

Global Bike Go: Explore Procurement (Beta)

This document is intended to support the instructors managing Global Bike Go: Explore Procurement. For this purpose, game parameters, results and mechanics will be discussed in particular.

Product

SAP S/4HANA 2020
Global Bike

Fiori 3.0

Level

Instructor

Focus

Materials Management

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Version

4.1

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MOTIVATION

The learning objective of this business game is to understand and make simple procurement decisions in the form of a supplier selection. Gamification elements are used to improve user engagement and learning success.

The main objective of this document is to support instructors managing Global Bike Go: Explore Procurement. For this purpose, game parameters and round results are explained in particular. Additionally, some information about game mechanics is given.

NOTES

Global Bike Go (Beta) is only available for the Global Bike data set, which has exclusively been created for SAP UA global curricula.

Create Game: Set Game Parameters

Note The following steps have to be performed in order to create a new Explore Procurement game.

Create Explore Procurement Game

After adding any course as described in the **General Instruction**, you can use the button **+ Create Game** to create an Explore Procurement game for it. You will be redirected to the following screen to set the game parameters.

The screenshot displays the 'Create Explore Procurement Game' configuration screen. It includes the following parameters and their current values:

- Number of Companies:** 3
- Initial Stock Amount (0 pc. - 1,400 pc.):** 100
- Exponentially increasing Storage Expenses starting at Stock Amount of (100 pc. - 4,000 pc.):** 1800
- Initial Capital (0 € - 1,000,000 €):** 500000

Set game parameters

The number of companies is inherited from the course and cannot be changed. However, you can set the following values:

Initial Stock

The initial stock level indicates how many raw material sets (for complete bicycles) are available to players at the beginning. This buffer can be used to counterbalance any supply backlogs (e.g. from period 1).

Exponentially increasing Storage Expenses

This value represents the threshold value for calculating the storage costs. It can be understood as the maximum capacity of the warehouse. If this limit is exceeded, high costs are incurred for each additional unit stored. Real-world consequences would be: A new warehouse building, renting extra storage space etc.

Initial Capital

The starting capital indicates how much capital is available to the players at the beginning. The higher the value, the more leeway is given to the players in their procurement decisions. Whereas, if you set any value moving towards 0€, you will challenge the players.

You can set the starting capital using the slider. Alternatively, you can also enter the value via keyboard by using the mouseover function.

For a simple introduction, the given values were found to be optimal in tests. However, they can be changed at any time. As soon as all parameters are setup, the game will be started by pressing the button [Create Explore Procurement Game](#). You will be redirected to the details screen of the created game.



Admin User Interface (Game View)

Note The admin interface (game view) displays all game data. Three tabs separate the view. In addition to the “Information” tab (contains the game parameters) and the “Company” tab (already described in the **General Instruction**), the “Results” tab is now introduced.

„Results“ tab

This tab shows – if available – the results of all companies grouped by rounds. The following information is displayed:

- Company – ID of the respective company
- Storage Expenses – Expense for the storage of raw materials (at the end of the round)
- Raw Material Expenses – Expense for the procurement of raw material in the current round
- Personnel Expenses – Expense due to personnel
- Sales Revenue – Revenues from sold bikes
- Sales Deductions – Decrease in revenue (vouchers for back orders; 500€ per bike)
- Monthly Profit/Loss – Revenues less sales deductions in this round
- Total Profit/Loss – Revenues less sales deductions over all rounds



Player User Interface – Set Input Values

Note This section describes the procedure for players to set the input values in more detail.

Open „Global Bike Go – Explore Procurement“ app

After successfully logging into the SAP system (Fiori Launchpad) as described in the **General Instruction**, the players can open the “Global Bike Go - Explore Procurement” app. They will see the following screen.

Purchase Order Quantities for Next Month

Month:

Target Output:

Own Stock

Wheel Assembly	Frame	Gear	Seat Kit	Handle Bar	Pedalset	Chain	Brake Kit
0	0	0	0	0	0	0	0

Suppliers

Name	Purchase Amount	Wheel Assembly	Frame	Gear	Seat Kit	Handle Bar	Pedalset	Chain	Brake Kit	Price
Sachsen Stahl AG	<input type="text" value="0"/>	1	1							200
ABS Brakes GmbH	<input type="text" value="0"/>							1		30
Burgmeister Zubehör	<input type="text" value="0"/>			1	1	1	1	1		223
Main Carbon	<input type="text" value="0"/>		1							86
Shell Gear	<input type="text" value="0"/>			1				1		117
Pyramid Biking	<input type="text" value="0"/>		1	1					1	208
Lohse Schraube	<input type="text" value="0"/>		1	1					1	206
Run and Fun	<input type="text" value="0"/>					1	1	1		96
Cologne Bike Supplies	<input type="text" value="0"/>				1	1	1	1	1	140
Flat Tire and more	<input type="text" value="0"/>	1				1	1			139
Thick Spoke	<input type="text" value="0"/>	1						1		116
Gummi Schultze	<input type="text" value="0"/>	1			1					146

Set input values

Based on the following values, the players have to set the respective order quantity per supplier:

- Next Month
- Target Output
- Own Stock
- Supplier conditions

They order the offered sets per supplier for the indicated price. This set price can change monthly depending on the demand of the previous period.

Example for the screenshot above

If a group enters the value 100 as the order quantity for Sachsen Stahl AG, they order 100 wheel assemblies and 100 frames each. The set price is 200€. As a result, the total costs in this example would be 20,000€ (100 * 200€). If

all players order from the same supplier, he will probably increase the prices for the next round.

Please be aware: The players have to enter order quantities each round again, because after a successfully simulated round, the quantities will be reset to “0”. If two rounds are simulated in a row (without any interim changes), **nothing** will be ordered for the second round.



