

# Futures World Championship

## Rules of the game

A few years ago, no one expected a pandemic to shake the fragile balance of the global system. Interruption in global trade flows, chip shortages, political instability are some examples of the side effects of the pandemic... And all these challenges have a common cause: no one was ready.

This is why FUTURES WORLD CHAMPIONSHIP (FWC) was created.

Participants from all over the world form teams of one to three players. These teams compete in a market simulation to grow their IT business. Competitors must decide how many chips to buy to build their computers and how much to invest in marketing their computers. Throughout the competition, teams will also face various global challenges that will have impacts depending on their level of preparation!

## 1 | INTERFACE OPERATION - CHECKLIST

1. The first time you start the application, there is an introduction. Make sure you follow the steps correctly.
2. The **International Strategy** menu allows you to choose your headquarters and subsidiaries at the start of the game. You can change during the game. It does not cost money but it changes the economic parameters (taxes, exposure risks, monitoring costs and assembly costs).
3. The game works by turns. You must confirm your choices in the **Operations Strategy** menu. It's very important to remember to confirm your strategy every turn!
4. The **Risk Strategy** menu allows you to protect yourself against possible risks that appear during game scenarios (geopolitics, natural disaster, etc.). You can protect yourself partially or fully. You need to click on the **upgrade** button. Will luck smile on you?
5. A technical problem? Refresh your browser.

## 2 | RULES OF THE GAME

### 2.1 | Objective

The goal is simple, to grow your business and be the most profitable in the end! If the goal is simple, the decisions to achieve it can be complex and the market is unpredictable not to mention the global risks that can strike at any time like a global pandemic!

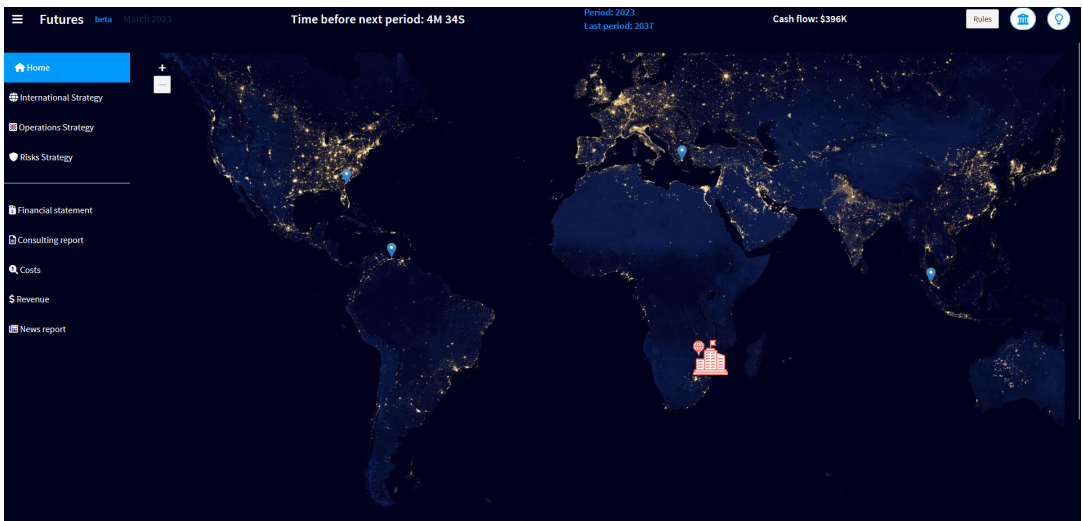
### 2.2 | Procedure

The chips war takes place over several periods. Each period represents a fiscal year for your company. The market is updated at the end of each period. This is unpredictable and depends on the actions of each player. You operate in two markets governed by supply and demand.

The chip market you are buying on and the computer market you are selling on.

At the start of each period, consult the various financial information available to you to make your strategic decisions (Financial statement, Consulting report, Costs, Revenue).

