



Swiss Drone Industry Report 2024

March, 2024

Independent Study by Drone Industry Insights UG

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Executive Summary

1. Swiss Drone Industry Overview 2024

- The Swiss Drone Ecosystem is widely distributed in Switzerland. It comprises a high-end manufacturing industry and a diversified end-user market with more than 70,000 registered drone operators
- There are drone hubs in the greater Zurich, Bern, Lausanne, and Geneva areas – especially near the Universities ETHZ and EPFL
- Drone companies in Switzerland are rather young – over 60% of the companies were founded in the last five years
- In Switzerland and globally, the total drone investment value declined noticeably. Nevertheless, Swiss drone companies have collected an investment value of more than 400m CHF since 2010
- The Swiss drone industry will generate a revenue of 569m CHF in 2024. Its value is expected to grow with a CAGR of 7.4% to 871m CHF in 2030
- A total of 55% (2021: 45%) of products and services from Switzerland are exported. Swiss hardware (91%) and software (87%) companies earn money almost entirely outside Switzerland
- Most (55%) of Swiss products/services stay within the EU

2. The Swiss Drone Market

- In 2024, the total Swiss drone market size (commercial + recreational) will be 425m CHF and grow to 607m CHF in 2030 at a CAGR of 7.0%
- The Swiss drone market will have a global share of about 1% (1.4% in 2021), which is, in global comparison, the 12th largest market. Switzerland ranks first globally when looking at the market size per capita

3. What it means to be a Swiss Drone Company

- The excellent living conditions and talent access, as well as the strong government support of start-ups, lead to a good environment to foster innovation
- Compared to the 2021 study, these results are very similar, which means that the overall context (both startup friendliness and challenges) has not changed significantly
- The EU regulation was introduced, and most drone companies see a step backward in regulatory permissiveness. This means that the regulations are more difficult for users compared to 2021
- A more direct and quicker access to the FOCA and regulatory certainty are desired
- The drone companies reported limited access to later-stage funding

- Drone products and services are usually sold in EUR or USD – the strong CHF reduces the profit margins of exports

4. Development Outlook and Market Demands

- In retrospect, many businesses did not experience the expected success. The regulatory environment, along with geopolitical changes, caused a significant gap between what should have and did not materialize
- The highest priorities are increasing the collaboration of local partnerships/ecosystems and with the governments/ministries to support the local industry, as well as to enhance the operational flexibility to bring back the local competitive advantage
- Most "magic wands" are in the regulation sector, like in the 2021 study. Even though the adoption of the EASA framework enabled access to the European market, it underlines that the existing regulation has the greatest impact on drone companies and that this area has the most need for change
- Even though FOCA is comparatively quick in adopting the EU framework there are general requests for greater transparency and a faster creation of an effective drone operation environment

Foreword

Dear Reader,

Drones are a key future technology and will profoundly change the economy and society in the coming years and decades. They will be of crucial economic importance and will create opportunities for many regions in Switzerland. Unlike many other industries, this enormous growth market is still in its infancy and yet to be scaled, so there is, consequently, still great potential for Switzerland to take a leading role in this industry.

Since DIAS was founded in 2017, we have represented, supported, and promoted the Swiss drone industry and our members who offer and export drone-related products and services from Switzerland. Since then, the Swiss drone industry has seen constant growth, the development of companies from startups to more mature entities, and the establishment of several market leaders in Switzerland.

With this second Swiss drone industry report, we aim to achieve three goals. First, we seek to better understand how the Swiss drone industry has evolved since the first report in 2021. We want to again better understand the size of this

industry and how it compares in an international context. We also want to confirm Switzerland's leadership position in this new technology.

Secondly, we would like to understand how the recent political and regulatory developments impacted the Swiss drone companies. The recent introduction of the EU Reg. 2019/945 and 2019/947 is especially interesting in this context. Finally, we wanted to hear directly from the industry experts about what they think is important going forward and what they believe needs to be improved for the Swiss drone industry to grow further and consolidate its leadership in a global context.

To achieve these goals and as for the 2021 study, we commissioned the independent market research company Drone Industry Insights from Hamburg, which specializes in unmanned aviation and has already published similar market reports for other countries, to carry out the analysis, survey, interviews, and compile the report. This report was also financially supported by cantonal development agencies and other organizations that promote the Swiss drone industry.

We hope that national and international industry

players, political and economic stakeholders, and the broader public and media can use this report as a baseline to keep the conversation and collaboration going and, together, help position Switzerland at the forefront of this key future technology.

We wish you a good reading.

- Nathanel Apter, for the DIAS Board

Methodology

1. General

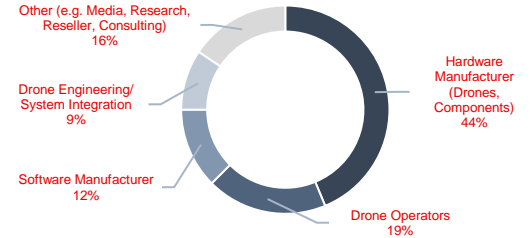
- Drone Industry Insights follows a proprietary research approach when creating reports and studies. This involves collecting primary and secondary data and validating the gathered insights internally with the analyst team and externally with other industry experts.
- The main objective is to create insights based on real data. The bottom-up approach used in all of Drone Industry Insights' studies makes the insights representative and valid, and its predictions reliable.
- Three types of sources are used to create this report: proprietary, secondary, and primary.
 - Proprietary data includes knowledge acquired by the analyst team over many years and accumulated through countless conversations and events with industry professionals.
 - Secondary data includes databases, publicly available data (e.g., governmental), and paid data from trusted sources. It includes, for example, pilot registration data, software downloads, unit sales, company size, and many more.
 - Primary data is acquired in surveys and interviews, the latter of which are used to discuss certain issues and validate

hypotheses and findings.

- Following the analysis of the aforementioned data types, the analyst team is very careful in concluding without being rash. Therefore, data triangulation (cross-checks) is performed.
- The applied concept of creating data for a specific market segment or industry is the "bottom-up" approach. This means collecting lots of highly valuable information on the base and then aggregating the data to:
 - Determine market size & growth
 - Uncover pattern
 - Find trends and developments
 - Determine opportunities and challenges

2. The Swiss Drone Industry Study 2024

- This study was created from March to April 2024.
- To get an impression of the Swiss drone industry, an online survey was conducted with 33 participants.
- Answers came from the Hardware sector (drone platforms, counter-drone systems, components & systems), followed by Drone Operators, Software Manufacturers (navigation, UTM, etc.), Engineering & System Integration, and Others (associations, consulting, etc.).



- To validate hypotheses/insights, interviews with 8 industry experts (DIAS members, other drone industry players, and political stakeholders and authorities like FOCA) have also been conducted.

DRONE INDUSTRY INSIGHTS

- Drone Industry Insights – or DRONEII.com – is a market research and consulting company, dedicated to the field of commercial drones.
- As a boutique agency, they help global actors and stakeholders with in-depth market research and the most recent data to support critical business decisions.



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Definitions

Definition: Segments

The drone industry is a complex ecosystem structured into distinct segments: hardware, software, and services. Each segment is further divided into several sub-segments, highlighting its intricate nature.

Hardware

- Platforms
- Components and Systems

Software

- Flight Planning
- Navigation & Computer Vision
- Workflow & Data Analysis
- UTM
- Fleet & Operation Management
- Augmented Reality & Virtual Reality

Services

- Drone Operation
- System Integration, Engineering, R&D and Advisory
- Education, Simulation & Training
- Coalitions, Organizations, Initiatives
- Other¹

Definition: Industries

The North American Industry Classification

System (NAICS) is the standard federal statistical agencies use to classify business establishments. This standard is qualified to describe the drone economy thoroughly. In this report, these verticals are slightly altered and read as follows:

- Agriculture
- Arts, Entertainment & Recreation
- Construction
- Courier Services and Warehousing
- Energy (Oil & Gas Extraction and Utilities)
- Educational, Scientific & Technical Services
- Health Care & Disaster Relief
- Information & Motion Picture
- Insurance
- Mining and Quarrying
- Public Emergency Services
- Public Administration
- Real Estate and Industrial Plants
- Safety & Security
- Telecommunication
- Transportation Infrastructure
- Waste Management & Remediation Services

Example: The Safety and Security sector consists of establishments of private agencies that administer, oversee, and manage private safety and security activities. Private or public entities usually commission these agencies to perform safety and security-critical tasks.

Working for the Safety & Security industry means generating revenue from hardware, software, or services related to Safety & Security purposes.

Definition: Drone Industry Size (generated revenue)

In contrast to the local demand, the industry size includes all revenue generated in the Swiss market, regardless the generated value is sold abroad. In other words, it represents the gross national income of the Swiss drone-based company.

Definition: Drone Market Size (local demand)

The market sizes show the demand in the individual countries, not the value of CHF generated in the countries. These values can vary greatly if, for example, the company's turnover is significantly greater than the country's demand or vice versa.

Example: A Swiss company produces software and generates a turnover of 20 million CHF annually. However, the demand for software in Switzerland is only 10 million CHF. This means the market size in Switzerland is 10 million CHF, and the company sells the other 10 million CHF abroad.

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- 4 Development, Outlook & Industry Demands
- 5 SWOT Analysis of the Swiss Drone Industry

