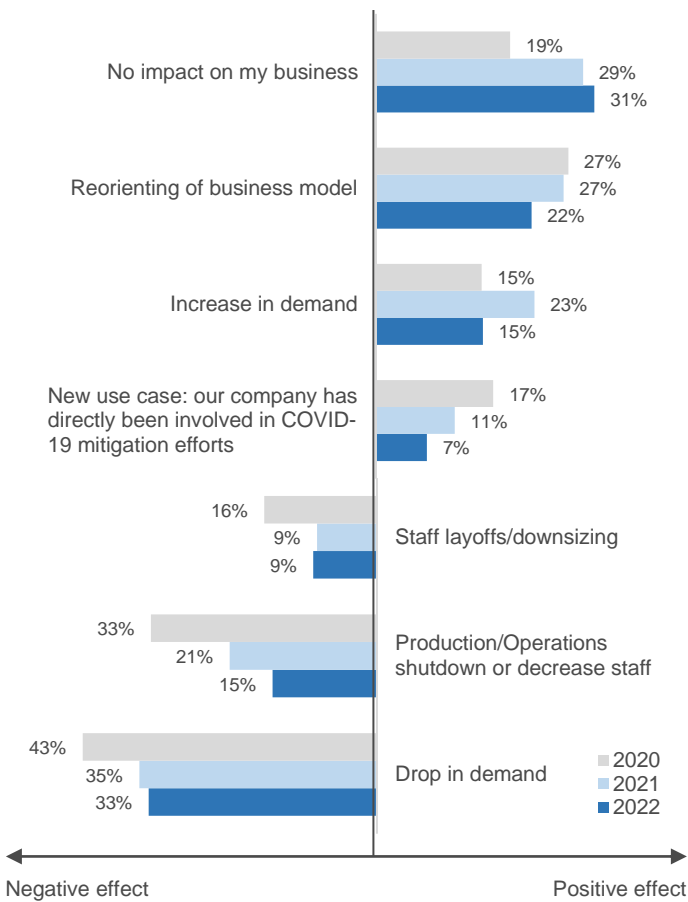
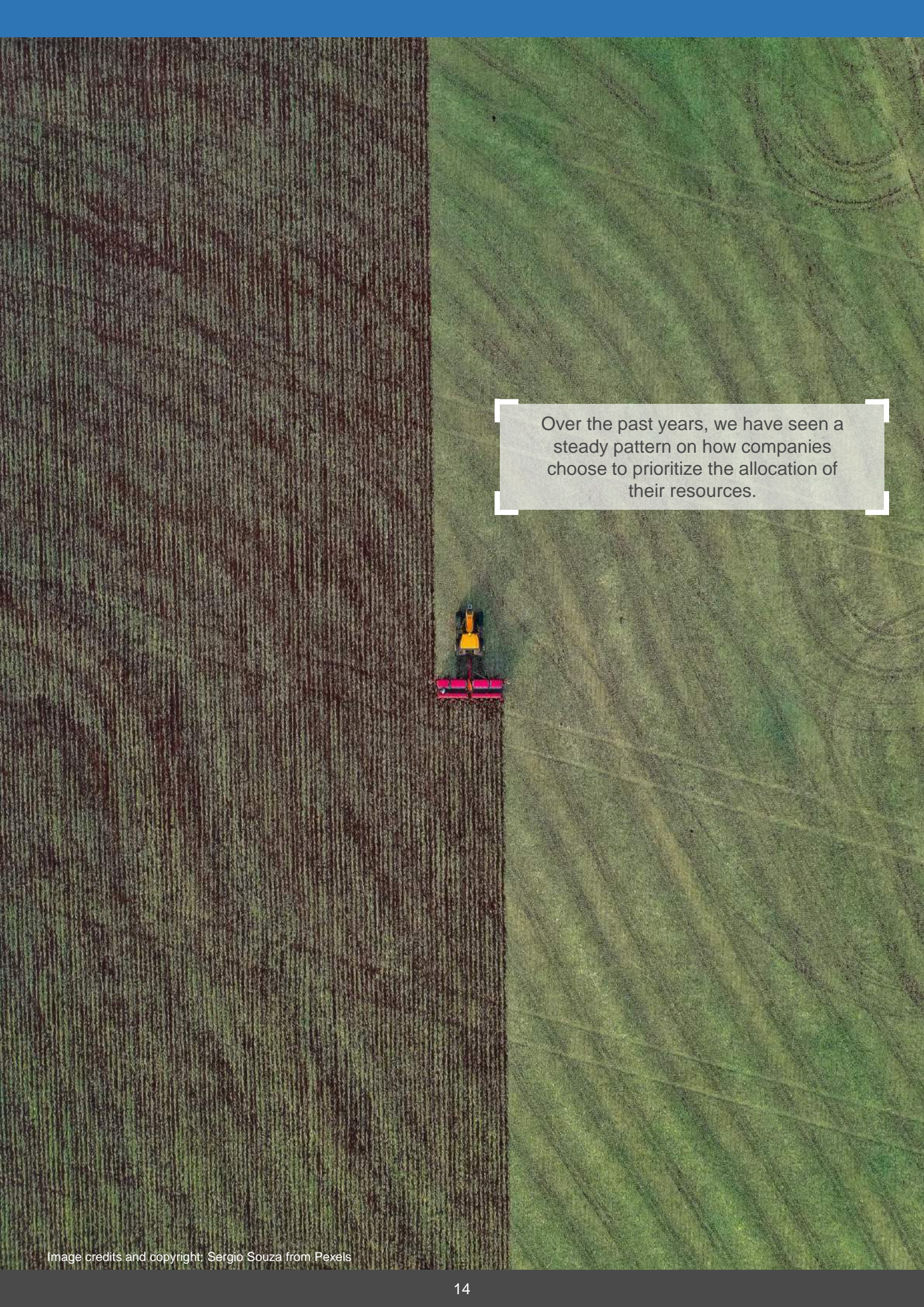