You can consult our advice thanks to the icon located at the top right (see below)



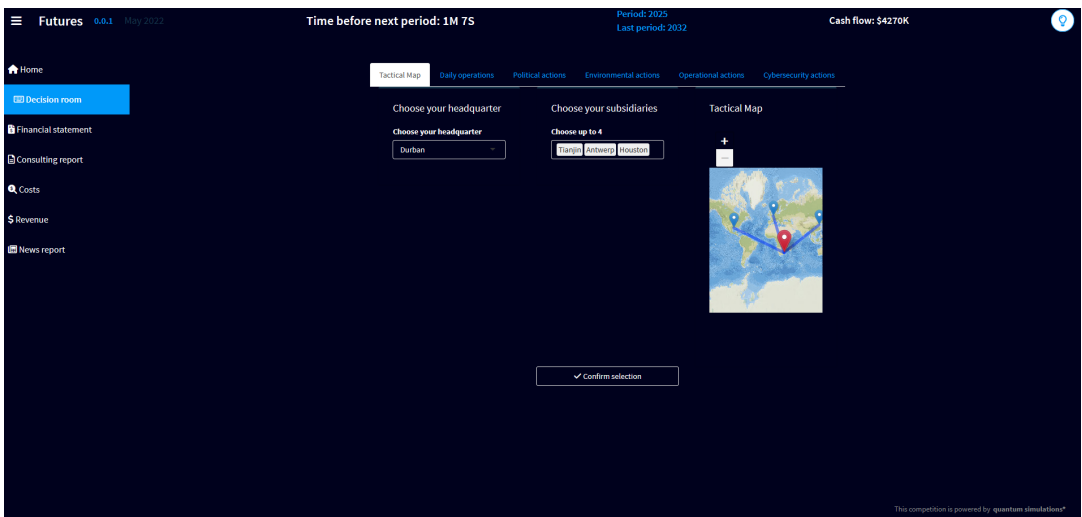
## 3 | DECISIONS

During the game you will have to make several decisions that will have considerable impact on the health and future of your business. You will have to face the unpredictable and a dynamic market governed by the actions of each team!

Here are the different decisions and the impacts of these that you can make. Be careful, the impacts are always unpredictable because they depend on the actions of other players and risks (Political, Environmental, Terrorist, etc.) that can occur at any time and anywhere!

### 3.1 | Headquarters and subsidiaries

Choose your head office and your subsidiaries in the **International Strategy** tab. A multinational company is made up of a head office and at least one subsidiary and a maximum of 4 subsidiaries.



When you choose your head office and your subsidiaries, you see the tax structure of your multinational. This is important information to keep in mind.

#### 3.1.1 | The head office

Your first decision will be the choice of location for your head office. There are 10 different locations to choose from. Choose your location carefully according to the different characteristics of each one. You can see a summary of each location below.

Location	Overall taxes	Continent
Shanghai	25%	Asia
New York	35%	America
Rotterdam	15%	Europa
Sao Paolo	15%	America

Location	Overall taxes	Continent
Singapore	17%	Asia
Tangier	31%	Africa
Panamá	25%	America
Melbourne	30%	Oceania
Durban	28%	Africa
Los Angeles	35%	America

### 3.1.2 | Subsidiaries

You can choose up to four subsidiaries. The choice of your subsidiaries allows you to reach new markets. You also diversify risk by having a presence in various locations around the world. But you also expose yourself to risks. These risks will manifest themselves during certain game turns. There will indeed be scenarios that will be played out (environment, natural disaster, geopolitics, etc.).

Subsidiaries have an impact on **monitoring costs** (or management costs). Indeed, more resources are needed to manage the subsidiaries. The impact on **monitoring costs** follows a linear mathematical function:

$$\text{monitoringCosts} = 2 \times \text{production} \times 1 \ n \times 0.015$$

with  $n$  the number of subsidiaries.

But it also comes with two benefits. The first is risk diversification in the event of an adverse scenario. The second is that it allows for further **economies of scale** on assembly costs:

$$\text{assemblingCosts} = 10 \times \text{production}^{0.9 - 0.001 \times n}$$

### 3.2 | Strategic choices

You must make strategic choices in each game. These strategic choices are at two levels:

1. Choice of electronic platforms based on AMD and/or Intel chips
2. Investment in AMD and/or Intel advertising

Make your choice in the menu on the left **Operations Strategy** for each period and don't forget to click on **Confirm strategy!** If you forget, the settings from the previous round will be taken into account. So it won't be too bad. There is also an alarm that will appear before a round ends. To know also: within your team, it is the last person who confirms the strategy that counts. You can therefore change your choices (except upgrades!) in this menu at any time.



