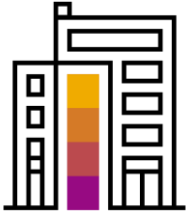




SAP® Innovation Awards 2020 Entry Pitch Deck

Sustainable cultivation of healthier food for the urban population
&ever GmbH (former Farmers Cut GmbH)



Company Information

Headquarters	Hamburg, Germany
Industry	Food / Ag-Tech
Web site	https://www.farmerscut.com/

We lift Indoor Vertical Farming to a higher level to provide locally grown, pesticide-free greens to the urban population in a highly sustainable and productive way.

Fresh greens today have a very bad CO2 balance. An average of 2,400 kilometers lies between the growing area and the plate on which they are served. On their journey, they also drastically lose nutrients. And so that the consumer is supplied with visually perfect products, 2.5 million tons of pesticides are used annually.

That's why &ever is radically rethinking agriculture. We combine the benefits of the best local farms with advances made possible by technology to grow, produce and harvest food in the city centers of the world's largest metropolises. Compared to other cultivation technologies, our system, called Dryponics® is in the lead when it comes to space and water savings, automation and optimal plant growth.

Technology helps us to get the most out of natural resources by constantly optimizing our production processes and recipes based on historical data and predictions - making us an intelligent enterprise.

Sustainable cultivation of healthier food for the urban population



&ever GmbH



SAP technology enables us to revolutionize the food supply chain by bringing farmhouses closer to the customers in the biggest cities of the world.

Dr. Jan-Gerd Frerichs

Challenge

Providing urban people with fresh greens while reducing the consumption of natural resources at the same time. Our mission is to revolutionize the agricultural landscape for specific regions by building vertical indoor farmhouses in the largest metropolises of the world.

Solution

Develop a software solution that enables untrained people to run a vertical indoor farm via SAP Fiori Apps. From seeding to harvesting and shipping. Implement Leonardo machine learning services to constantly optimize plant recipes and energy consumption.

Outcome

- A fully automated production process, utilizing natural resources in a highly efficient way.
- Less CO2 emission, healthier food for the urban population (more nutrients, less pollutants)



90% Less water consumption

60% Less fertilizer

0% Pesticides



Participating Partner Information



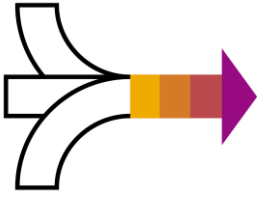
IBsolution GmbH

Implementation, Service Partner & Innovator



IBsolution was able to provide us with a solution that perfectly met the needs of a start-up like &ever. Low implementation efforts and costs for a solution that's highly scalable and grows with the business.

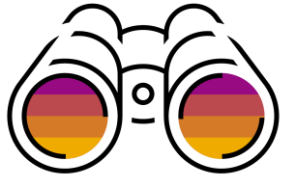
Dr. Jan-Gerd Frerichs, &ever GmbH



Business Challenges and Objectives

- Automated indoor production of greens in the major metropolises throughout the world
- Highly efficient use of natural resources (esp. power and water) in order to reduce costs and save the environment at the same time
- Standard processes that can easily be adapted to local needs and regulations
- Learn from historical data how to optimize production process and recipes
- Use predictions for forecasting and in time delivery of fresh goods

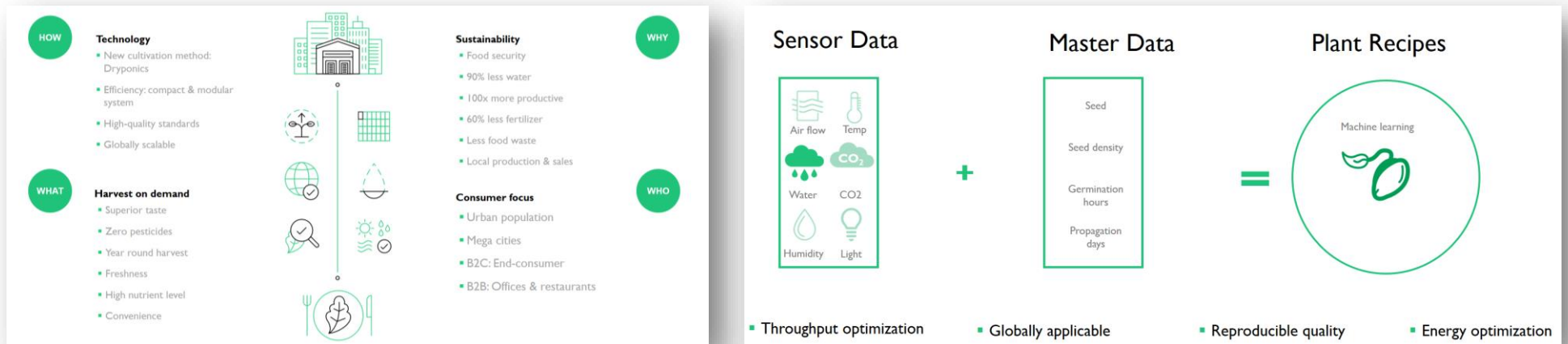
- Build a highly scalable and flexible solution for up to 800 farms in approx. 20 countries to manage the entire supply chain of fresh greens - from seeding to growing, harvesting, and shipping.
- Integrate machine learning to constantly optimize recipes
- Deploy a solution that allows untrained people to run an indoor farm