Fig 9 : Business Impact of the Coronavirus Crisis (n=593)

As the figure shows, less companies in 2022 stated that coronavirus pandemic brought new use cases to help mitigate the pandemic (7% vs 17%). Furthermore, less companies (22%) had to reorient their business model because of the pandemic in 2022 when compared to the first year of the pandemic.



Over the past years, we have seen a steady pattern on how companies choose to prioritize the allocation of their resources.

RESOURCES

In order to achieve the most efficient and economically-optimized use of resources, these resources must be distributed meaningfully, especially in a time of crisis. Therefore, to see what drone companies are investing their time and energy in,

we asked them what they prioritize when it comes to resource-allocation. Their resource distribution priorities are shown in Figure 10 below.

What will you prioritise in your resource spending in the next 12 months?
(Multiple selection possible)

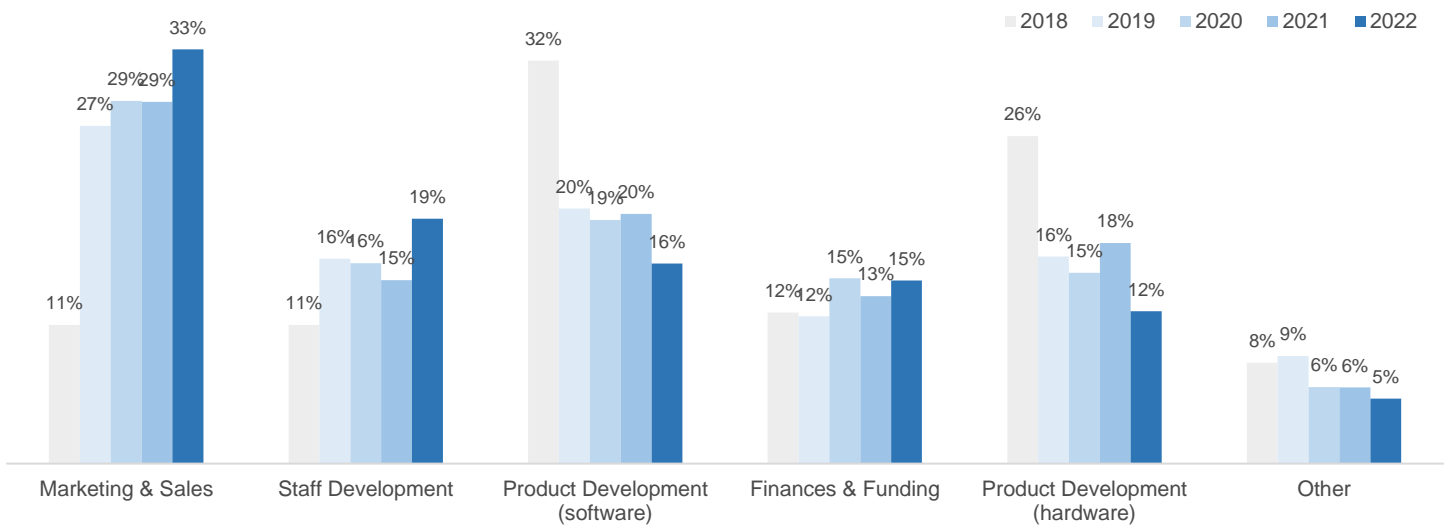


Fig. 10: Survey Respondents' Answers to What They Allocate Their Resources To (multiple answers possible, n=599)

Over the past years, we have seen a steady pattern on how companies choose to prioritize the allocation of their resources. The drone industry has continued to mature through a point where the focus is on advertising and selling refined products and services rather than developing them.

Marketing & sales remains the leading priority for the next 12 months, as it has been in the previous four years. Most importantly, the level of importance in marketing has *tripled* since 2018, and this may be caused by two key reasons. One is the fact that the drone industry is highly innovative and exploratory, so it relies on events and shows that could not or did not take place over the past couple of years. Therefore, companies had to invest a lot more on marketing in order to showcase their products. Another key reason is the amount of sophisticated hardware and software that already exists, which means that companies must focus more on their USP (Unique Selling Point) and therefore need to prioritize their communications and marketing.

The second-highest priority after marketing & sales is staff development. This result is in line with [our recent study about drone jobs](#) which showed growing number of drone jobs over the past years. In order for drone companies to succeed, they

need the right personnel, and it is now more important than ever to prioritize staff development given the increased level of competition to find the right people with the right qualifications.

Given the increased importance of marketing, it is also no surprising to see that the importance of product development (both hardware and software) has been cut in half since 2018. Four years ago, hardware development took priority for 26% of respondents and software development was at 32% (which were both higher than marketing at 11%), yet now they are at 12% and 16% respectively while marketing & sales has boomed to 33%.

