The turbulent 2020 taught iFarm how to become resilient and succeed in adverse circumstances

2020 taught us how to succeed even when everything is not going as planned. Let's look back at iFarm's major achievements of the last year to build on them in 2021

There is no need to say that 2020 was a truly unprecedented year. We had big plans for spreading iFarm's technology worldwide, yet when faced with the lockdown and travel restrictions, we had to rethink the plans. Looking back, we can say that it was a fruitful year for iFarm despite all the turbulence. Our revenues increased by 85%, we raised millions in new investments, became the best AgTech startup in Europe, and significantly improved our vertical farming technologies. Before getting down to hard work in 2021, let us share key iFarm's achievements of that challenging year.

Demand for iFarm's vertical farming technology grew more than 5-fold

The coronavirus pandemic has revealed how vulnerable the global food industry is. The pandemic disrupted supply chains and made it extremely hard for labour migrants to

travel to work on farms abroad. This changed the way the world sees vertical farming. While previously such farms were used to supply the market with fresh produce all year round, in 2020 they became a crucial element of the global effort to ensure food security. This resulted in a growing demand for technologies that allow growing vegetables, berries, and greens locally.

In iFarm, we felt the increased demand, too. In April 2020, the number of applications to buy vertical farms based on iFarm technologies doubled compared to January. In August, it increased fivefold, reaching 800 requests a month, without a single ad campaign.

In 2020, we also managed to expand the physical presence of iFarm vertical farming technologies. We opened a showroom in Helsinki, a farm in Irkutsk, and two production lines on an industrial-scale salad factory in Moscow. Furthermore, we cut deals for 50 new projects, implementation of which will start in 2021. Among them, vertical farms for airlines, hotels, large corporations, retail chains, international research laboratories (in Switzerland, Israel, etc.), and private entrepreneurs. In total, we received more than 1500 requests from 87 countries. The revenue from all iFarm's products increased by 85% in 2020 as compared to 2019.

Raised $4M in investments and attracted almost 700 potential financial partners

One of the main milestones of 2020 for us was the $4-million investments that iFarm attracted to further develop its automated indoor farming technologies. The round was led by Gagarin Capital, which had previously invested in the project. Other investors include Matrix Capital, Impulse VC, IMI.VC and several business angels. The funds were used to advance the iFarm Growtune software platform: improve farm management tools and expand the range of crops available for growing with the platform, including conducting new experiments with vegetables and berries.

2020 also became an effective year for developing the financial tool that we use to scale-up iFarm technologies worldwide - project financing through a group of private individuals. Under this scheme, individuals invest directly in the farms and receive a stable income from the grown produce sales. In 2020, this financing instrument was used to build an industrial-scale salad factory in Moscow. 17 investors with a total investment of 1 million Euro partnered to build the facility. Overall, in 2020 we received 696 requests from individuals to invest in one of the farms powered by iFarm's technology.

To make it easier for the financial partners to track revenues and ROI, we introduced a “Financial Partner’s Control Centre» widget in the iFarm Growtune app. This feature shows the essential yield and sales statistics, helping to monitor the return of funds invested in a farm, compare targets with actual profits, and analyse market indicators of production.

iFarm became the Hottest AgTech/FoodTech Startup in Europe and received many other awards

Last year was very rewarding for iFarm in terms of expert recognition and brand visibility. iFarm was included in the TOP500 FoodTech startups in the world and was named the Hottest AgTech/FoodTech Startup in Europe, according to the Europas Awards 2020. In addition, iFarm topped the Indoor Farming category at the AgTech Breakthrough Awards and was shortlisted in the World Retail Awards.

iFarm joined the Association for Vertical Farming and several other initiatives (e.g. Bridge to Food Association, Leaders for Climate Action, Impact Collective Program, and Impact Index) that aim to make agriculture more environmentally sound and sustainable. We participated in the EIT Food Acceleration Network and X-Europe Startup Acceleration programs, as well as partook in numerous conferences, which this year went all online.

These are just a few of our activities in 2020. All in all, we took part in 34 international competitions, accelerators, conferences. Such events and awards helped raise iFarm's profile globally and stimulated a greater interest in our technologies. While in 2019 we had to initiate meetings to spread the word about iFarm, this year 99% of clients were reaching out to us themselves.

Acquired 4 new patents on engineering solutions that make iFarm's vertical farming

technology more efficient and profitable

Our engineers and agronomists are in continuous search for solutions that increase the yield of crops grown through iFarm technologies. Last year, we obtained four patents on innovations that contribute to that: innovative pallets, a mortar unit, an advanced control system for it, and a dehumidification system that reuses the water evaporated by farm plants. These technologies enable us to improve the efficiency and productivity of vertical farming. The dehumidification system, for example, reduces a vertical farm's water usage by fivefold compared to a traditional hydroponic greenhouse.

According to our tests, another promising engineering solution, developed by our R&D team in 2020, is the lamps with a new spectrum, which can increase the yield by 5-25%. In 2021, we plan to build an installation that accurately selects the appropriate light spectrum for each crop in real time (so far it took 2-3 growth cycles before the optimal spectrum could be defined). So, let's hope for another patent in the new year!

Additionally, we revamped our mortar unit, making it suitable for growing any type of crops. For example, the unit used for salads, now also can be used to prepare a nutrient mix for, let's say, strawberries or any other crop that we could not even think of. The unit

was tested in an internationally recognised laboratory and received a certificate of conformity with the EU regulation.