Project or Use Case Details

&ever needed a software to run an automated end-to-end production process for greens “from farm to fork”. Untrained people should be able to run the farm with a mobile app that uses algorithms and heuristics to cultivate the plants according to our highly efficient cultivation technology called Dryponics.

Numerous sensors provide information such as humidity, CO2 saturation, lighting conditions, air flow and current temperature to an SAP HANA database where the sensor data is combined with master data of different plants like the best seed density, ideal germination hours, propagation hours and others. Intelligently combining these data sets enables &ever to optimize the output of their indoor farms. SAP Machine Learning algorithms make sure, that the plant recipes are constantly optimized to further reduce the consumption of natural resources by improving the capacity of the farm at the same time.





Benefits and Outcomes

Business or Social

Sustainable and environmentally friendly production of fresh and healthy greens.

- Using existing real estate located in city centers
- By growing greens at optimized efficiency with having a fully automated, modular and climate-controlled setup
- 90% less water compared to traditional farmhouses
- 60% less fertilizer
- 0% pesticides

IT

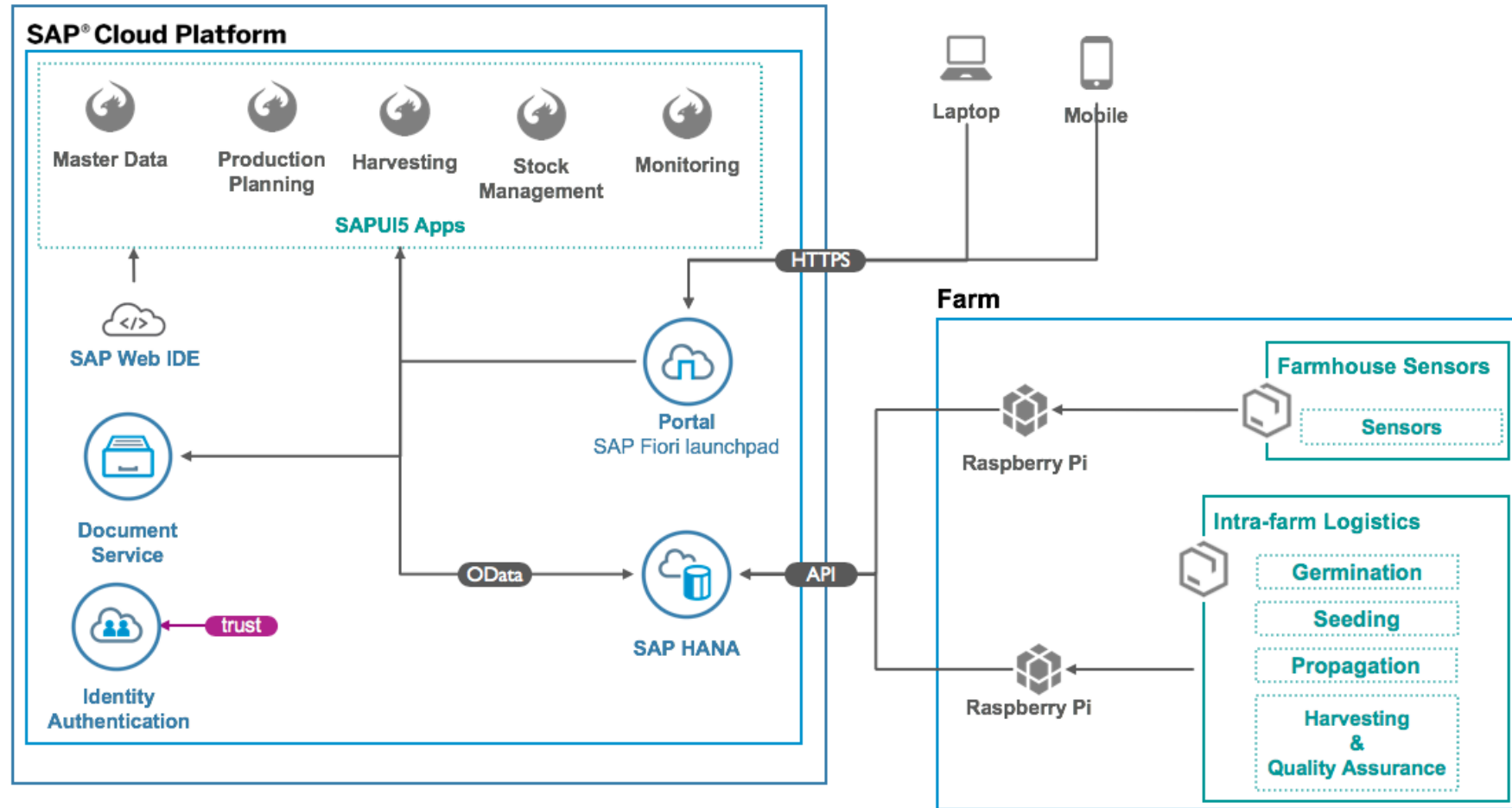
- Automated management of fully automated indoor vertical farm with easy to use Fiori Apps
- Continuous improvement of recipes based on data provided by sensors and ERP

