

# Optimized stocks and demand met

## IRP.AI

IDEAL  
REPLENISHMENT  
PLANNING

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### SOLUTION FOR RETAIL

RESOLUTION TO AUTOMATE  
THE DEMAND ESTIMATE  
AND PRODUCT RESTOCKING  
IN OWN STORES AND  
FRANCHISES

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### SUMMARY

#### BENEFITS

- suggestion of optimized stocking
- accuracy in demand estimate
- chain risks warning
- monitoring interface

#### MORE IMPORTANT:

- optimization of the stock level, reduction of ruptures and improvement in all indicators of the supply chain.



## Introduction

The estimate the products demand flow has always challenged companies of several segments. Consumption trends, competition movements, seasonality, location of stores and regional customer profile, among other factors, influence the sales result and make the restocking planning of the sales outlet is an extremely challenging activity. Regarding the supply chain management, the purpose is to find the balance between available stock and demand met. The demand estimate technology solutions and restocking suggestion are fundamental to achieve such goals.

Tevec developed the first machine learning application platform intended to the acknowledgment of the demand behavior standard of the Brazilian market. The platform automates the whole demand estimate process and the calculation of the ideal products replacement batches in sales outlets, enabling the sales planning control, service levels and regulators stocks optimization. The tool's accuracy results are changing the level of expected results for mistakes in forecasts estimates, stock coverage indicators, losses for expiry date and product rupture in the sales outlet. The platform makes complex operation to work in an agile, automated and optimized manner.

The artificial intelligence (AI) is already inserted in several products we use daily. Humanity already benefits from computer learning models and algorithms without noticing their presence in products and services. However, it is also rare to see applications of this type of technology in decision making of business processes. It happens because deploying a AI model is more than simply performing the mathematical modeling work and is more than simply performing an A/B test with simulation date. In order to deploy a AI model in practice, it is necessary to draft the technology use process and it is necessary to map how the users and people involved in the operations shall receive the model responses.

Such concept of practical application permeates the whole Tevec platform project and especially the IRP-AI. Solution, TEVEC platform solution specialized in the definition of quantities for stores restocking. Since its design, the system was thought to give the users a simple experience when using the complex machine learning models in the management of its supplying chain.

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“The complexity of products, involving releases and season dates always burden the several links of the production chain. The deployment of the IRP-AI Solution provided the CRM Group an opportunity to anticipate demand variations, generating economies in all links of the supply chain.

Fernando Vichi,  
Vice-President of the CRM Group (Kopenhagen and Brasil Cacau)

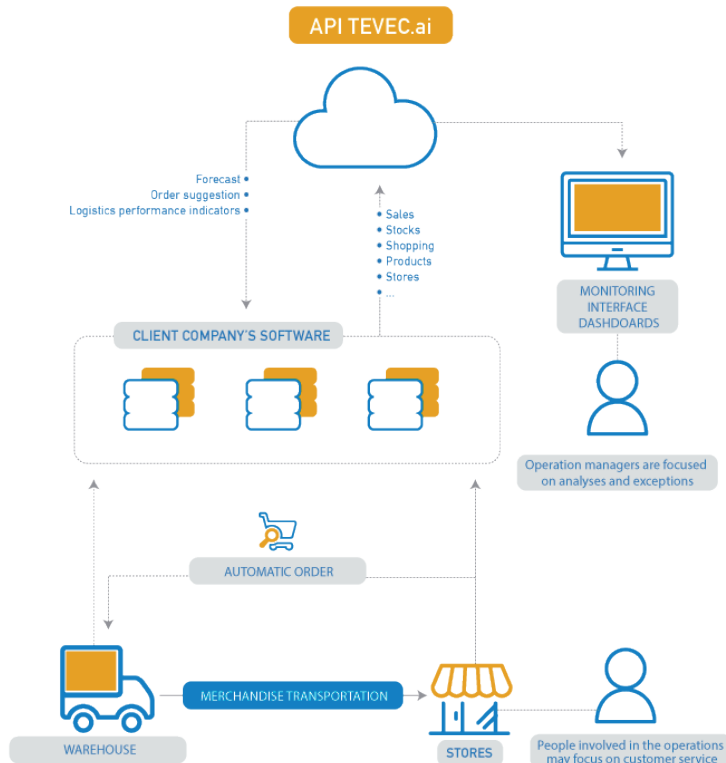


## IRP.AI (Ideal Replenishment Planning)

Specialist solution in mix optimization and products quantities in the sales outlets for each consumption cycle. Restocking quantities suggestion seek to maximize the relation between the revenue and the demand met, minimizing products loss for validity or obsolescence, excess stock and the lost sales by ruptures.

IRP.AI Solution is connected with our clients' company's software, capturing the information of their logistic operation. Based on such information, the system generates the estimates and order suggestions that may be reintegrated in the client's own systems or may be accessed by TEVECs dashboards.

Therefore, the people involved in the operation (stores managers and salespeople) may focus on customer service instead of performing demand and order analyses (which is not their specialty).





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## Warning Signals

The ones involved in the logistic chain management have a view of the potential destocking or excess risks for a proactive attitude in their mitigation.

## TECHNICAL STRUCTURE

IRP.AI Solution uses all sales, stock, prices data and other variables that influence the customer demand, looking at each product in each sales outlet or store. Such data undergo a series of computer cleanout processes and improvement of the data quality, such as virtual stocks identification, identification and removal of extreme observations (outliers), identification of special dates, inclusion of holidays signals, among others.