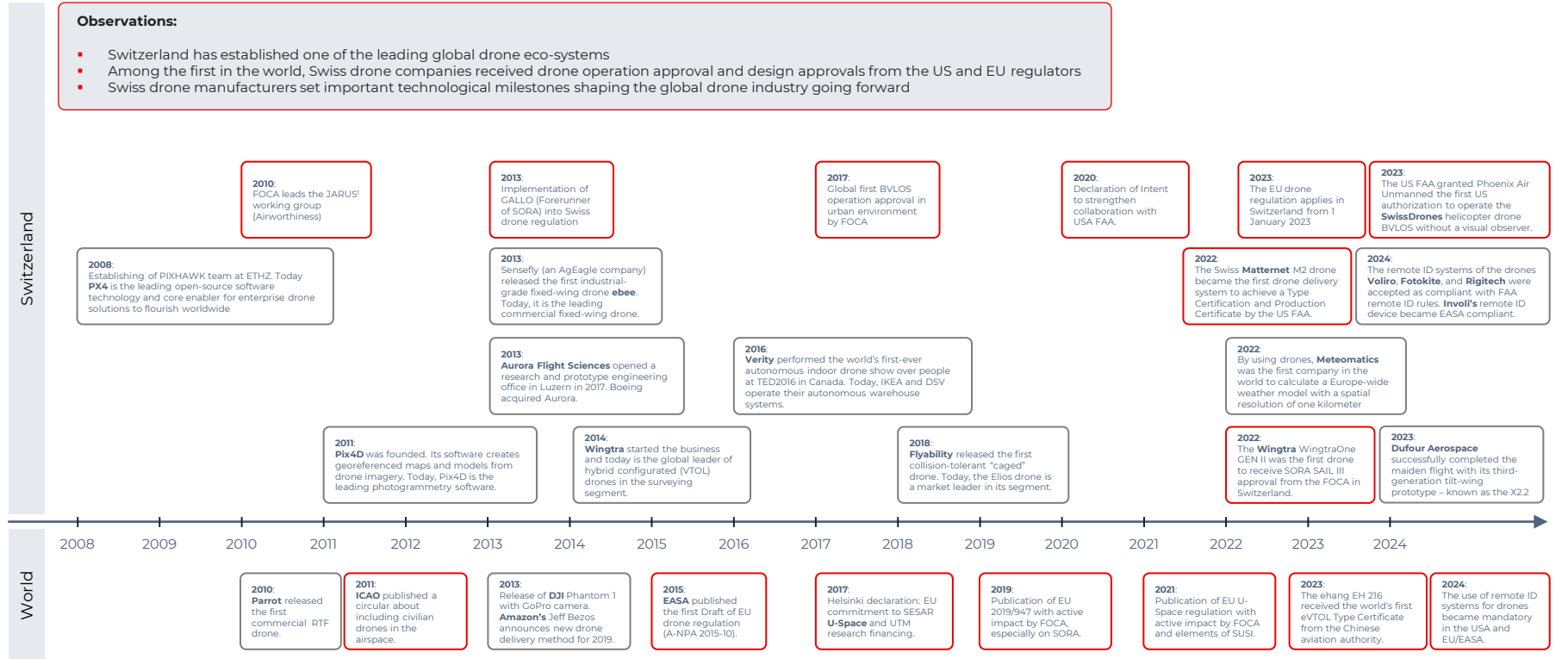
1.1 Drone Industry Overview 2024 – Summary

Swiss Drone Industry Overview

- The Swiss Drone Ecosystem is widely distributed in Switzerland. It comprises a high-end manufacturing industry and a diversified end-user market with more than 70,000 registered drone operators
- There are drone hubs in the greater Zurich, Bern, Lausanne, and Geneva areas – especially near the Universities ETHZ and EPFL
- Drone companies are very startup-driven. Only a few companies have been able to scale their product/service in terms of both the number of employees and revenue
- The drone companies are active in all industry sectors – a lot of activity can be seen in Public Administration, followed by Transportation Infrastructure and Public Emergency services
- Drone companies in Switzerland are rather young – over 60% of the companies were founded in the last five years
- Globally and in Switzerland, the total investment value declined noticeably, especially in the later stage/growth area. Nevertheless, Swiss drone companies have collected an investment value of more than 400 million CHF since 2010
- On the positive side, investments in the small segment (seed) have remained stable. Most investments were also made in this area.
- Experts expect investments to increase from 2025 onwards
- The Swiss drone industry generates revenue of 569m CHF in 2024. The industry value is expected to grow with a CAGR of 7,4% to 871m CHF in 2030
- A total of 55% (2021: 45%) of products and services from Switzerland are exported. Swiss hardware (91%) and software (87%) companies earn money almost entirely outside Switzerland
- Most (55%) of Swiss products/services stay within the EU; Germany is the most important sales market.
- The label “Made in Switzerland” is perceived as highly valuable across the globe

1.2 The Evolution of the Swiss Drone Ecosystem

Regulatory milestones
 Technology/Market milestones



¹Joint Authorities for Rulemaking on Unmanned Systems with currently 61 countries as members including EASA and Eurocontrol
 Source: Drone Industry Insights UG

1.3 Swiss Drone Industry Map



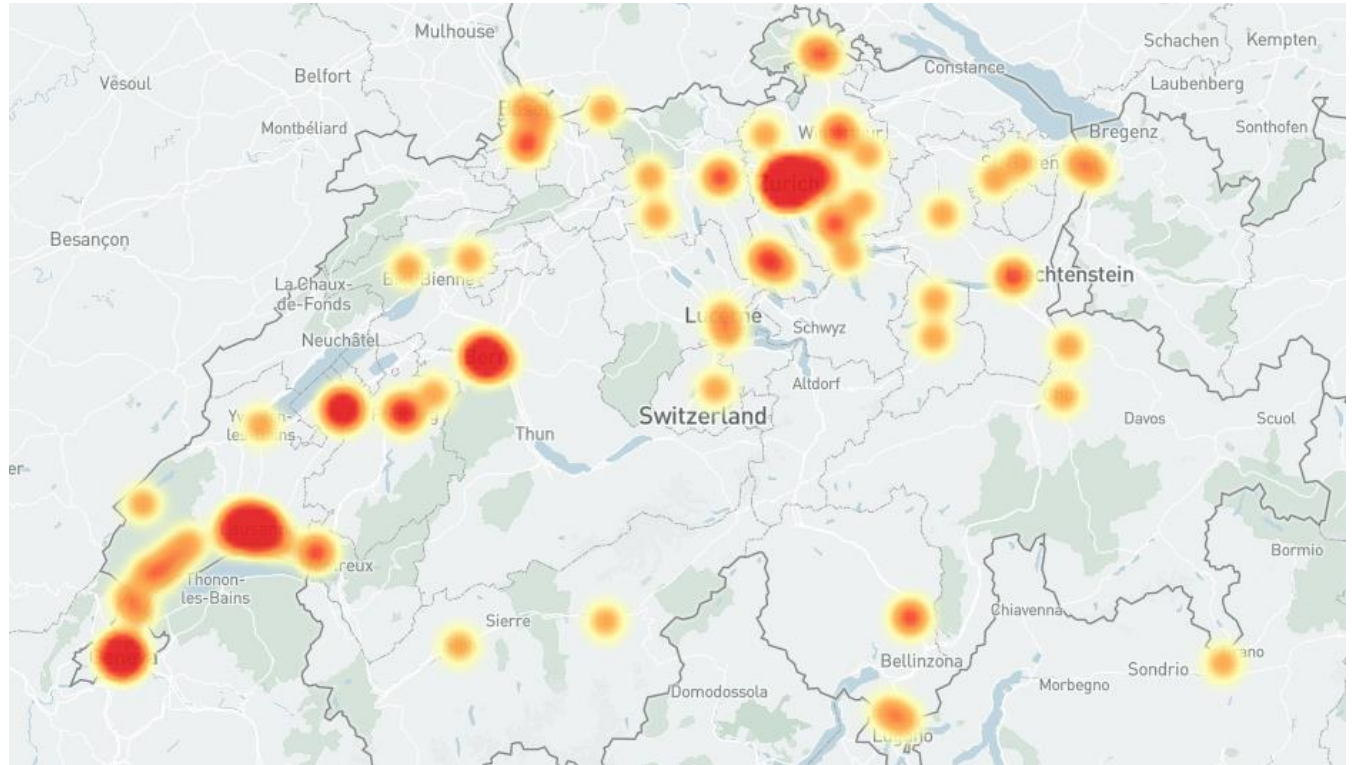
Note: List not exhaustive
Source: Drone Industry Insights UC

1.4 Localization of Swiss Drone Companies

● Number of Companies per ZIP code

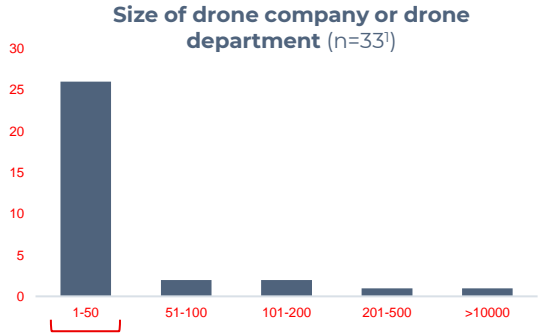
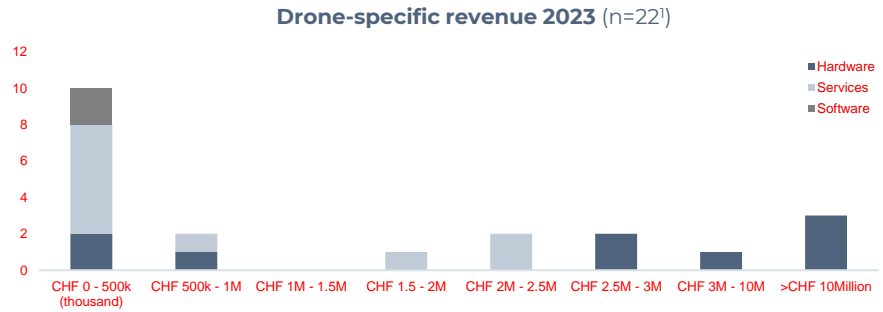
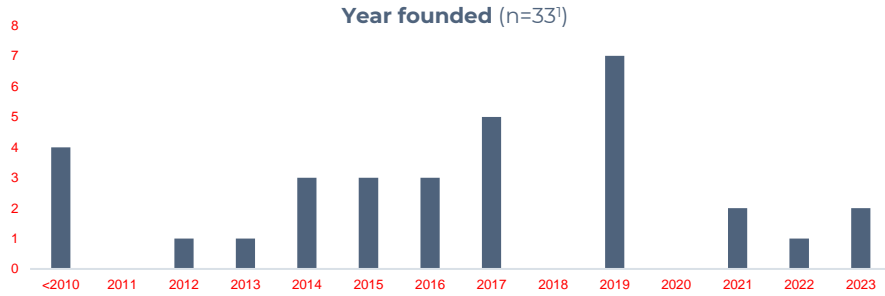
Observations:

- There are drone companies all over Switzerland and there are no major changes compared to the 2021 study
- An agglomeration of leading drone companies can be found in the greater Zurich, Bern, Lausanne and in the Geneva area
- Especially the hotspots in Zurich and Lausanne with their Universities stick out
- In Switzerland, nearly 70.000 drone operators have been registered¹ – predominantly for recreational use



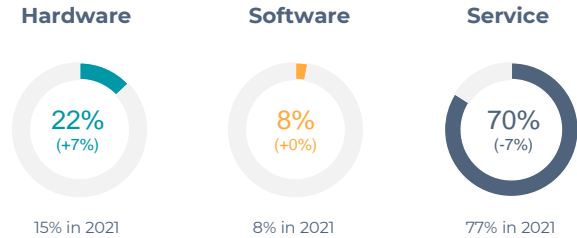
1.5 Swiss drone companies' demographics

SURVEY
RESULT



85% of companies have 50 employees or less

6.500 people are involved in the drone industry in Switzerland today. There were only 4.800 back in 2021.