Human Empowerment

Easy to use Apps with a perfect UX, allow for the management of the entire supply chain from seeding to harvesting and just in sequence shipping to our customers even by untrained people.



Architecture





Deployment

Deployment status Live

Date Sept. 2018

Number of users 10

SAP technologies used:

	SAP product	Deployment status (live or proof of concept [POC])	Contribution to project
1	SAP Cloud Platform	live	Supports our global approach in production planning, delivers a scalable solution that is flexible and allows us to comply with regional regulations
2	SAP HANA	live	Effectively supports our production planning and execution and stores many thousand datapoints per day and farm that are necessary for just in sequence delivery and for optimizing our recipes
3	Cloud Portal Service	no	
4	SAP Fiori	live	Easy to use UI for safe farm operations by untrained workers in rural regions
5	SAP Leonardo Machine Learning	Planned	Increase yield by automatically optimising plant recipes and cultivation practices based on farm performance parameters

If you have used one of the services or support offerings from SAP Digital Business Services during the implementation or deployment phase, please select with one or more of the following offerings:

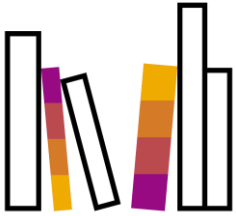
- | | | |
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| <input type="checkbox"/> SAP MaxAttention™ | <input type="checkbox"/> SAP ActiveAttention™ | <input type="checkbox"/> SAP Advanced Deployment |
| <input type="checkbox"/> SAP Value Assurance | <input type="checkbox"/> SAP Model Company | <input type="checkbox"/> Others: |
| <input type="checkbox"/> SAP Innovation Services | <input type="checkbox"/> SAP Innovative Business Solutions | |



Advanced Technologies

The following **advanced technologies** were part of the project.

	Technology or use case	Yes or No	Contribution to project
1	3D printing	Yes	Irrigation interfaces were perfectly adapted to local requirements
2	Blockchain	(No)	Planned in 2020 for tracking the whole food chain
3	Internet of Things (IoT)	Yes	Various sensors, innovative climate control and fully automated control of intra-logistics
4	Machine learning or AI	(No)	Planned in 2020 to further optimise plant recipes
5	Conversational AI	No	
6	Robotic process automation	Yes	Automated seeding and process preparation by cobots
7	Data anonymization	No	
8	Augmented analytics	No	



Additional Information

- <https://youtu.be/osRTDTPmsdA>
- <https://www.youtube.com/watch?v=wPsM7LtyLxQ>
- <https://www.ibsolution.com/ibsolution-und-farmers-cut>
- <https://youtu.be/yhQ-P0dlu4E>
- <https://youtu.be/dLsLtAJcqQ>