



Purveyance Profile

Project Name: Purveyance
FIWARE Accelerator: FInish
Grant Funding: March - November 2015
Level of Grant funding secured: €150,000
Target Sector: Agrifood

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Vision and Market Need

Purveyance is a big-data quality management platform for the fresh produce industry supply chain. It provides digitised solutions that support traceability, compliance and product quality from the grower, with tools to facilitate the addition of information from relevant stakeholders at each stage in the supply chain. This facilitates reduction in waste and increases financial returns for growers. It supports real-time analysis of the supply chain in terms of what quality related defects are causing waste, which growers are affected and what produce is most effected. The forecasting tools support pro-active management of both quality and risk assessment data.

The vision of creating a cloud-based tool which leverages data analysis to reduce waste across the supply chain is based on over 15 year's sectoral experience and a MBA Thesis focused on analysis of quality reporting in the fresh produce sector.

Purveyance provides smart phone applications to support data collection (e.g. growing, packing, logistics, produce status on delivery) as well as desktop tools to support efficient analysis and management of supply chain quality performance and compliance requirements for different target markets.

The market need for a data driven product that facilitates necessary exchange of key information between different stakeholders in different countries was identified based on produce sector market experience (specifically in the area of quality management), analytical research and engagement with stakeholders including Agrofair, Westfalia and Donnelly Fruit and Veg.

Target Market and Revenue Streams

Purveyance's primary clients are exporters of fresh produce (particularly bananas, citrus, apples and berries), while secondary market clients include importers, retailers and insurance companies involved in the produce supply chain.

Purveyance is targeting 900 exporters as clients over the next five years, or 5% of the 18,000 existing exporter businesses around the world (based on research from www.Frucitidor.com – leading fresh produce supplier magazine).

Revenue streams are based on an annual subscription model related to the size of the farm's production unit. For example, fair-trade growers and producers with less than 2 ha pay an annual fee of €10, while larger commercial farms pay €100 per annum.



Competitive Positioning

The Purveyance solution provides a complete assessment of quality performance from the pack house through to the end consumer. Functionality supports digital traceability, data analytics, risk forecasting and compliance management services. It is currently the only solution which provides a wide range of services with easy access to all supply chain stakeholders using the platform. The unique selling proposition is that all supply chain stakeholders can use the data analytics service on a common platform, which is not currently available in the marketplace.

Direct competitors mainly focus on either the production or the importer side of the business. These include Muddy Boots, QC One and Qualitracker. Table 1 below illustrates that Purveyance offers more functionality than other market offerings and highlights that none of these other solutions cater for both production and importing:

System supplier	Incorporates whole supply chain	Uses smart device technology	Risk Forecasting	Users outside of paying organisation can input data	Quality specific	Measures compliance	Big data reporting ability	Integration possible with other systems
Purveyance	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Muddyboots	No	Yes	No	No	Yes	No	No	Yes
Prophet	No	Yes	No	No	Yes	No	No	Yes
Ecratum	No	Yes	No	No	Yes	No	No	Yes
Tradle	No	Yes	No	No	Yes	No	No	Yes
Dipar	No	Yes	No	Yes	Yes	No	No	Yes
Paltrack	No	Yes	No	No	Yes	No	No	Yes
In House developed	No	No	No	No	Yes	No	No	No

Table 1: Purveyance Competitive Positioning

Purveyance can currently provide the following services through the use of smart phone applications for data entry and the desk top services for analytics and maintenance:

- Data analytics
 - Waste calculation
 - Trend analysis
 - Reporting on pallet, lot, product etc.
- Full grower database management (compliance)
- Digital traceability for producers
- Reduced set of quality management functionality tailored to the needs of importers
- Quality forecasting
- Quality positive release at the point of packing
- Loading services and positive release of containerised shipping
- Allocation / request of third party intervention where there are disputes on quality
- Importation of data logger information to complete full quality reports

Enabling Technology

The overall enabling technologies being used to create and support the Purveyance platform include PHP, MySQL, Memcache/ Redis on Linux Centos and FIWARE Enablers.