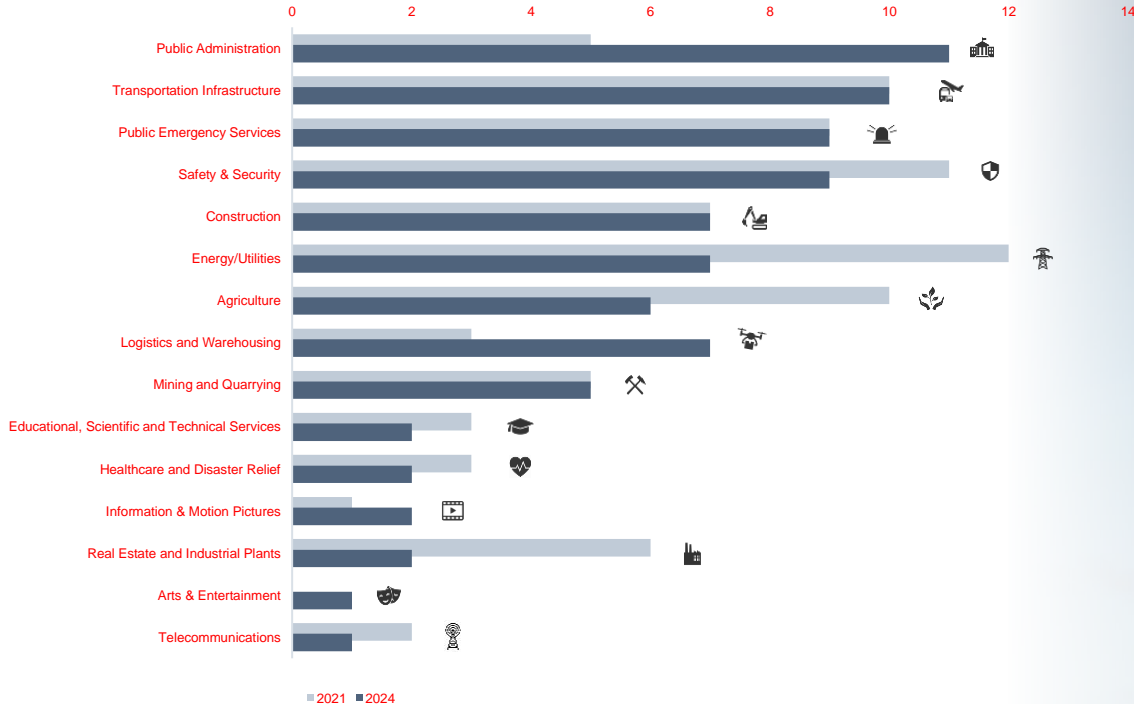


- Observations:**
- Swiss drone companies are rather young, small, and startup-driven - over 60% of companies were founded in the last five years
 - Since 2020, the relative turnover of leading drone companies has increased
 - There are currently around 6.500 people (FTE - full-time equivalent) involved in the drone industry (+35% compared to 2021)
 - The majority of employees work in the service segment, e.g., drone-as-a-service. While the hardware segment has grown, the services segment relatively declined by 7%

1.6 Market segments and industries

SURVEY
RESULT

Top 3 focus industries per company (n=27)

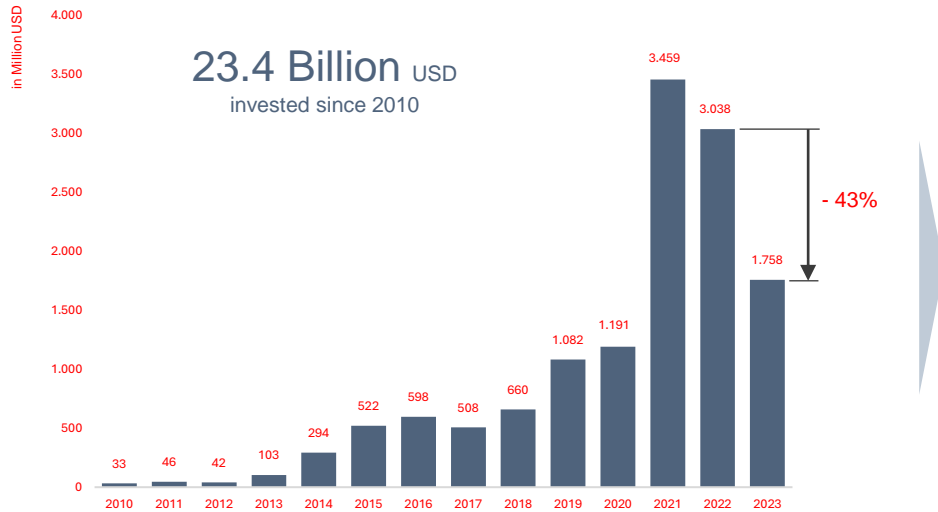


- Observations:**
- Public Administration ranks highest in the focus industries as a result of greater openness and willingness to invest in local markets
 - Transportation infrastructure (bridge inspection, train track inspection, etc.) ranks second as practicality and stronger digitized asset management tools caught up to drone technology
 - The label "Made in Switzerland" is perceived as highly valuable across the globe – and especially in the Public Emergency Services and Safety & Security industry
 - Some of the listed industries are less pronounced in Switzerland, so many manufacturers are targeting other countries from the start

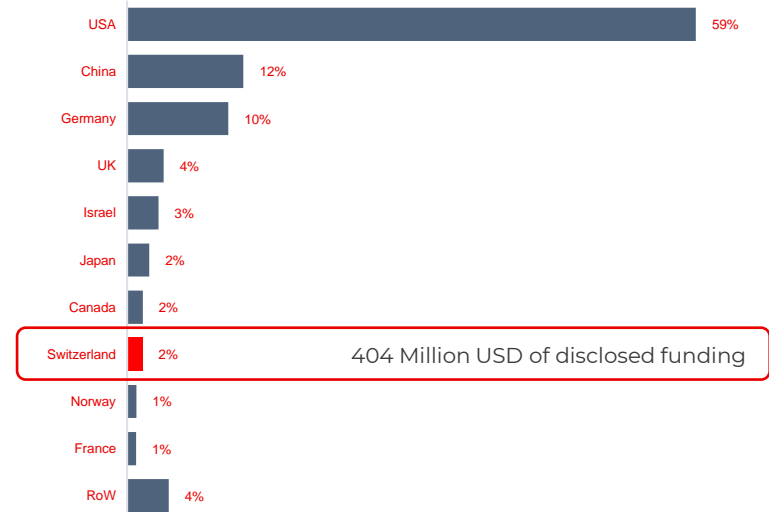


1.7 Swiss Funding in Global Comparison

Total global drone company funding
2010-Q1 2024



Countries in terms of received funding
2010-Q1 2024



Observations:

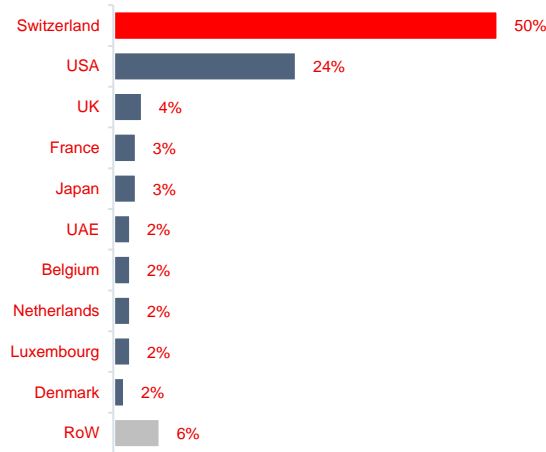
- After a positive development until 2021, global investments declined strongly. The biggest declines were in the “later stage/growth” segment and “public investments,” while early-stage investments changed marginally
- Investors became more cautious due to geopolitical development, supply chain concerns, and inflation, which led to higher interest rates
- With 2%, Switzerland only received a small part of the global funding. This corresponds to 404 million USD (disclosed funding) from 2010 until the first quarter of 2024 ; however, compared to Switzerland's size (funding per capita), this is a comparatively high value

1.8 Swiss Investments & Investors

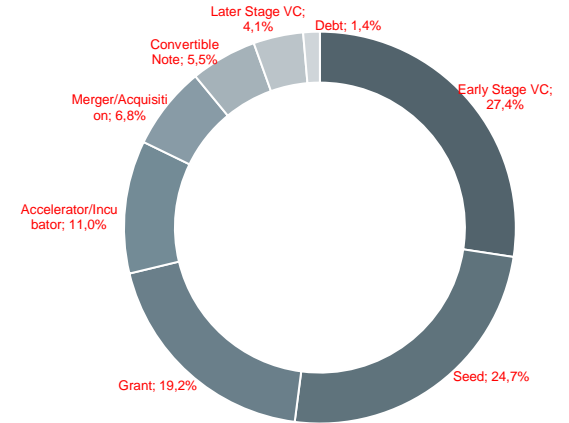
Total Swiss drone company funding
2010-Q1 2024



Country of funding origin
2010-Q1 2024



Swiss investments by stage
2010-Q1 2024

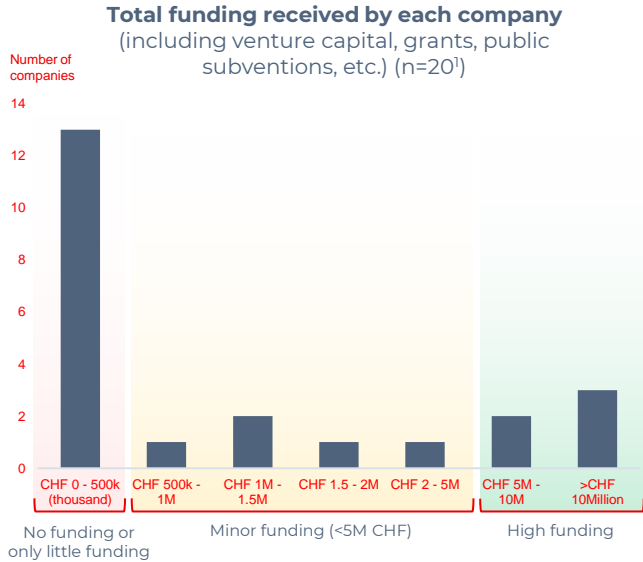


Observations:

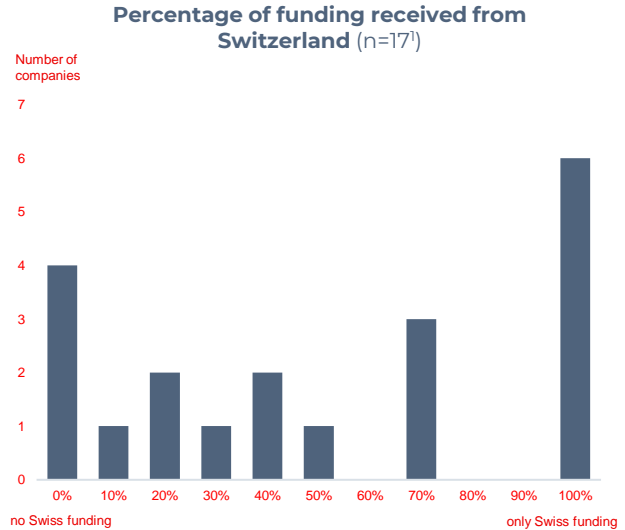
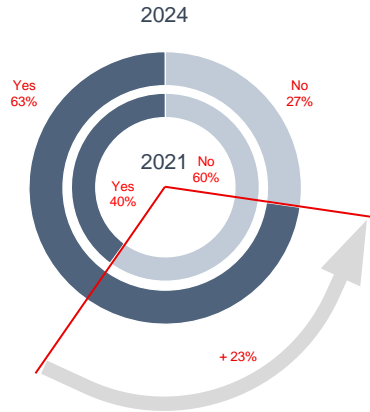
- Since 2010, Swiss drone companies have received at least 404 million USD of disclosed external funding – half of this funding came from Switzerland
- The main emphasis is laid on early-stage venture capital investments to support startups
- Like the global situation, investments have declined since 2022, particularly in the later stage area (>\$10mn).
- Despite the recent decline in investments, Swiss investment experts maintain a positive outlook for the drone industry's future. Their optimism is a testament to the industry's resilience and potential for future growth