Introduced neural network tools for crop management and numerous other enhancements for iFarm Growtune app

Forced to stay home during the lockdown, we invested a lot of effort in advancing iFarm Growtune, our online platform for automated vertical farming. In 2020, we added a number of new cutting-edge features in the app, making the first steps toward transforming it into a super app, i.e. a large ecosystem offering the most sought-after indoor farming tools.

As of December 2020, iFarm Growtune offers 158 plant growth recipes that provide users with elaborate guidelines to grow different crop varieties within a precisely predictable timeframe. On top of that, we upgraded the instruments that allow farmers to create their own plant growth recipes. In 2020, our developers also significantly improved Growtune's features for production and performance analytics and integrated them with a new AR-app that helps farm operators to accurately complete checklists for crop management.

iFarm Growtune was integrated with a few neural network tools that make the process of crop management on vertical farms more effortless. The first such tool assesses the plants' health by a photo; the other monitors the plants' weight using external cameras. Cameras are installed on drones that fly between shelves and inspect the crops. The third neural network tool was added to our standalone module for growing greens iFarm Cropper. The technology identifies empty spots on the shelves, counts them and sends the data to the nearest farm to automatically generate a new order for the produce. This neural network tool helps manage the module's microclimate remotely, keep track of the greens in stock, and generate task lists for workers.

In 2020, we learnt how to integrate iFarm Growtune with third-party vertical farms. Such farms already operate in Hungary, Australia and Switzerland. Moreover, we started

testing iFarm Growtune for managing a traditional greenhouse complex. This can be an additional promising area for our company's growth.

Laid the groundwork for launching the industrial technology for growing berries

Our engineers from the Pilot Production department created a solution for dense strawberry planting and halved the cost of shelving. In December, we started constructing a strawberry farm with an area of 273 m^2, which will house ~ 7000 berry bushes. We expect to have the first tasty harvests from there by the summer of 2021.

Our agronomists from the renovated experimental laboratory achieved a Brix sugar index of 18 degrees for strawberries of the Italian variety Delizzimo (on average, the Brix sugar index for a good ground berry is about 13 degrees). The yield per bush was ~ 1.15 kg.

Among other significant “strawberry” events in 2020 were the use of bumblebees for pollination of berry plantations, as well as the development and launch of our own seedling department. After 2.5 years of experiments, we have learnt how to grow berries using the frigo technology (frozen rhizomes come from international nurseries), from strawberry whiskers, using seeds and even by cloning.

Conducted numerous experiments with vegetables

We advanced in understanding how to organise space and nutrition for liana-like plants, such as cucumbers. It was an interesting experience considering the variety is not adapted for vertical farms (seed producers are just starting to move in this direction). We grew several tomato harvests as well as hot and sweet peppers. Cucumbers, tomatoes and peppers turned out to be delicious, but we have not yet made their growth economical (in general, vegetables are not grown on a full photoculture). So we will continue to work on this in 2021.

Also in 2021, we will complete experiments with radishes to assess how promising it is to introduce radishes into our portfolio of crops available for cultivation. There is a lot of interest in it, retailers are ready to buy bundles of radishes along with green tops. Demand especially grows in winter, which is understandable. The taste characteristics of the radish obtained in the iFarm laboratories are amazing: they are juicy, moderately spicy, crisp and reminiscent of spring.

It was for the radish that we first took the approach where a different set of pallets were added to a standard herb rack. You can use such a "constructor" from ready-made components for other crops, which will make it easy to change the purpose of farm parts and start growing different types of plants.

Improved the cost-efficiency for growing greens, added 15 edible flowers

In comparison with berries and vegetables, the growth cycle for salads and herbs is quite fast: 5-10 days for microgreens, 20-22 days for young plants of the size of baby leaves and 28-35 days for adult plants. Therefore, in 2020 we conducted 800

experiments with green crops in laboratories, reached a good cost of salads and microgreens, and also increased yields by 30% for a number of crops in demand on the market.

As for edible flowers, we renovated the laboratory and learnt how to grow 15 plant species (viola, violet, borago, cornflowers, electric flower, etc.). For some crops, such as stevia or rosemary, we use cuttings, and we also grow plants in large flower pots: they can be placed in the kitchen and used in home cooking, picking leaves for fresh meals or drinks.

Automated the process of building farms and learnt how to do this remotely

Unable to travel during the pandemic, we needed to rethink how we build our vertical farms and learn to do this remotely. And we did that! We came up with a modular scheme for assembling our automation system. We documented all its parts in detail so that external contractors can manufacture them anywhere in the world in a short

time. Thanks to that, now we can more easily ramp up many iFarm farms and build them faster. It made us more resilient and adaptive to unforeseen circumstances beyond our control.

Last but not least, our team grew bigger and became more tight-knit

We are happy that during this uncertain time our company was spared from layoffs. On the contrary, our team grew from 70 to 93 people in 2020. Ensuring the health and wellbeing of each team member was the number one priority for us. After introducing new support measures for the employees in case they fall sick, we were conducting numerous tests, reimbursing treatment costs and patiently waiting for everyone to return to work.

In spite of all the challenges, we can conclude that 2020 was a genuinely fruitful year for iFarm. It made us stronger and proved that we can succeed even in adverse circumstances. We would like to thank all the employees, clients, investors and

partners for the support! Let's build on the achievements from 2020 and make 2021 even more productive ❤️

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