Companies' prioritization of resources focuses on finances & funding has increased slowly over the past years, but it would also be accurate to say that it's remained more or less steady.

Lastly, the 'Other' category includes developing partnerships, international cooperation, facility expansion, business development, etc. Yet these remain of less consequence and priority for drone companies all around the globe.



Once again, the top market-driving factor according to participants is rule-making authorities.

DRIVING FACTORS IN A DYNAMIC MARKET

How does the global drone industry move forward? Once again, the top market-driving factor according to participants is rule-making authorities. Although the percentage share is lower than in previous years, it is worth mentioning that this year we have added a new actor, which affects the distribution and lowers the percentages for responses from the previous years. Here are some of the key insights about all of these actors.

Clear roadmaps and regulatory frameworks have become the key focus for everyone who makes, sells, uses, or is in any way involved with drones. Companies need regulations in place to scale their business within the commercial drone space, while operators need to know what is or isn't allowed and how to go about carrying out all sorts of activities. Whether it's inspecting infrastructures, delivering goods, or even flying people, regulatory bodies will remain in the spotlight for the development of the industry.

Slightly behind regulators, we find both hardware (44%) and operators/DSPs (43%), which are those who directly make or

operate drones. As has been mentioned in other sections of this Barometer, the drone industry has matured to a point where drone operators have become increasingly more important. So we can expect this pattern to continue in the coming years.

This year we also added drone associations to the list of most important market-driving actors. As can be seen in the results, they are perceived as the fifth most important market driving actor, ahead of JARUS, ASTM and other organizations for safety concepts. Drone associations have become an increasingly important actor to understand [a country's unique drone market](#) and they can also help companies come together for lobbying or motivating rule-making authorities to establish necessary regulations sooner. This can also explain why safety-concept organizations are less influential, since they are mostly relevant for advanced operations and the majority of operators find the current system as sufficient.

Market driving actors in "other" category include customers/end-user, [adoption of BVLOS](#), technology applicator, etc.