1.9 Investments on Company Level

SURVEY
RESULT



Was it difficult to acquire funding from Swiss entities/investors? (n=27¹)



Observations:

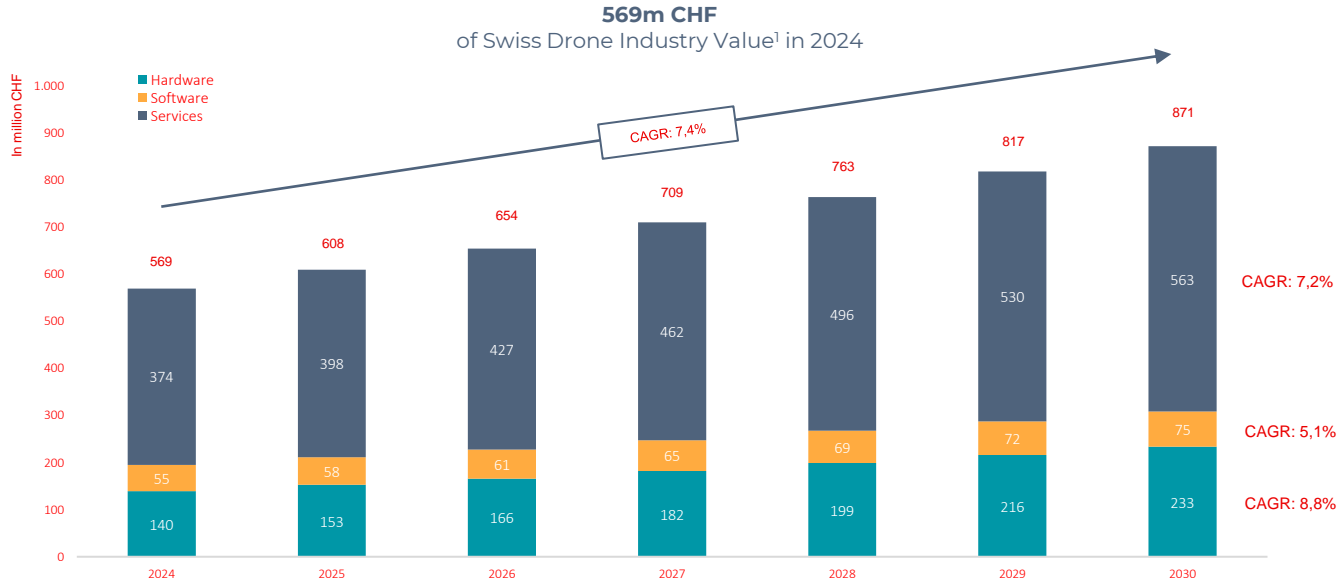
- Most of the drone companies received either no funding or less than 500 thousand CHF
- Almost half of the investors come from Switzerland. The higher the investment volume, the greater the share from foreign investors (predominantly from the USA) as an effect of acquiring Swiss funding has become much more difficult since 2021
- Investors in the drone industry are very selective. Investors must trust the advanced hardware, regulations, and business models – and all this in an aviation and B2B context with fierce competitive pressure from large aviation companies

Expert Outlook²:

- The current interest rate environment is leading to greater risk aversion, but the will to invest is only shifting to a later point in time
- The current macroeconomic factors are more short-term
- The B2B drone market is more resilient than the B2C drone market
- Drone technology (deep tech) is trending upwards and will continue to grow over the next few years

¹ based on surveys and interviews with Swiss companies conducted in May 2021 and March 2024.
² Interview with Thomas Heimann, Deputy General Secretary SECA / Co-Author of the Swiss VC Report; Startupticker.ch
 Source: Drone Industry Insights UG

1.10 Swiss Drone Industry Value and Growth



Services include:

- Drone Operation
- System Integration, Engineering, R&D
- Consulting
- Education, Simulation & Training
- Coalitions, Organizations & Initiatives
- Others (see definition on page 6)

Software includes:

- Flight Planning
- Navigation & Computer Vision
- Workflow & Data Analysis
- UTM
- Fleet & Operation Management

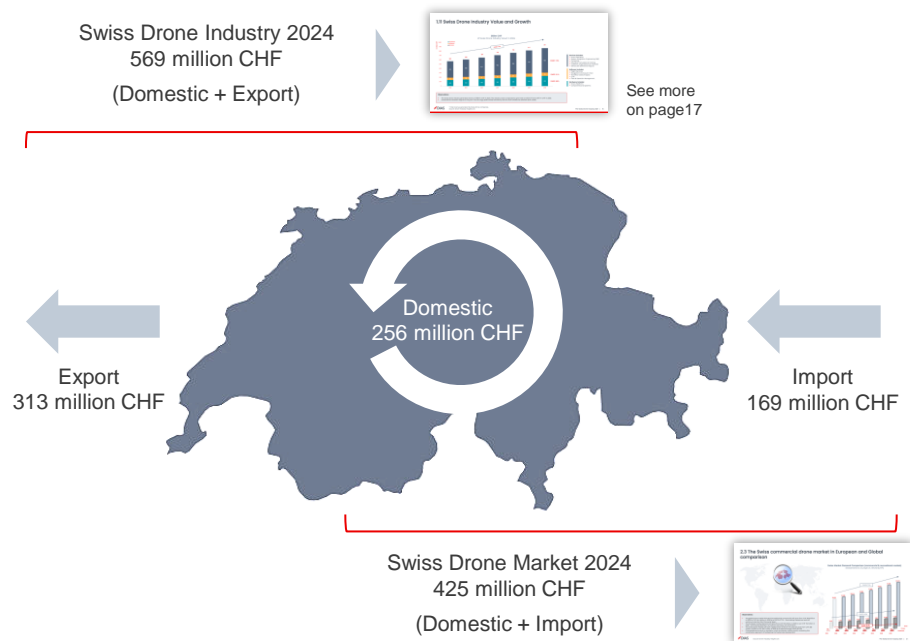
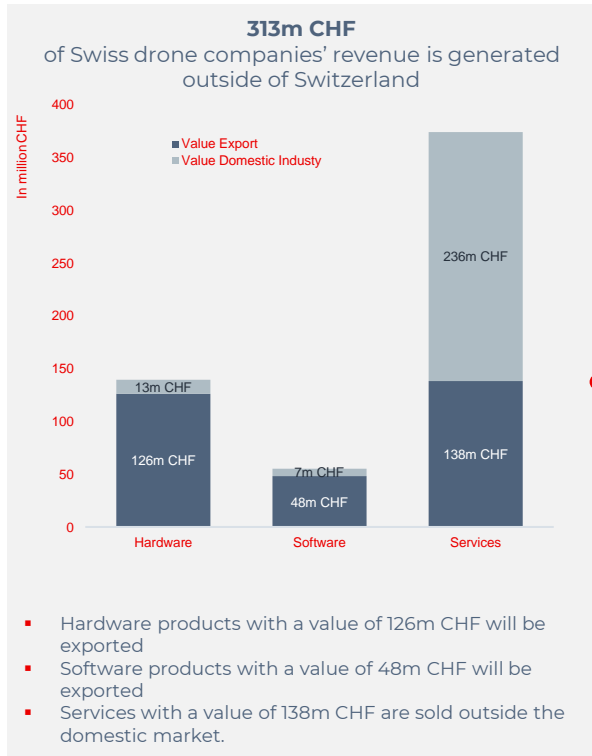
Hardware includes:

- Drone Platforms
- Components and Systems

Observations:

- The Swiss drone industry generated revenue of 569m CHF in 2024. Its value is expected to grow with a CAGR of 7.4% to 871m CHF in 2030.
- Switzerland's hardware segment will grow most strongly (8.8% CAGR), followed by service (7.2% CAGR) and software (5.1% CAGR)

1.11 Swiss Drone Market, Drone Industry, Import, and Export



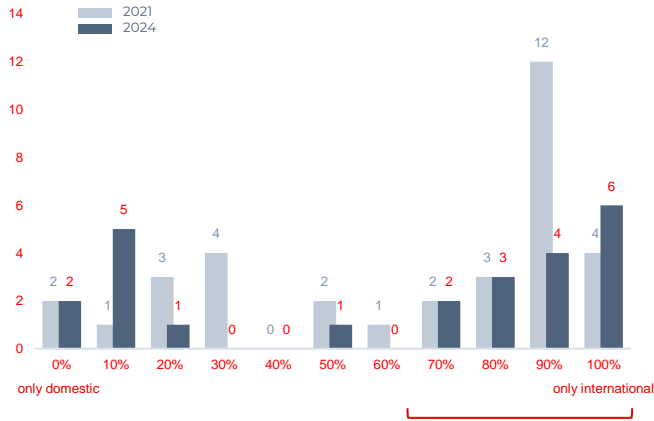
Observations:

- A total of 55% (2021: 45%) of Swiss products and services are exported. Swiss hardware (91%) and software (87%) companies earn money almost entirely outside Switzerland
- Switzerland must import drone products to meet the domestic drone market, especially in the hardware segment (prosumer and recreational drones)

1.12 Swiss Export Details

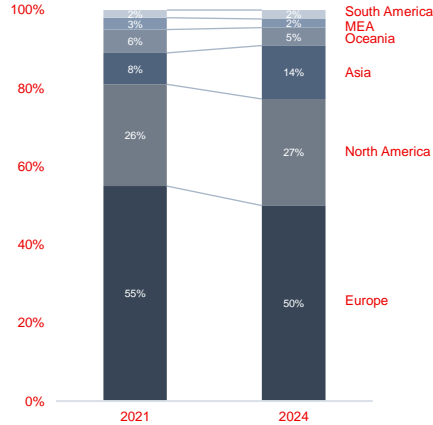
SURVEY
RESULT

Percentage of products/services sold outside of Switzerland (n=24¹)