FIWARE provided access to tools and Generic Enablers (GE) to support product development. Purveyance leverages the following enablers:

- *Big Data Analysis - Cosmos*, which is used to process data collected and stored during the lifecycle of the products import/export process. It is integrated with a reporting tool to support planning, optimising and generating forecasting capability. Using Map Reduce functionality pallets information is aggregated to present reports (trends) for various fruits/ fruit varieties.
- *Object Storage GE* is used to store high quality images collected in the monitoring process in a scalable, high availability, distributed environment. This is a fast and simple way to access a large amount of images stored hierarchy. Images are acquired from mobile devices, uploaded in low and hi-res (bandwidth wise) for each of the three quality checks.
- *Orion Context Broker GE* provides a publish/subscribe interface that the app is using to store pallet information in a context “environment”, to react when some events occur by sending alerts to appropriate stakeholders
- *Identity Management GE* handles the identity management credentials for accessing various elements of the Purveyance app.
- *FiSpace’s Wirecloud* gathers data from Context Broker and presents data in a widget published on the FiSpace platform. The widget shows the industry’s waste for various fresh fruits/varieties, for the requested market, for a given month.

The core business of Purveyance is to offer data analytics of the supply chain to stakeholders. Diagram 1 below provides detailed insight into what quality defects are causing waste:

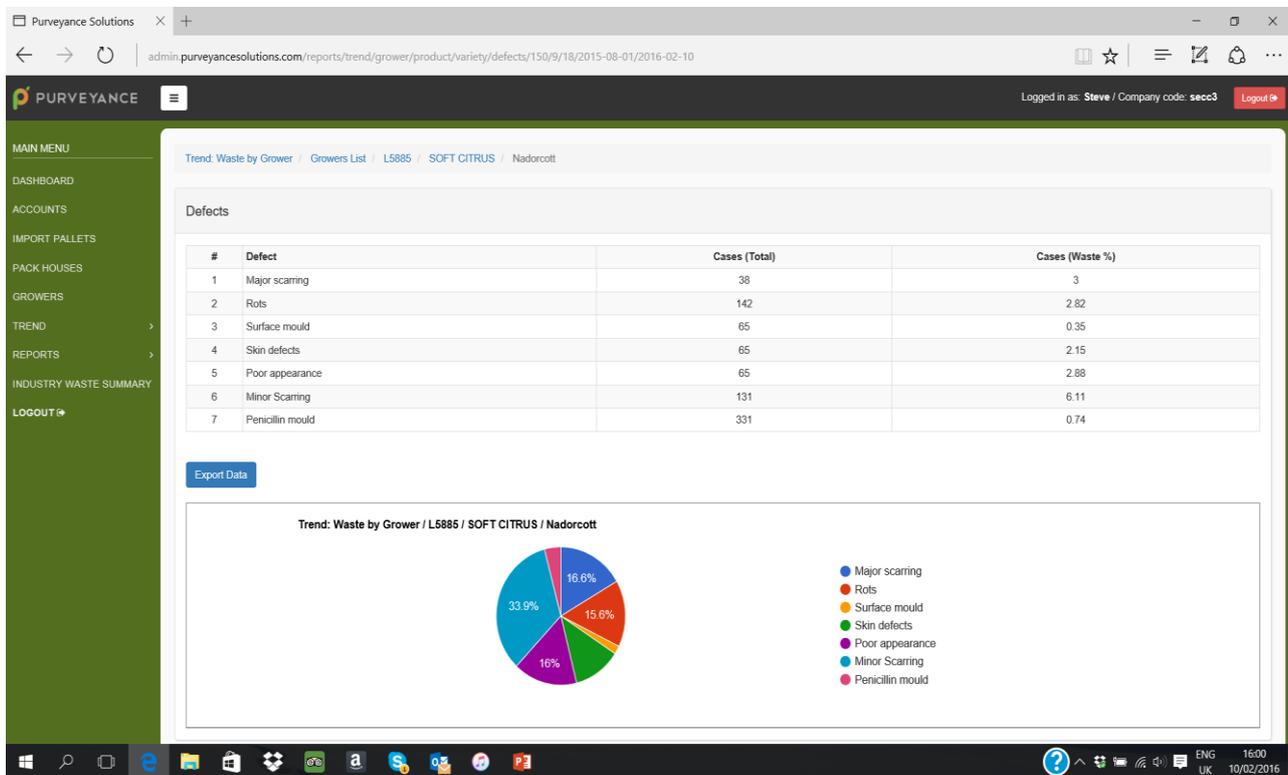


Diagram 1: Purveyance insights into quality defects causing waste



Purveyance FIWARE Case Study

March 2016

This detail provides the grower with a clear understanding of their risk and allows them to make specific changes to their production methodologies to reduce the risk of waste, based on robust data from their customers.

Other functionality of the system includes management of compliance requirements through the smart database. Diagram 2 below shows the account of a farmer who has uploaded their compliance data into the system.

The screenshot shows the Purveyance web application interface. At the top, there is a navigation menu with options like MAIN MENU, DASHBOARD, ACCOUNTS, CERTIFICATES, SETTINGS, TREND, REPORTS, and INDUSTRY WASTE SUMMARY. The main content area displays a 'Certificates list' table. Above the table is a filter section with a dropdown menu for 'Category name' set to 'all categories', and buttons for 'Apply filter' and 'Reset'. A legend below the table indicates that red rows are expired and yellow rows will expire in 30 days. The table has 8 rows of data, with rows 2, 3, 4, 5, 7, and 8 highlighted in red, and rows 6 and 7 highlighted in yellow.

#	Name	Issuer	Number	Valid until	Issue date	Document	Date added	Action
1	Globalgap	SGS	123456789	Jan 06 2017	Jan 07 2016	Download	2016-02-10 14:08:34	[Action]
2	Spray records	Farm	1/12/2015	Jan 09 2016	Dec 09 2015	Download	2015-12-16 07:36:46	[Action]
3	Spray records	Farm	1/10/2015	Dec 01 2015	Oct 01 2015	Download	2015-12-16 07:34:45	[Action]
4	Water	Farm	789456	Jan 01 2016	Dec 01 2015	Download	2015-12-04 13:19:15	[Action]
5	Spray records	farm	1/12/2015	Jan 01 2016	Dec 02 2015	Download	2015-12-03 12:48:49	[Action]
6	FLO cert	FLO	12345678911	Feb 18 2016	Jan 13 2015	Download	2015-12-01 14:14:44	[Action]
7	Tesco Nurture	SGS	20/NC10/76623/13	Mar 18 2016	Apr 15 2015	Download	2015-12-01 14:13:31	[Action]
8	Global Gap	SGS	12345678910	Jan 20 2016	Jan 20 2015	Download	2015-11-11 16:43:09	[Action]

Diagram 2: Purveyance Management of Compliance Data

The system facilitates easy management of data by highlighting which records or certifications are within the approved dates and which are not. It also provides automated notifications when these certificated have expired (highlighted in red) and a month prior to the “valid until date”. This really helps to ensure that the important certification milestones are not missed by the growers.

Trend analysis is equally important for the exporters so that they can assess the quality of their grower base. Diagram 3 below offers an overview of the performance of the growers so that the decision makers can focus on supporting growers who are not performing well. This aids better efficiency of technical staff in dealing with improving growers' performance, thus increasing the value and efficiency of their service to the growers.