With the data handled by the platform applies its sophisticated machine learning models in order to identify demand standards. Several models are simultaneously tested in a competition by the maximum accuracy. The model better adjusted, or which better explains a set of data is chosen in order to generate the sales estimates of each product in each store for each replacement cycle.

The chosen model of each product feeds stocks optimization routines that provide back for their suggestion purchase operation and restocking very close to the actual demand of the customers. Therefore, the stores stock are much more suitable to enjoy all customers sales opportunities without an excess stock and waste.

## PLATFORM API

The solution installation is quite simple and quick. Simply connect your system to the platform's API ([docs.tevec.com.br/sirius](https://docs.tevec.com.br/sirius)). Through this API, it is possible to send data to the platform, query enrollments and registrations and more importantly, capture the estimates and order suggestions to be reintegrated to its management and operation systems.

By TEVEC API, the customers use the platform in a seamless manner, returning to their current processes the results of the machine learning models. Therefore, with the minimum alteration in the current processes it is possible to significantly improve the performance of the restocking processes.

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## IDEAL REPLENISHMENT PLANNING

The minimum information for the operation are the products and stores registration, and the sell history (sellout), receipts (sellin) and stock positions. With such information, the solution can execute its processes and deliver assertive order suggestions.

Additional marketing campaigns data, prices strategies and disclosure actions may also be included in the solution, improving even more the system performance.



## SOLUTION RESULTS

The results of the IRP.AI SOLUTION are translated in rupture reductions and stock reductions. The performance of the logistic chains using the solution is way higher than the chains performance working with conventional restocking processes. Cases of rupture cases around 50% and stock reduction of 30% are not rare.

Such results are obtained with the adjustment of mix and quantities that take place with the adhesion of stores restocking t the TEVEC platform suggestions.



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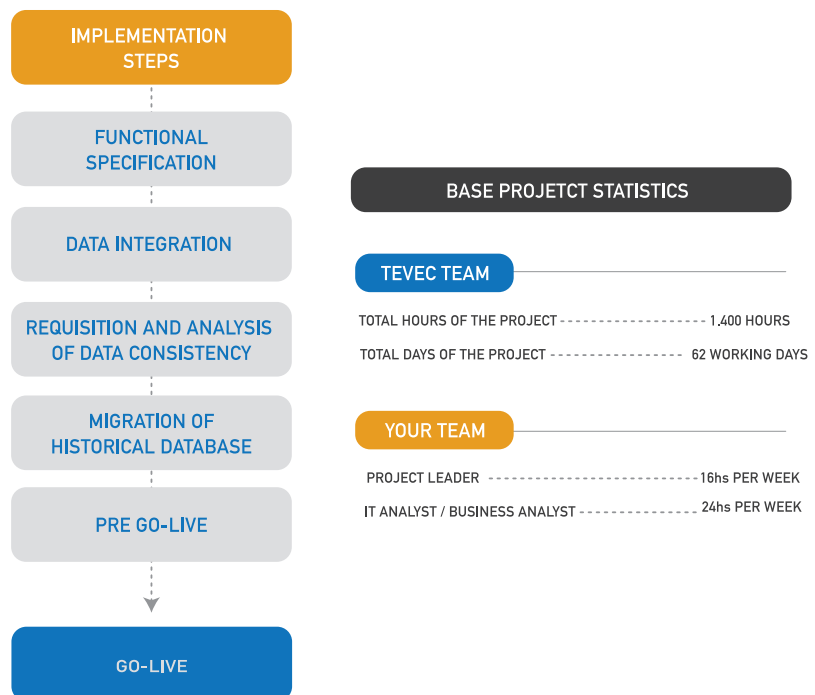
Besides such results, IRP.AI Solution customers observe a reduction of the quantity of stock loss due to expiry date, more available space in their store stock which facilitates the movement and internal store management. Last, the store teams may focus on sales and in the operation once the system look after all of the demand and necessary resupplying analyses.

## Customer Success

TEVEC has the commitment of helping its clients to generate results with the use of the platform. Therefore, we have a customer success process which follows our clients up throughout their journey with out technology, from the kickoff to the daily follow-up of results.

In the kickoff, we make the whole project preparation for the deployment to take place in a more organized and fast manner, careful not the inform all the ones involved in their roles and responsibilities. For an efficient deployment, we recommend that our clients appoint a project leader in order to punctually act in decision making and two part-time analysts.

The deployment project counts on the support of out onboarding team which executes the following activities: functional specification, TEVEC API training, training of the ones involved, support in the construction of the connections in the API and rollout planning.



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After the rollout, our clients count on a continuous follow-up of the customer success team which performs periodic performance analyses with our clients. It is made in order to ensure the continuity of the results of the platform and continuous system and associated processes improvement.

## About TEVEC

Tevec is the provider of artificial intelligence solutions applied to the logistic chains. Tevec Platform was the pioneer in the machine learning application for the acknowledgment of demand behavior standards, automating the whole estimate process and calculation of ideal products restocking batches in sales outlet and in the distribution centers, enabling the sales planning control, service level and regulatory stocks. The platform is changing the level is expected results for forecast estimate mistakes, stock level indicators, rupture losses or products without expiry date.

Tevec mission is to offer the artificial intelligence within the reach of all companies in a simple and accessible manner. In a world of logistic chains increasingly complex and with frequent behavior changes, the companies need precise and adaptable mathematical models in order to obtain results in its productivity indicators.