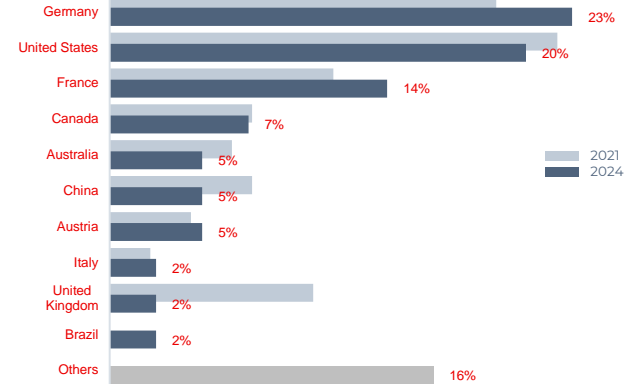


54% of Swiss companies sell all or almost all products/services abroad

Most important export regions (n=18¹)



Top 10 export countries (n=18¹)



Observations:

- Switzerland is an export country with a strong reputation around the world (label "Swiss made")
- Swiss-made, highly sophisticated solutions for commercial and industrial applications are mainly exported to international target markets
- Most exports remain within Europe (mainly Germany, France, and Austria). The most important export country today is Germany (in 2021: USA)
- Many companies develop/produce in Switzerland (a great environment for drone tech) but do not necessarily sell their products in Switzerland (which has a rather limited target market)
- Recreational and prosumer drones are almost completely imported into Switzerland

Content

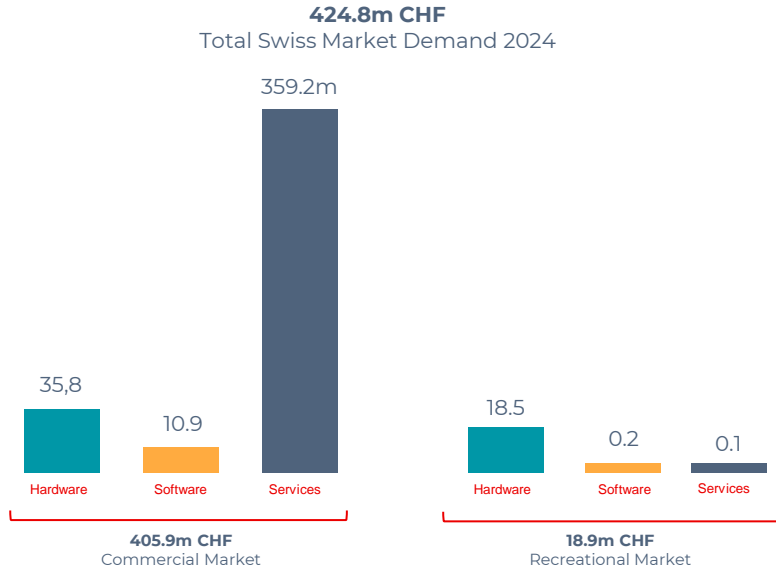
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2.1 The Swiss Drone Market – Summary

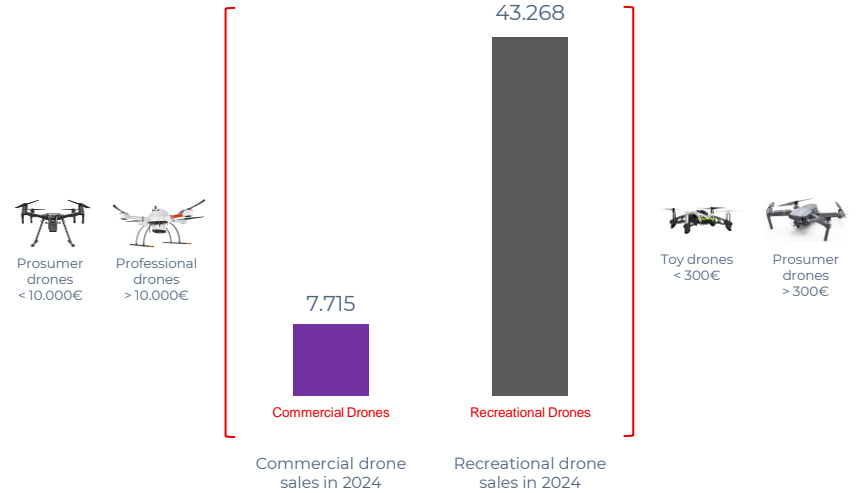
Switzerland's Drone Market and in a global context:

- In 2024, the total drone market size (commercial + recreational) is 425m CHF and will grow to 607m CHF in 2030 at a CAGR of 7.0%
- The Swiss drone market will have a global share of about 1% (1.4% in 2021), which is, in global comparison, the 12th largest market. Switzerland ranks first globally when you look at the market size per capita
- The total drone market in Switzerland consists of a 406m CHF commercial drone market value and a 19 million CHF recreational drone market
- In 2024, almost 60 thousand drones will be sold – most of them (85%) are recreational drones
- Commercial drones are imported or domestically manufactured, whereas recreational drones are entirely imported from Asia (China, Vietnam, Korea)

2.2 Snapshot of the Swiss Drone Market 2024



50.983
Commercial and recreational drones expected to be sold in 2024



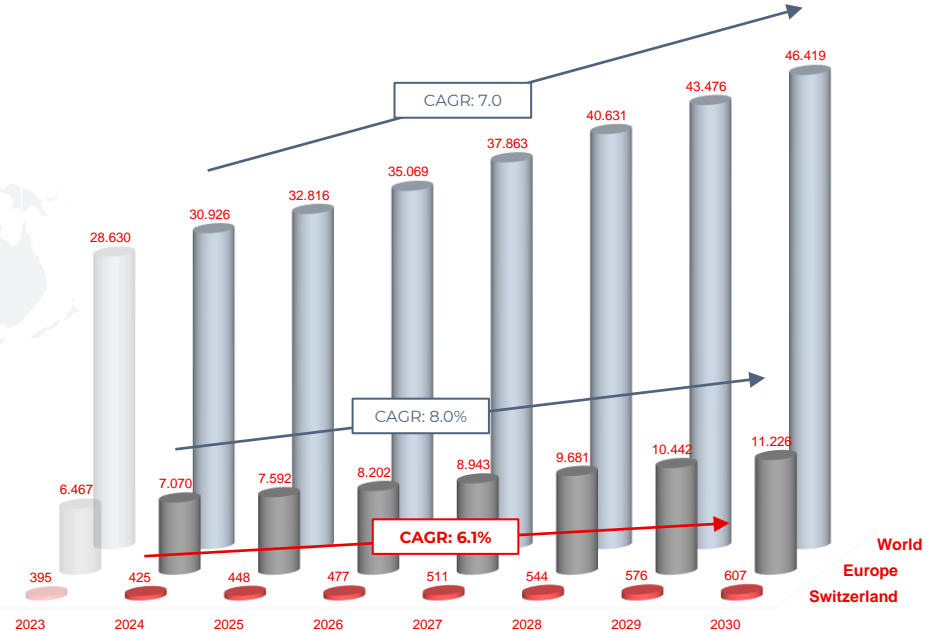
Observations:

- In 2024, the total drone market size (commercial + recreational) is 424.8m CHF
- The market size is defined by the turnover generated by domestic and international providers of drone products and services in the Swiss drone market ("serviceable" market)
- The commercial drone market exceeds the recreational market by a factor of 20
- In the commercial market, Services is the biggest segment compared to the hardware and software segment
- In the recreational market, hardware is the biggest segment compared to the software and services segment
- In 2024, over 50 thousand drones will be sold, and most of them (85%) are recreational drones
- Commercial drones are imported or domestically manufactured, whereas recreational drones are entirely imported from the Far East (China, Vietnam, Korea)

2.3 The Swiss commercial drone market in European and Global comparison



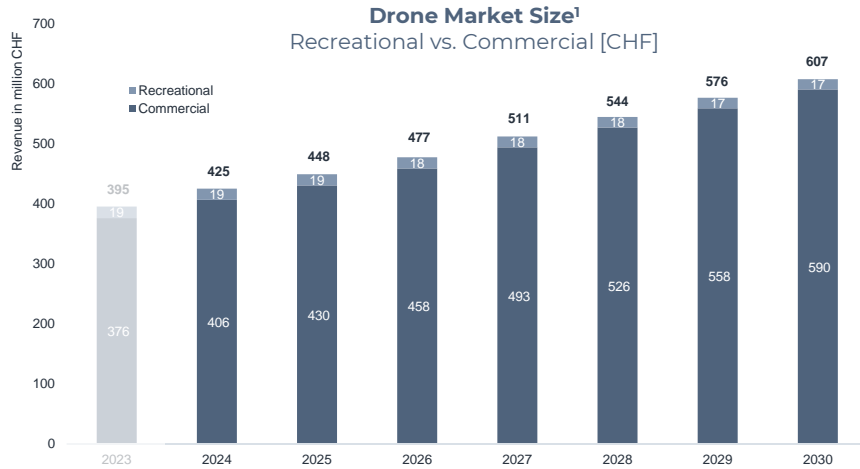
Swiss Market Demand Comparison (commercial & recreational market)
Switzerland vs. Europe vs. World [CHF]



Observations:

- The global drone market demand (recreational & commercial) will grow from 30.9 billion CHF in 2024 to over 46 billion CHF in 2030 at a CAGR of 7.0% – Dominating markets are and will continue to be the USA, China, and Japan
- The European market demand will grow from just over 7 billion CHF in 2024 to over 11 billion CHF in 2030 (CAGR 8.0%) – Dominating Markets in Europe are Germany, the UK, and France
- The Swiss drone market will have a global share of about 1.0% and will grow from just under 425 million CHF in 2024 to 607 million CHF in 2030 at a CAGR of 6.1%
- Changes/advancements in regulation might accelerate market growth, exceeding this conservative approach of forecasting the market size development

2.4 Recreational & Commercial Drone Market by Size and Unit Sales



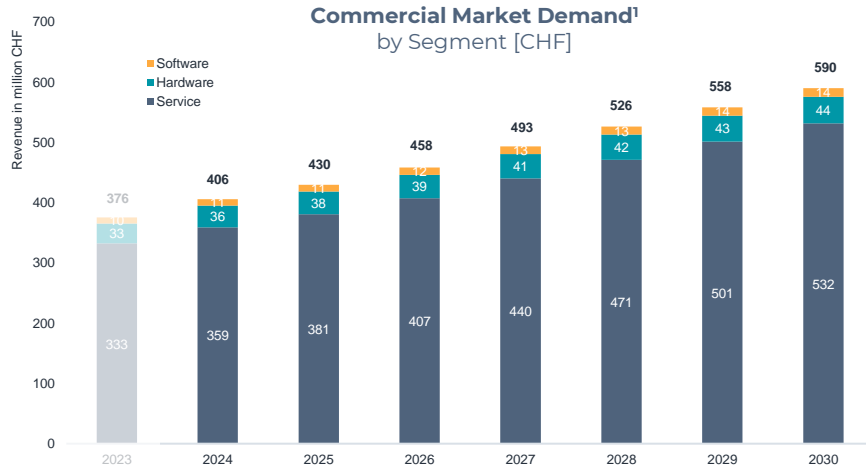
Observations:

