Le génie pour l'industrie

Laboratory report

Laboratory number	Laboratory **3**
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Session	A22
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I- IT Metrics Service

Service Name

Harvest dashboards

Value provided

According to the ITIL definition, value is the perceived benefit, usefulness and importance of something. This service fits that description.

Indeed, the addition of this service is useful and important since it allows for a better analysis of continuous improvement. In fact, the data collected by the various sensors allows us to obtain relevant quantitative data that allows us to analyze problems and raise possible avenues for optimization.

Thus, customers who subscribe to this service will have access to more data and according to the GIGO principle (garbage in, garbage out)[1] these same customers will therefore be better able to provide products in greater quantity and of better quality. This advantage gives them an edge over competitors in the market.

Description of the service

The service offered would allow customers to subscribe to additional services following the purchase of the Sami. Indeed, the sensors already present on the machine allow to build a more than detailed dashboard.

The user could then authenticate on the Sami website[2] in order to have access to several graphs, matrices and details about the harvests performed by the machine. The various data that can be collected by the machine are illustrated in the underlying section.

Features

- Quality of current crops compared to previous years
- Number of harvests per season
- Dimensions of harvested products
- Percentage of land covered by the machine
- Cost savings related to employee reduction and productivity rate
- Land quality compared to a general database
- Time required for harvesting
- Number of non-compliant/compliant harvested products

All the metrics collected can be compared to the competition, according to a desired period, but also to general data such as standards.

[1] What is garbage in, garbage out (GIGO) ? - Definition from WhatIs.com (techtarget.com)
[2] SAMI 4.0 - CULTIVATE THE REVOLUTION (lapalmeagtech.com)

For example, a producer would be interested in comparing the productivity of his crops with previous years. In order to compare himself to other producers, he might need to know the size and quality of his products. Based on this, he could adjust his production methods to offer more quality to his customers.

Users

Fruit and vegetable producers who are willing to meet the following conditions:

- Have purchased the robot
- To be paying a cloud subscription depending on the consumption
- Have an internet connection to access data in the cloud
- Have registered the system

Hour of service

The metrics services are accessible at any time 24/7 thanks to cloud hosting. This is provided that the machine is connected to the internet to be able to send the metrics. Maintenance hours are once a month, from 00:00 to 2:00.

Service level

The service level is assumed by the cloud service. Since the dashboard's service hours are 24 hours a day, the service level agreement offers an availability rate of 99.5%. This rate was chosen because it allowed for a service to be available most of the time while ensuring a lower billing to the customer whose service is not essential to the operation of the machine.

Support and documentation

IT support is essentially available during business days following SAMI 4.0 business hours. Even if the metrics viewer is unavailable for 1 day, the company will not necessarily be impacted. This is why the service does not offer 24/7 support.

The documentation of the service is available on the following link:
https://lapalmeagtech.com/services/metriques/documentation

It includes the following points:

- Product registration in the cloud
- Help on connecting to the cloud
- Help with data visualization

Application procedure

1. Make contact at services@lgcm.ca
2. Discussions could lead to an interview to personalize the needs
3. Consultation and visual on the possible dashboards to be set up
4. Completing a survey to customize metrics and cost savings
5. Maintaining communications

Service Manager

Éric Lapalme, President[3]
Simon Bélanger, Business Development Director

Support Services

SAMI 4.0 cloud hosting service. Contact us at the following address: servicecloud@lgcm.ca

Costs

The costs to use this service are divided in two. First of all, it would be useless to use our services without having first purchased a Sami. So, one of the costs would obviously be to buy a Sami at a cost of between $1M and $1.5M per robot.[4]

In addition, a monthly fee would be required to cover the cloud expenses of the service. These costs would be based on the storage consumed by the application. For example, if the user wants data with a high retention policy, the bill will also be high.

[3] https://lapalmeagtech.com/

[4] SAMI 4.0: the harvesting robot for the harvest in Quebec | CScience

II- IT service robot health status

Service name

SAMI Health Status Service (SESS)

Description of the service

The SESS allows farm operators to have real-time monitoring of RPC equipment in order to increase its performance and lifespan. This monitoring can be done from a computer, a tablet or a phone.

Operating reports will then be generated automatically during the use of the machine in order to better control the life cycle of the equipment. These reports can be consulted at any time and will allow to act quickly in case of failure. They will be shared via a user-friendly interface with farm operators, but also available to SAMI engineers via the cloud, for possible troubleshooting.

Features

- SAMI's geolocation system
- Operating status of RPC equipment
- Wear and tear of RPC equipment
- Monitoring of RPC system failures
- Predict failures from sensor and machine data using AI.
- SAMI Performance Report

Users

The people targeted by SESS are primarily:

- Agricultural operators who will be able to consult the activity reports in real time or later

- The cloud administrator ensures that data is backed up and delivered to stakeholders.
- RPC support and maintenance staff who can respond quickly to operator concerns.
- Engineers who will be able to perform software updates of RPC systems through the operation reports

Hour of service

- Support hours: 6am - 6pm
- Data access time: 24 hours a day, 7 days a week and real time
- Maintenance time: once a month, from 00:00 to 2:00, for updates

Service level

- Review of equipment data in real time and at any time
- 99.98% of generated reports will be saved and shared via the cloud

Support and documentation

Computer support operates as outlined in the "Hours of Service" section.

The documentation of the service is available on the following link:
https://lapalmeagtech.com/services/etatsante/documentation

It includes the following points:

- Product registration in the cloud
- Help on connecting to the cloud
- Help with data visualization
- Help on analyzing data reports
    - Operation
    - Wear and tear
    - Failure

Procedure for requesting the service

SAMI 4.0 support service. Contact us at the following address: soutien@lgcm.ca

SAMI 4.0 maintenance service. Contact us at the following address: maintenance@lgcm.ca

SAMI 4.0 cloud hosting service. Contact us at the following address: servicecloud@lgcm.ca

Service Manager

Éric Lapalme, President[5]
Simon Bélanger, Business Development Director

Support Services

1. Make contact at services@lgcm.ca
2. Discussions could lead to an interview to personalize the needs
3. Consultation and visual on the possible dashboards to be set up
4. Maintaining communications

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The costs to use this service are divided in two. First of all, it would be useless to use our services without having first purchased a Sami. So, one of the costs would obviously be to buy a Sami at a cost of between $1M and $1.5M per robot.[6]

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[5] https://lapalmeagtech.com/

[6] SAMI 4.0: the harvesting robot for the harvest in Quebec | CScience