

Fish Farmer

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Serving worldwide aquaculture since 1977

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WELCOME TO WESTERBISTER

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10 years in Orkney

LIKEWISE TO GROW

Stewart Graham on bringing all
stakeholders on board

WINDING TRUST

Make farms more accessible
to the public says the SSPG

INNOVATION GAME

Best of the start-ups pitch
their ideas to investors



Kamahu offer a SAASy Solution



Innovative farm control software for aquaculture

A young and innovative new start-up based in Brittany, France is developing new Software as a Service (SAAS) solutions for the aquaculture industry. We caught up with their CEO Killian Delorme to get the lowdown on the company:

Could you describe Kamahu and the service it offers?

Kamahu is an independent Breton start-up. We conceive and market innovative farm control SAAS solutions for the aquaculture industry. Our service aims at tracking and monitoring the activities of farms, and giving a forecast for the production. In 2012 we conceived what was probably the first SAAS solution in Europe dedicated to fish farming. We opted at that time for the most recent technologies available. We were looking to find a solution for six trout farms who had to do some data consolidation each weekend working with spreadsheets, to gain an overview about forthcoming production. The forecasts were proving to be wrong a few days later as the fish did not grow as intended – errors were frequent and the operators all found the exercise boring! With no IT team and lacking money to invest in hardware, we advised them that cloud computing offered the best solution. We have been improving the systems ever since.

What are the core functionalities of the service?

The service goes through remote, multi-site, multi-user, multilingual and real time reporting and data-consolidation. We provide performance analysis, easy and full traceability for everyone on every device, automatic alerts, checking of the specifications of the retail industry, remote visibility of the feeds stocks and so on.

The service is based on web and opensource technologies. Different user profiles and rights are managed through the service. This specific management platform or workflow, going from data entry forms (movements between the tanks, weight samples, feedings, and mortality) to generation of dashboards and charts, is thus dedicated to the daily control of fish farms.

Among the three core functionalities we find performance monitoring first: through real time input data from remote farms and using historical data, the service draws up production reports and controls the performance of a fish farm during a period chosen by the user (real biomass gain, growth and mortality curves, feed efficiency etc. and a comparison with theoretical values).



The distribution of the lots in commercial classes allows the performance monitoring of each raceway or batch. Business planning then come in. The business planning is embedded into the service and is updated with the farms data (persistence, weights, progress etc.). A sales book and the consolidation of the exploitation expectations allows the salesforce to master the incoming production volumes through business categories, weeks and farms or in a consolidated view.

Traceability is the final third core functionality: the service allows the user to ensure full traceability and meet the requirements of the food-processing industry (movements, food fed, mixing lots, pigmentation, immunization coverages, treatments and persistences).

What have been your key success factors?

User-friendliness is the main word (our users are our best salespeople!): it's easy to use, intuitive, flexible and reliable. Security, reporting and support are all well appreciated too. We are a small team of highly qualified IT-engineers and we can adapt the service quickly to specific needs. But user experience remains the heaviest judge.

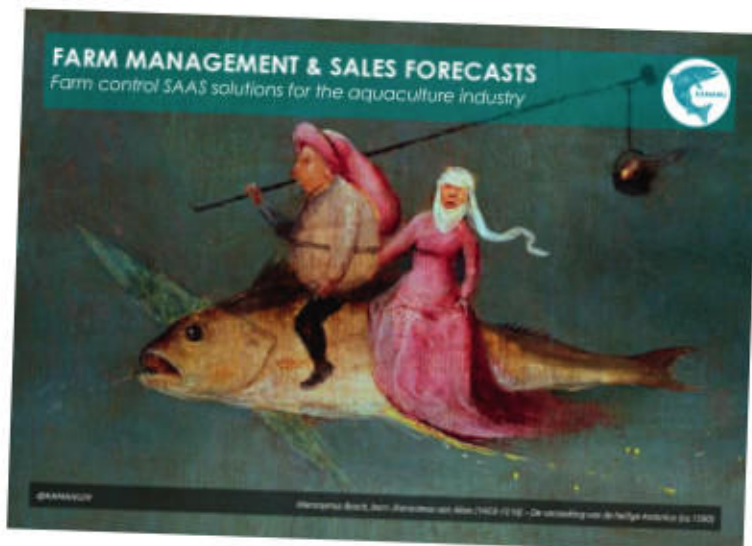
Who are your customers?

Most of the users are European independent inland fish farmers. And a few of them farm multi-species on non-connected sites! We target groups and marine farms too and are currently editing fitted solutions to their needs. Other aquaculture markets will be addressed next year, and we hope to gain new users on other continents.

Which problems are you trying to solve?

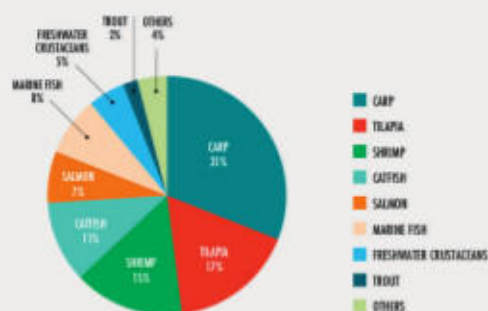
The service serves as an interface between

Above: Xxxx. Left: Xxxx.
Opposite: Xxxx





SHARE OF CONSUMPTION OF TOTAL AQUACULTURE FEED BY SPECIES GROUP, 1995–2015 (%)



SOURCE: Updated from Tacon, Hovson and Marlow, 2011

“User-friendliness is the main word.... intuitive, flexible and reliable”

the farmers and the processing industry; some functionalities can be shared in order to enhance communication and better integrate the way the information is shared. We observe business combinations around fish plants; they need consolidation of data (fish stocks, feeds stocks, consolidation to better deal with the providers, etc.). The marketing within the retail industry makes traceability essential and the ability to react quickly is a key factor. Global groups and scattered farms generate real time remote reporting needs. And forward sales cannot be relevant without reliable planning and appropriated tools.

What projects are you currently working on?

We recently switched to a specific so called ‘Big data IT-architecture’ in order to collect data from sensors and to do machine learning. Our aim is to provide specific feeding tables and growth predictions for each site-configuration (temperatures, feeds, genitors etc.), with the smallest chance of digression, which is always hard with live stocks. As the first users can now rely on six years worth

of data, we’ll be able to run specific algorithms and analyse if we can get something relevant out of them.

The Region of Brittany in France granted us the opportunity a few months ago to push forward our innovative initiatives for the aquaculture industry and we’ll present the results next year. Apart from this, we have been working on special reports to analyse the performance of the farms in some specific contexts. And we would like to get in touch with an automatic feeding system provider to couple it to our platform.

Finally, how do you see the next few years?

Integration and collaboration will be the main themes. Integration through IoT with new innovative materials like connected fish graders, weight samplers, sensors, automatic feed dispensers, RAS facilities that need smart monitoring and so on, and collaboration with experts on new services like computer vision, artificial intelligence, data science, new vet protocols, genetics and bioinformatics. Feed producers and aquaculture consultants will gain from this as they won’t have to collect data before being able to analyse it! We think that the collaborative environment will help to adapt the solutions and could speed up the future growth of the sector that needs to feel reassured. And by starting from €50/month while keeping it simple, it seems obvious to us that such services will replace all spreadsheets everywhere in a short time!

You can find out more about the company by visiting www.kamahu.com 

USER EXPERIENCE & CLOUD COMPUTING

Form control SAAS solutions for the aquaculture industry