- The Swiss drone market is estimated to be just under 425 million CHF in 2024
- From this, 406 million CHF are attributable to the commercial drone market and 19 million CHF to the recreational drone market
- The recreational drone market will experience a slight decline at a CAGR of -1.7%, while the commercial drone market will grow strongly at a CAGR of 6.4%
- In 2030, the commercial market will amount to 590 million CHF and the recreational market to 17 million CHF

Observations:

- The graph above shows the sales figures for commercial and recreational drones in Switzerland. The total number of drones sold in 2024 will be just under 51 thousand and will decrease by 5% from 2024 to 2030 to a total of 49 thousand drones
- The recreational sales segment will decline in the coming years. Overall, the number of privately used drones will decrease by 10% at a CAGR of -1.7% from 2024 to 2030 to 39 thousand drones
- The trend is different in the commercial segment, which is forecasted to continue to grow: From 2024 to 2030, the number of commercially used drones will increase by around 23% at a CAGR of 3.5% to over 9 thousand

2.5 Recreational & Commercial Market Demand by Segment





Observations:

- In the Swiss commercial drone market, the demand for hardware, which mainly includes the drone itself and additional equipment, is equivalent to approximately 36 million CHF in 2024. This value will grow at a CAGR of 3.5% to 44 million CHF by 2030
- The commercial software market is comparatively small at 11 million CHF in 2024. Demand will expand at a CAGR of 4.7% to around 14 million CHF by 2030
- The service market, by far, is the largest segment at 359 million CHF in 2024. This includes, for example, all services provided with drones by all companies in all industry sectors. By 2030, this is expected to grow at a CAGR of 6.7% to over 532 million CHF

Observations:

- The Swiss recreational drone market consists of demand for hardware, software, and services for non-commercial use. Recreational hardware, which consists of toy drones below 300,- CHF and prosumer drones above 300,- CHF is equivalent to 18 million CHF in 2024 and will decline at a CAGR of -1.7% (both hardware and software) to approximately 17 million CHF in 2030
- Drone software for personal use, such as image editing programs for drone photography, accounts for a very small share. The market corresponds to 0.2 million CHF in 2024 and stagnates until 2030
- Drone service for personal use accounts for even a small share. The market corresponds to 0.1 million CHF in 2024 and stagnates until 2030

2.6 Switzerland in Global Comparison (commercial market only)

 Commercial Market Europe			 Commercial Market Europe per Capita			 Global Commercial Market			 Global Commercial Market per Capita		
Position	Country		Position	Country		Position	Country		Position	Country	
1.	Germany		1.	Switzerland		1.	China		1.	Switzerland	
2.	United Kingdom		2.	Norway		2.	USA		2.	Norway	
3.	France		3.	Denmark		3.	Japan		3.	Australia	
4.	Italy		4.	Ireland		4.	Germany		4.	Denmark	
5.	Switzerland		5.	Finland		5.	United Kingdom		5.	New Zealand	
6.	Spain		6.	Luxembourg		6.	France		6.	Singapore	
7.	Netherlands		7.	Belgium		7.	Australia		7.	Israel	
8.	Norway		8.	Netherlands		8.	Canada		8.	USA	
9.	Belgium		9.	United Kingdom		...			9.	Ireland	
10.	Denmark		10.	Liechtenstein		12.	Switzerland		10.	Hong Kong	

Observations:

- Based on data from over 180 countries, a ranking of the largest commercial drone markets in Europe and worldwide was developed - the top three countries combined account for over half of the total commercial drone market
- In absolute terms, Switzerland is the fifth largest commercial market in Europe with 406 million CHF (page 24). Switzerland ranks first in a European comparison when you look at the market size per capita
- In a global comparison, Switzerland is still the 12th largest market. Switzerland ranks first globally when you look at the market size per capita

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3.1 What it means to be Swiss Drone Company – Summary

Being a Swiss drone company

- The excellent living conditions and talent access, as well as the strong government support of start-ups, lead to a good environment to foster innovation
- Compared to the 2021 study, these results are very similar, which means that the overall context (both startup friendliness and challenges) has not changed significantly

Regulatory challenges

- The adoption of the new EU regulations has taken place but continues to pose a challenge (regulatory permissiveness decreased; complex drone operations are harder to approve)
- Most drone companies see a step backward in terms of regulatory permissiveness. This means that the regulations are more difficult for users to comply with compared to 2021
- The regulatory changes are seen as not adequate for most businesses – more progress is wanted
- Even though access to the regulator is already faster than in other EU countries, a more direct and quicker access to the FOCA and overall regulatory certainty are desired. This includes less administration and a more permissive environment to give Switzerland a higher competitive power compared to other countries that follow the EU drone regulation

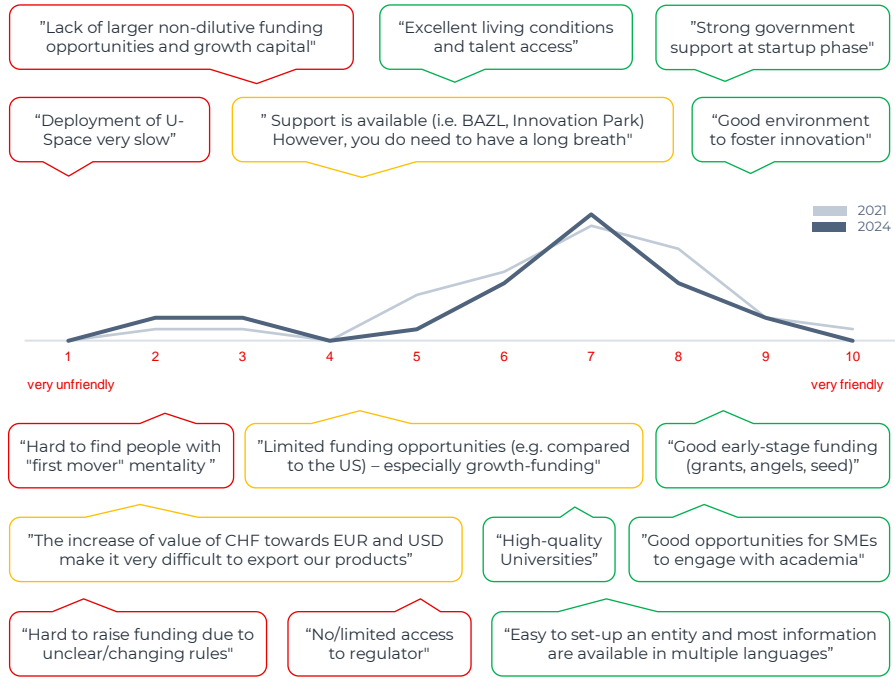
Main Concerns by Swiss Companies

- The drone companies reported limited access to later-stage funding
- Lack of government resources to adequately support emerging industries (long-term contracts)
- Drone products and services are usually sold in EUR or USD – the strong CHF reduces the profit margins of exports

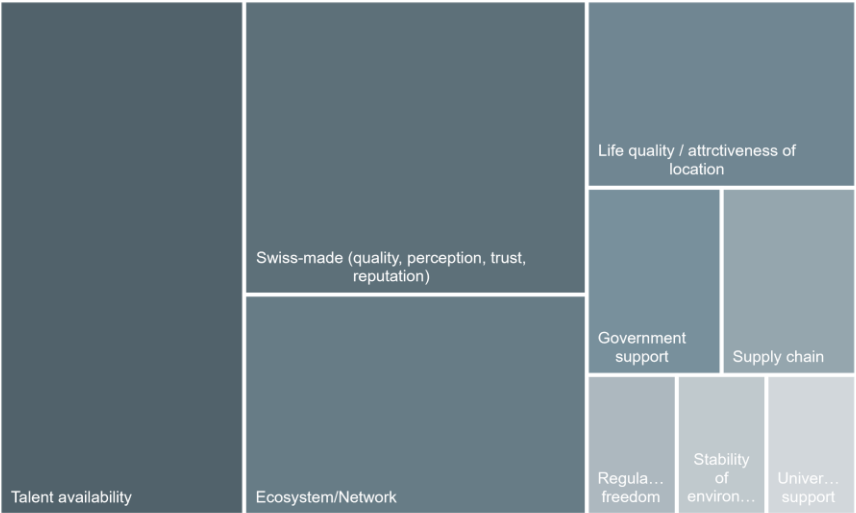
3.2 Startup friendliness and advantages of being a Swiss company

SURVEY
RESULT

On a Scale from 1-10: How startup-friendly is Switzerland (n=28¹)



What are the main advantages of being a Swiss company? (multiple answers possible – n=35¹)



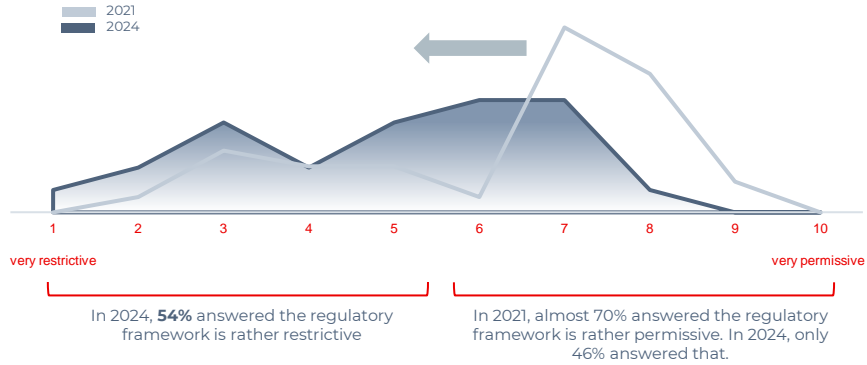
Observations:

- Compared to the 2021 study, these results are very similar, which means that the overall context (both startup friendliness and challenges) has not changed
- There is a slight negative trend as comparatively more negative aspects were mentioned

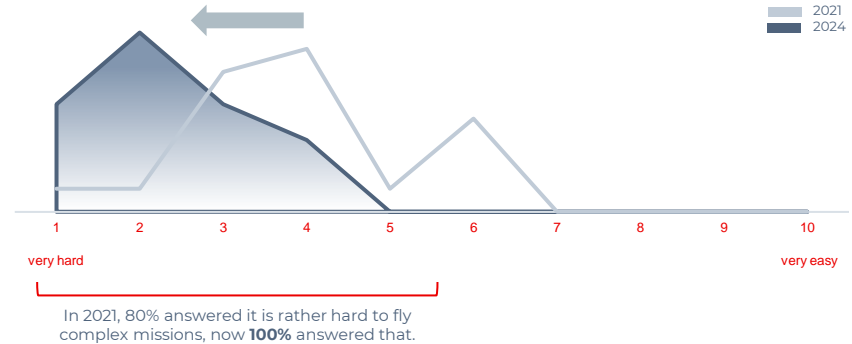
3.3 Snapshot: Current Swiss Drone Regulation (1/2)