Information regarding game mechanics – Tips for the lecturers concerning round analysis

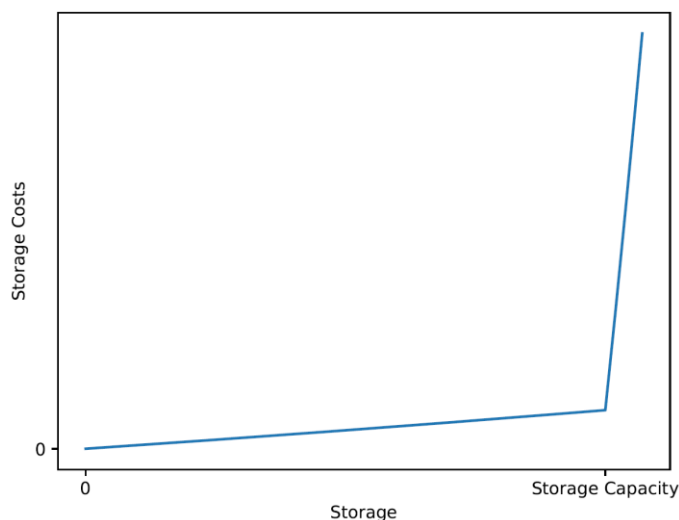
Note The following section contains information concerning game mechanics. In order to enhance the insights and the procedure of round analysis, influencing factors and possible indicators as well as their implications are described.

Influencing factors and (optimal) strategy

Global Bike Go: Explore Procurement is based on simplified models. As already described in the scenario, the objective of the game is to optimize procurement with regard to the specified production target while taking into account cost, quality, safety and flexibility criteria, thus maximizing the expected profit. In the following, the influencing factors are explained and thus the strategic possibilities are explained.

The most important objective within procurement is the **cost objective**. The material costs directly influence the total profitability of a company. In this context, the costs are composed as follows: **1.** Storage expenses and **2.** raw material expenses.

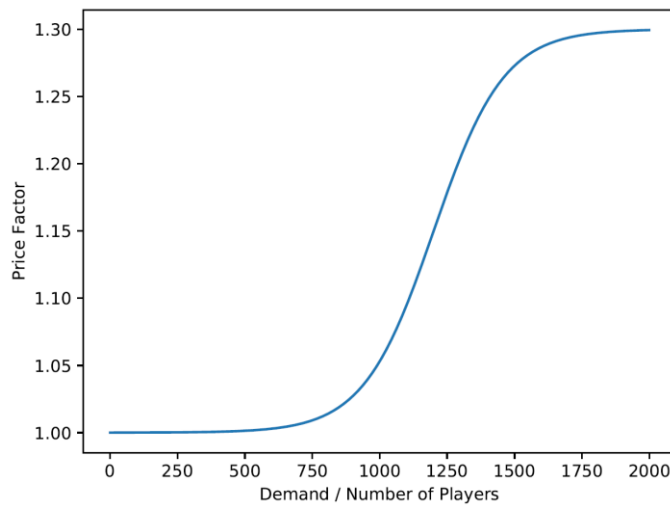
The **storage costs** vary for each raw material. As a rule, the storage of large parts requires more space in relation to small parts. This results into higher costs. In addition, attention has to be paid for the storage capacity implicitly determined by the game master. The following graph serves as an illustration.



The graph describes the amount of storage costs (for all raw materials) as a function of the amount. As you can see, storage costs initially increase slightly. However, if the storage capacity is exceeded, high costs are incurred. Possible causes were already mentioned in a previous section.

The **raw material expenses** are the second important factor. Some suppliers are more expensive than others. The costs are roughly oriented to the organizational form and the “degree of specialization” of the supplier. As already mentioned,

supplier prices are related to the demand. The following figure shows the dependency.



If many players order from the same supplier, he will adjust his prices in the following round (due to additional storage space, higher personnel costs etc.). The respective increasing factor depends on the actual demand per player. If there is less demand for these suppliers afterwards, they adjust their prices downwards again.

Quality is also an important factor for procurement. However, quality objectives and cost objectives are contrary to each other. Some suppliers may be more expensive, but deliver parts with higher quality or fewer defects. A secure supply of raw materials is a prerequisite for continuous production and thus for order fulfillment. If an order cannot be fulfilled, there will be a fine of 500€ per bike. For this reason, the procurement risk should be minimized (safety objective). The **flexibility objective** is only considered marginally, because the players are restricted by the fixed selection of suppliers and the fixed product offerings.

In sum, this means for the **strategy**: First and foremost, the production target must be fulfilled. Defective parts and delays in supply result in backorders, which lead to sales deductions. These have the greatest influence on the profit (at a sales price of 2,000€). Therefore, the fulfillment of an order takes precedence over the minimization of raw material costs. Once the most promising suppliers have been found, it is time to reduce storage costs and keep an eye on other companies. Perhaps, the price increase of a supplier is decisive.

Possible indicators and their implications

Within the scenario, no indicators for the first round are mentioned. However, it should be obvious that players should avoid backlogs as much as possible. At the beginning of the game, they can get an overview of the different suppliers, their offered sets and their prices in order to speculate about delivery reliability and material quality. However, the first round is only intended to give players a feeling for the procurement in the following months.

In general, the results have to be analyzed and conclusions have to be drawn about the supplier behavior and competing companies. The own stock is an indicator to confirm or refute speculation with regard to delivery reliability and material quality. In addition, a completely empty warehouse is in most cases an indicator of order backlogs. It should be reacted as quickly and adequately as possible. On the other hand, the purchase price can be used to derive statements about the procurement behavior of competing companies.