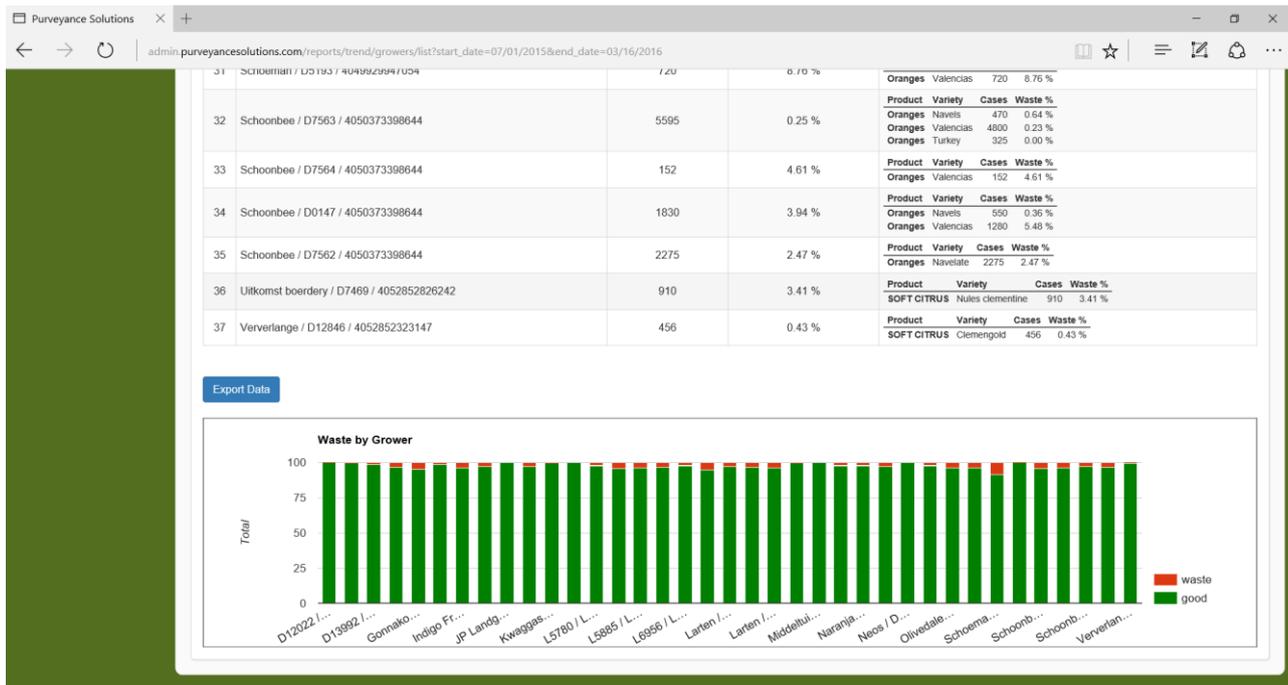


Diagram 3: Purveyance - Grower Performance to aid decision making

Progress to Date

Purveyance Ltd was founded as a result of a MBA thesis in this area in 2013, with an initial prototype created in March 2014 to gain end-user feedback from key stakeholders in the produce supply chain. Purveyance secured a FIWARE Grant under the FInish Accelerator as part of the FI-PPP Phase 3 Programme to develop the application, and started developed the platform from March 2015.

The platform was officially launched at Fruit Logistica 2016 in February. Initial customers have been secured with a good conversion rate following a one-month free trial period. Purveyance is currently developing distribution channels with potential partners working closely with exporters (e.g. packaging providers, temperature data loggers).

Short term plans include the development of complimentary tools to support the supply chain in terms of training, communication and farm management.

Purveyance secured a feasibility study grant (€14,000) and High Performance Startup Unit (HPSU) status with Enterprise Ireland. Initial seed funding has been secured and Purveyance is currently completing first round funding. Future investment will support tool enhancement, development of new tools and marketing and sales activities.

Purveyance secured the Innovation Award at Fruit Logistica 2016 and a branding award for their website.