SURVEY
RESULT

On a Scale from 1-10: how restrictive/permisive is the regulatory framework to use drones in Switzerland? (n=24¹)



If you operate drones: On a scale from 1-10, how easy is it to fly complex missions (BVLOS, over people, at night)? (n=14¹)



"Very restrictive regulation – especially the regulatory overhead in the Specific Category"

"Unclear guidance and low risk tolerance"

"Big administrative efforts are needed even for low-risk ops"

"Too complicated process"

"The new regulations are very strict, especially for larger drones"

"SORA remains something very difficult to use and obtain"

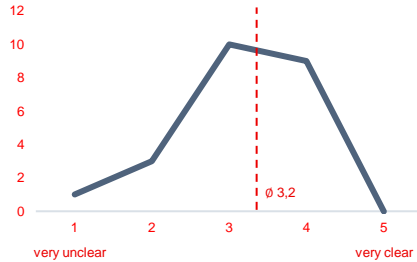
Observations:

- The adoption of the new EU regulations has taken place but continues to pose a challenge
- Next to operators, drone manufacturers also struggle with local regulations to comply with design requirements
- One relativizing factor here is that the regulatory situation is the same for the entire European region – in comparison. However, it seems that Switzerland lost parts of its competitive advantage
- Most of the respondents see a step backward in terms of permissiveness. This means that the regulations are more difficult for users to comply with compared to 2021
- The impact of the changed regulations is most evident in complex drone missions (e.g., BVLOS, spraying, etc.)
- The additional administrative burden leads to a strongly growing service sector of education, advisory, and consultancy

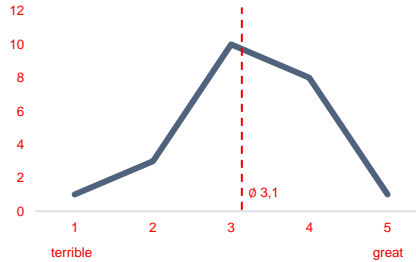
3.3 Snapshot: Current Swiss Drone Regulation (2/2)

SURVEY RESULT

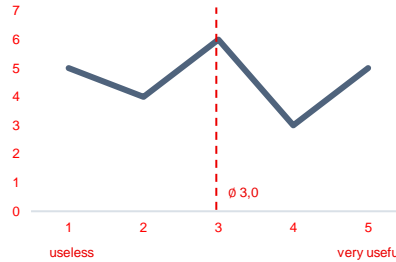
How clear is the regulatory guidance? (n=23¹)



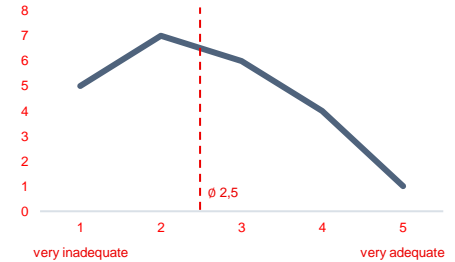
How do you see the adoption of the rule (EU) 2019/947? (n=23¹)



How useful do you see the remote ID requirements? (n=23¹)



Do you see the [regulatory] evolutionary progress over the past years as adequate for your business? (n=23¹)



What is the most important regulatory struggle for your company? (n=21¹)

- "Product certification"
- "Continued adjustments in regulation lead to a more complex legal situation which may deter investors"
- "Getting authorizations within hours"
- "The lack of a proper BVLOS testing area"
- "FOCA access is limited to contact forms"
- "There is still unclarity in key aspects – changes have direct influence on our business model"
- "With the adoption of the EU framework, the competitive advantage for Switzerland is gone"
- "Operational restrictions – especially BVLOS limitations"
- "We experience a lack of progress and a lack of communication by FOCA"

Observations:

- The regulatory guidance - especially for advanced missions - could be clearer
- Even though the adoption of EU rule is controversial, the majority answered neutrally, which means it is not bad but not overly beneficial
- Remote ID polarizes as some see it as useless (often on the manufacturer side), and some see it as very useful (often on the operator side)
- Regulatory changes are considered inadequate for most businesses – more progress is wanted
- A more direct and quicker access to FOCA and regulatory certainty are desired. This includes less administration and a more permissive environment to give Switzerland a competitive edge

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4.1 Development, Outlook & Market Demands – Summary

Market Development

- In retrospect, many businesses did not experience the expected level of success. The regulatory environment, along with geopolitical changes, caused a significant gap between what should have and did not materialize
Though not as hopeful as they were three years ago, most people are rather positive about the future
- Larger developments (for example, financial or geopolitical) have opposite consequences. Many businesses struggle with funding, supply chain challenges, and currency fluctuations, but others either saw no influence or were able to capitalize on these developments
- The main challenges for drone technology in the future are funding and regulation rather than its value or efficiency

Swiss Drone Experts Recommendations – The highest priorities are:

- Improve the local partnerships/ecosystem to increase competition and maintain a high proportion of local value creation
- Increase efforts in acquiring additional funding – especially in the growth stage
- Increase collaboration with Governments/ Ministries to support the local industry (e.g., long-term contracts)
- Increase collaboration to enhance operational flexibility (which has been reduced since the EASA framework became mandatory) – To bring back the competitive advantage, solutions should be found with industry and FOCA
- Find timely and appropriate solutions to the current regulatory hurdles

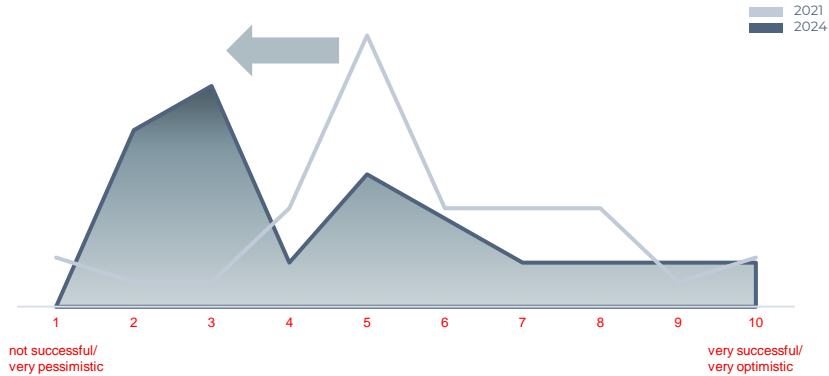
Wishes:

- Part of the survey was asking drone companies how they would use a magic wand. Most "magic wands" are in the regulation sector, like in the 2021 study. It underlines that the existing regulation has the greatest impact on drone companies and that this area has the most need for change
- Even though FOCA is comparatively quick in adopting the EU framework there are general requests for greater transparency and a faster creation of an effective drone operation environment
- Funding requests increased – particularly for growth funding

4.2 Market Development (1/2)

SURVEY
RESULT

How successful were you in the last two years? (n=19¹)

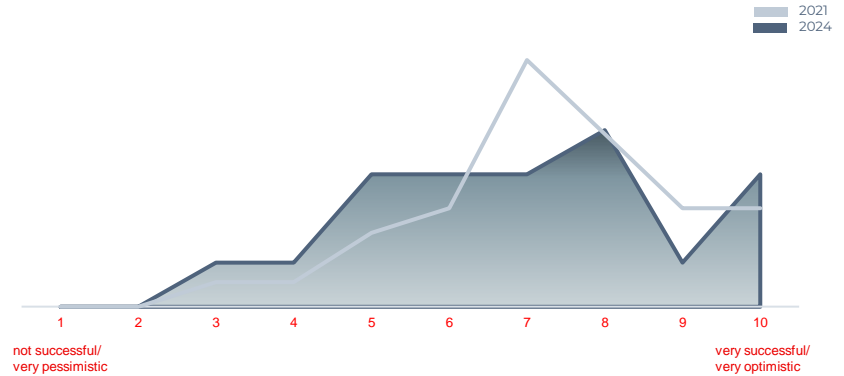


not successful/
very pessimistic

very successful/
very optimistic

68% (2021: 56%) answered the last two years were rather challenging

How optimistic are you for the next two years? (n=19¹)



not successful/
very pessimistic

very successful/
very optimistic

74% (2021: 85%) answered they are rather positive looking forward

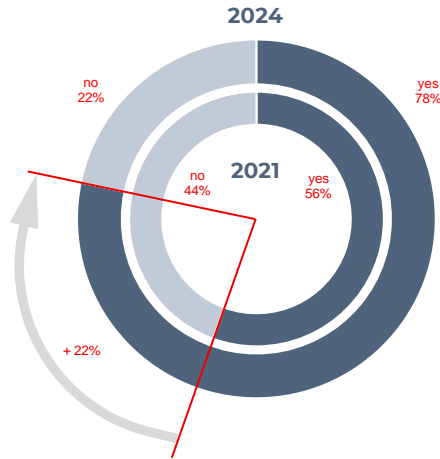
Observations:

- Looking back, the anticipated success did not materialize for many companies. Geopolitical developments and the changed regulatory landscape led to a strong discrepancy in what *should* have materialized and what actually *did* materialize
- Looking forward, the majority is rather optimistic – even though less optimistic than 3 years ago

4.2 Market Development (2/2)

SURVEY
RESULT

Does public acceptance of drones have an influence on your business? (n=23¹)



How did recent events (e.g. COVID, Ukraine crisis, inflation, etc.) affect your business? (n=17¹)

Positive

1. No or only limited effect
2. The tense political climate has increased spending by the government
3. Focus on locally (EU, Swiss-) produced products strongly increased – especially in the gov./military sector – some manufacturers might only still exist because of this

Negative

1. Delayed projects/purchasing decisions by client
2. Delayed company development
3. Strong CHF makes it harder to export
4. Canceled travel, meetings, events
5. Budgets/Investments frozen or re-located
6. Supply chain issues or material shortage
7. Projects put on hold

In your opinion, what are the biggest hurdles in leveraging drone technology? (Multiple answers allowed) (n=18¹)

"Slow rule-making in general. With EU involved, this will now take even longer."

"How to develop a product that will comply with a regulation that does not exist yet?"

"Regulatory transparency and a clear legal framework for the next 10 years."

"Bureaucracy and time to approval."

"Clear economic value proposition."

"Scaling operation while reducing costs."

"Lack of U-Space."

"Funding to handle complex products."