Market-driving factors
(Multiple selection possible)

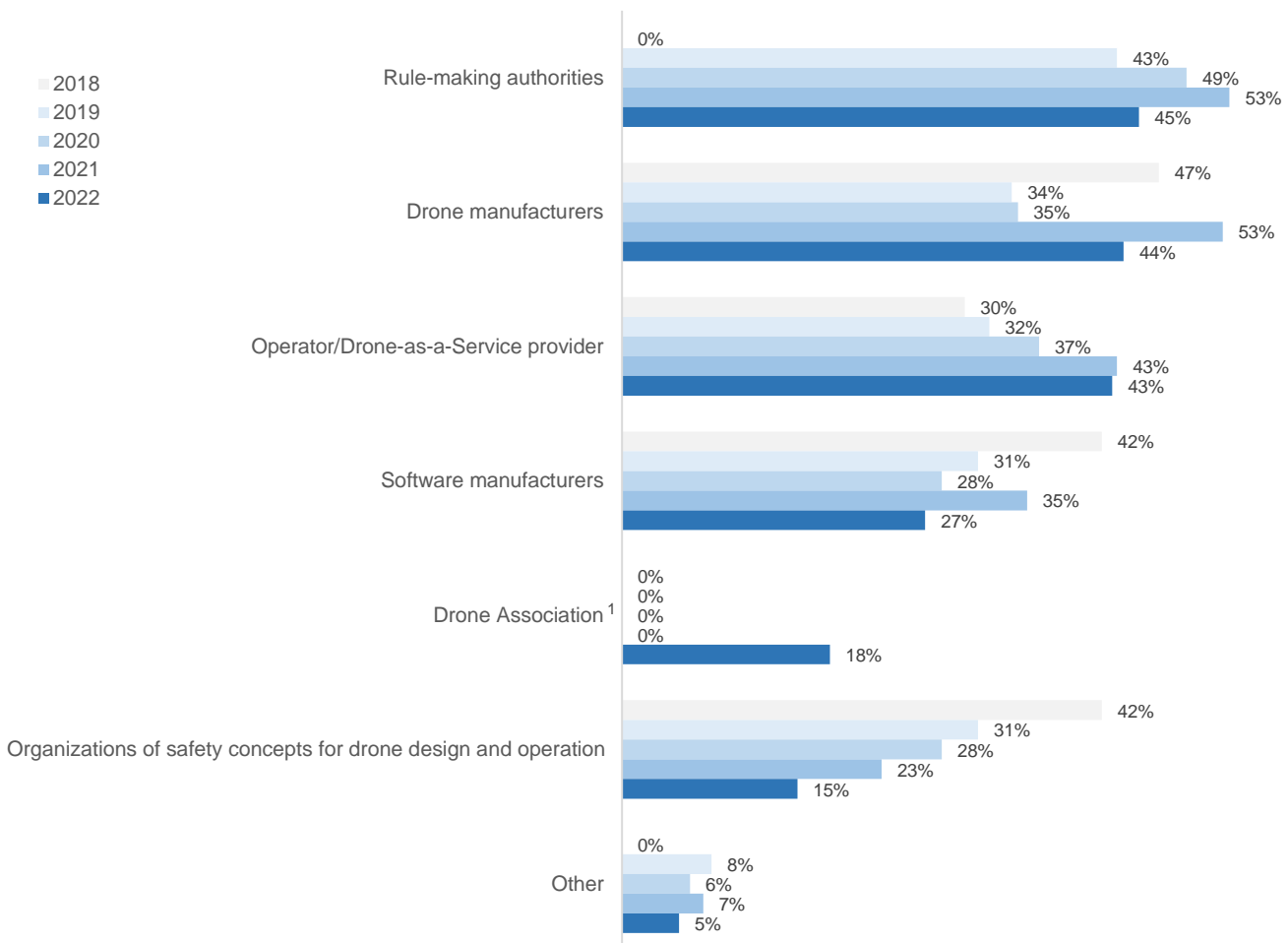


Fig. 11: Survey Respondents' Assessment of the Most Important Market-Driving Actors in the Drone Industry (multiple answers possible; n=599)

¹Drone Association was not included as an option in industry barometer survey in previous years.

ABOUT

The study was conducted from the end of May 2022 until the end of June 2022 and distributed by industry partners, drone coalitions, alliances and initiatives around the world.

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DRONEII.com is the leading market research and analytics company for commercial drones. Their core business is to create new knowledge in the field of unmanned systems. Their comprehensive understanding of the commercial drone market combined with a global view enables them to create industry reports and bespoke market studies. Combined they have more than 40 years of experience in manned and unmanned aviation and other relevant industries.

Supporting Partners for Survey Distribution



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