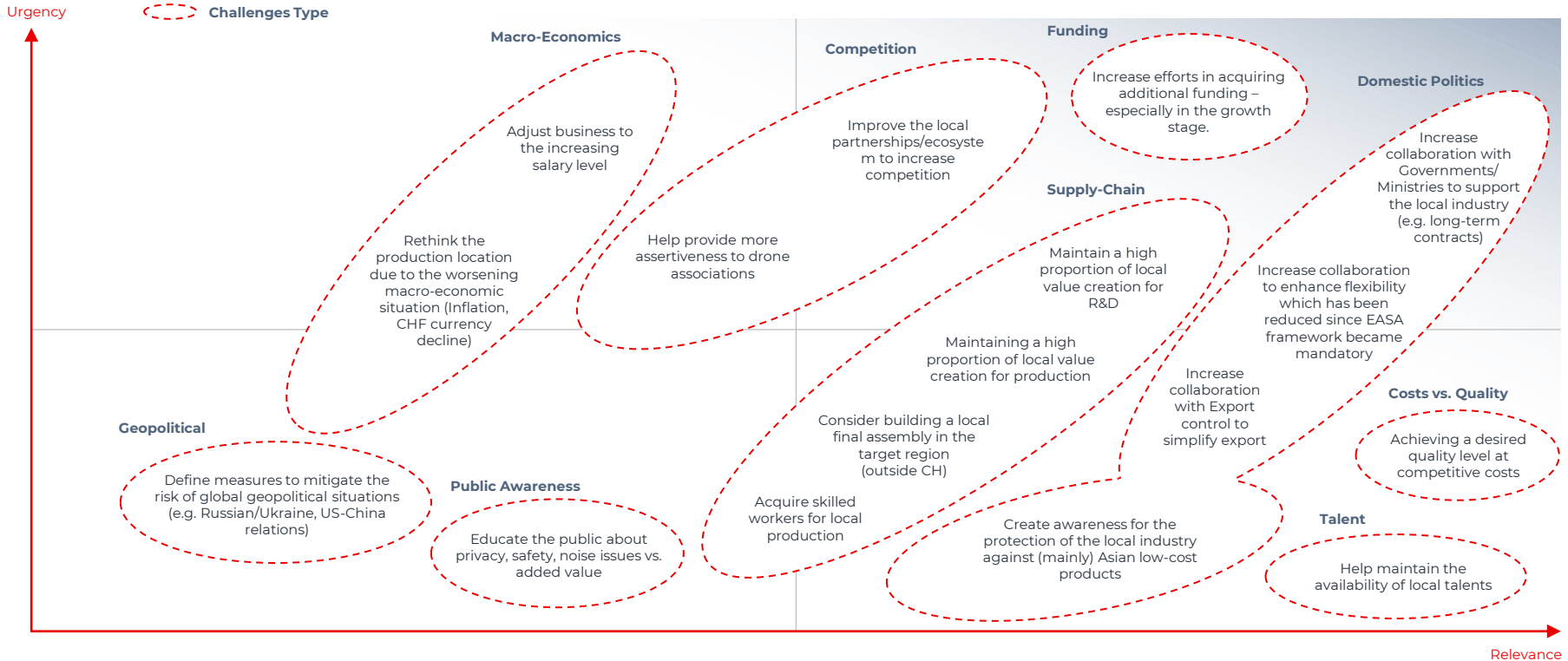
"Fragmentation of the overall value chain."

Observations:

- Public acceptance strongly increased as the number of pilots increased (70.000 registered operators in Switzerland) and drones fly closer to people in an already densely-populated country
- The effects of larger (e.g., financial and geopolitical) developments go opposite. Many companies struggle with financing, supply chain issues, and exchange rates, while other companies either perceive no effect or can leverage those developments
- Interestingly, the biggest hurdles from now on are not related to drone technology – its value/efficiency, funding, and regulation

4.3 Drone Expert Opinions¹: C-level thoughts on prioritizing strategic challenges

INTERVIEW RESULT



4.4 Drone Expert Opinions¹: Drone regulation

INTERVIEW
RESULT

FOCA requires/expects...

 Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

- ... to understand that drones are part of aviation – paperwork (like qualification or design verification) must be in place
- ... to understand that the risk-based regulatory approach increases compliance costs but also increases the level of safety
- ... to understand the U-Space framework as an enabler for a digital airspace which is the basis for tactical risk mitigation
- ... to improve the active communication between the drone industry or associations
- ... more concepts from the industry to help develop standards (e.g. for DAA)
- ... to acknowledge the limited human resources (the SORA applications doubled since 2022), but that FOCA continues to streamline their internal processes
- ... concepts to set up appropriate (location) and democratic (access) testing areas

Current framework

FOCA provided:		Drone Operators understood:
<ul style="list-style-type: none"> Guidance and training material on the FOCA website Preparatory processes (GALLO) for SORA at an early stage Awareness for drone buyers by partnering with drone resellers 	Operation	<ul style="list-style-type: none"> that SORA is the current approval process – even if more complex and administrative than the old GALLO/FOCA process that concerning BVLOS, EASA has caught up very strongly compared to other international authorities
<ul style="list-style-type: none"> Compliance with parliament's interests for privacy/safety within (EU) 2019/947 and (EU) 2021/664 the leading UTM trial system in Europe (SUSI) The initialization of the USSP certification process as one of the first in Europe 	Airspace	<ul style="list-style-type: none"> that a UTM system makes sense in controlled airspace
<ul style="list-style-type: none"> R&D budgets for DAA technology Guidance for design verification 	Design	<ul style="list-style-type: none"> that testing possibilities are limited due to topography and population density that high quality and high safety require a management system

Drone Manufacturers/Operators want...

- ... faster approvals
- ... appropriate design and type certification standards
- ... more freedom of testing closer to own facilities
- ... In uncontrolled airspace, DAA technology shall be sufficient instead of implementing an overregulated UTM regulation
- ... international communication standards (e.g. radio links)
- ... decrease of approval costs in specific industries (low-risk agriculture)
- ... a streamlined stakeholder process
- ... clarity and commitment for cross-border operation
- ... a simplified USSP certification process to reduce costs
- ... reduction of administrative work, because documentation kills innovation

4.5 If you (Swiss drone company) had a magic wand¹, what would it be?

SURVEY RESULT

Observations:

- Like in the last study, most "magic wands" are in the regulation sector. It shows that the current regulation has the biggest influence on drone companies and that the strongest need for action is in this field
- Overall, there seems to be an increased amount of frustration and resentment towards FOCA and EASA
- General calls for more openness and faster adoption of drone tech can be found
- The wants for funding increased – especially for growth funding



Investments and Investors

- "Funding in Switzerland for scaling."
- "Risk awareness of Swiss Venture Capital investors"
- "Investors to go back and invest in drone (operator) businesses"

General Requirements

- "Develop everlasting batteries"
- "Openness to adopting new technology"
- "Accelerate global commercial drone adoption"
- "Give Switzerland full participation right to Horizon Europe & Clean Aviation"
- "Implement a national drone strategy in Switzerland"
- "Weak leadership and very weak initiatives of the Swiss ecosystem (DIAS). Replace the entire DIAS board and re-start the Association"

Drone Regulation

- "Pin down regulation in order to let professionals work"
- "Replace the whole regulatory body of EASA with something simple and complete"
- "A professional permit which allows to fly more freely once acquired"
- "Opening of the FOCA and removal of restrictions for highly professional companies (risk-based attitude)"
- "A more stable regulatory environment"
- "Make rule makers' decisions calibrated to the actual risks and rewards of using drones commercially."
- "FOCA should show itself to be open to new ideas in committees and connections in Switzerland"
- "Extend the EASA open category to all drones up to 25 kg and create a category up to 80 kg (at safe distance from people) incl. practical pilot training"
- "A personnel turn over, having people from the industry working at the authorities and vice-versa"
- "More drone-friendly regulation"

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5.1 SWOT of the Swiss Drone Industry

Strengths:

- Like in the 2021 study, Research & Development, Education/Institutes, and generally good access to talents continue to contribute to the development of the ecosystem
- The location, in general, its stable government, the start-up spirit, and the strong economy are the leading aspects of starting and running a drone company in Switzerland
- A strong local value/supply chain, in combination with local assembly, creates high-quality products
- The label "Swiss-made" continues to be very important – especially as geopolitical developments have hardened the borders
- Swiss-made products/services reached a very high level of technological maturity (in parts World-leading)
- EASA adoption allows Switzerland to be in line with the large European market – increasing opportunity on the one hand and competitive pressure on the other
- Good investment environment – especially in seed and early-stage investments (up to 2 Mio.)
- The strong CHF reflects the economy's high level of competitiveness, political stability, and high degree of legal certainty

Opportunities:

- Sharpening product/service profiles and thinking in "solutions" to increase business prosperity
- Stronger industry collaboration can increase competitiveness
- Increased lobby work of associations to better represent the industry interests
- Further global harmonization of standards (e.g., drone communication requirements) can help streamline production
- More regulatory transparency/stability to allow for building a successful drone business and to attract investors (e.g., blueprints of high-quality application examples)
- Better/proactive communication by drone companies will help to clarify misunderstandings and shorten administrative processes
- Stronger joining the dual-use market to compensate for the lack of commercial market adoption
- Governmental long-term contracts can help start-ups bridge the current lack of funding
- To give Switzerland back its competitive edge, very quick administrative processes can help facilitate the use of drone technology, leading to higher adoption and investments

Weaknesses:

- Macro-economic developments might harm Swiss drone companies (high-interest phase, inflation)
- Drone products and services are usually sold in EUR or USD – the strong CHF reduces the profit margins of exports
- Production costs are too high and might lead to companies becoming unprofitable
- Lack of (urgently required) later-stage investments (>10Mio)
- In some cases, there is a too strong focus on technology instead of scalable and sustainable business models
- Lack of test sites for drones and eVTOLs
- Other aviation segments are better organized to address/enforce their position
- The regulatory guidance (especially for advanced missions) could be clearer
- Expensive and lengthy 3rd party involvement to receive operational authorization
- Lack of approved notified bodies (e.g., training organizations) and published standards for compliance for medium and high-risk operation

Threats:

- Continued negative macro-economic developments (e.g., inflation, devaluation of the CHF to USD and EUR, increasing salary costs, etc.) might further increase prices for products/services to a point where the margins are not substantial enough
- Increasing salary costs will decrease local production (move production elsewhere)
- A lack of protectionism might lead to a loss of talent and devalue the local production
- Competitors (e.g., from China) can put Swiss drone companies under strong(er) pressure
- Unbalanced management/prioritizing of governmental resources for drones and eVTOLs can lead to either of these sectors stalling
- "Talent poaching" from other industries or other countries
- Lack of public acceptance might stop the Swiss drone industry from flourishing (e.g., noise, and privacy issues)
- A continued lack of local investments will lead to drone companies failing, incl. a loss of IP
- If the current regulation continues to lack permissiveness (strict regulation and administrative burden), companies/talents will seek other markets/regions

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About DIAS

- The Drones Industry Association Switzerland (DIAS) represents, supports, and promotes its members who export drone-related products and services from Switzerland. DIAS embraces the safe use of drones and seeks to accelerate their acceptance and adoption. Founded in 2015, DIAS counts over 50 member companies active in the fields of hardware, software, and services in the drone industry.

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DIAS Members





Thank you

www.droneindustry.ch