### 3.2.1 | Choice of the number of chips

Choose the number of AMD and Intel chips you want to buy. With each chip purchased you will produce a computer which you will sell at the end of the period! You are therefore a buyer in the chip market and a seller in the computer market.

### 3.2.2 | Investment in advertising

Advertising can be an important part of your strategy. It is important to launch a vertical product differentiation strategy. However, it works if the advertising effort doesn't get lost in the ambient noise.

Indeed, if you are among the few to advertise, consumers will be attracted to your brand. This will create inelasticities (see your Concepts menu). But if your competitors are spending more than you are, your ads won't be as effective at drawing consumers to your brand. Also, your ads can get lost in the noise created by all those companies promoting their brand.

You have the choice to advertise for AMD and/or Intel between 0 and 1.

For example, if you choose 0.5 for Advertising AMD then you will do marketing/advertising up to

$$0.5 \times \text{number of chips}_{AMD-purchased}$$

The difference between Intel and AMD advertising costs is that Intel has launched a marketing initiative called Intel Inside.

Each manufacturer can participate in this initiative and will have their advertising campaign partially financed by Intel

(50% of the total cost of advertising on Intel-based computers). Intel requires manufacturers to affix an Intel Inside sticker to every computer with an Intel chip, and requires the Intel Inside logo to be associated with every manufacturer advertising campaign (billboards, online, etc.).

### 3.3 | Political, Environmental, Operational and Cybersecurity Actions

In the Futures competition, 4 types of risks can occur. Political, environmental, operational and cybersecurity risks.

You have the possibility of protecting yourself against these risks from the second period by investing in protective actions for these four risks. Each layered protective action and each level of protection costs you \$50,000.00 per turn and is a permanent decision.

If you max out, then you will be completely guaranteed not to suffer the negative effects of a scenario. If you protect yourself just a little, then you will lessen the negative effects without negating them. By clicking each time on the upgrade button, you add 20% protection, up to 100% of course. The in-game equivalent of Lloyd's will count.

These protective actions will allow you to mitigate the consequences associated with the risks that may occur! It's up to you to decide in the different tabs of your Risk Strategy if you want to take preventive actions or face risks that could have significant consequences for your business!

The screenshot shows the 'Risk Strategy' interface in the Futures World Championship simulation. The interface is dark-themed and includes a sidebar on the left with navigation options: Home, International Strategy, Operations Strategy, Risk Strategy (highlighted), Financial statement, Consulting report, Costs, Revenue, and News report. The main content area displays four risk categories: Political actions, Environmental actions, Operational actions, and Cybersecurity actions. Each category has a progress bar and an 'Upgrade' button. The current cash flow is \$396K, and the time before the next period is 3M 26S. The interface is powered by Quantum Simulations.

## 4 | COSTS, REVENUES AND CASH

Your actions generate production costs and income. The difference between the two gives your Cash Flow which is the metric used to know which business is the most profitable.

### 4.1 | Costs

- **Assembling costs:**

Assembling costs are the technical costs associated with the physical manufacture of the final product. They are calculated as follows:

$$assemblingCosts = 10 \times production^{0.9 - 0.001 \times n}$$

where the quantity of computers is equal to the quantity of chips purchased (AMD and Intel combined).

- **Monitoring costs:**

Monitoring costs are costs associated with anything unrelated to assembly and advertising costs. They follow a linear transformation.

$$monitoringCosts = 2 \times computerQuantity \times 1 \ n \times 0.015$$

with  $n$  the number of subsidiaries.

- **Advertising costs:**

$$advertisingCosts_{Intel} = advertisingBudget_{Intel} \times computerQuantity_{Intel} \times 0.5$$

$$advertisingCosts_{AMD} = advertisingBudget_{AMD} \times computerQuantity_{AMD}$$

The budget is decided by moving the slider in the menu. An estimate of the costs incurred is proposed at the bottom of the page.

## 4.2 | Turnover

This is the company's gross income generated from the sale of products.

Your revenue comes from the number of computers you sell multiplied by their per unit selling price. Depending on your market share, you may have more influence than your competitors in the market. On the market, the price of Intel and AMD computers is respectively determined by the confrontation of market supply and demand.

Revenues are calculated as follows:

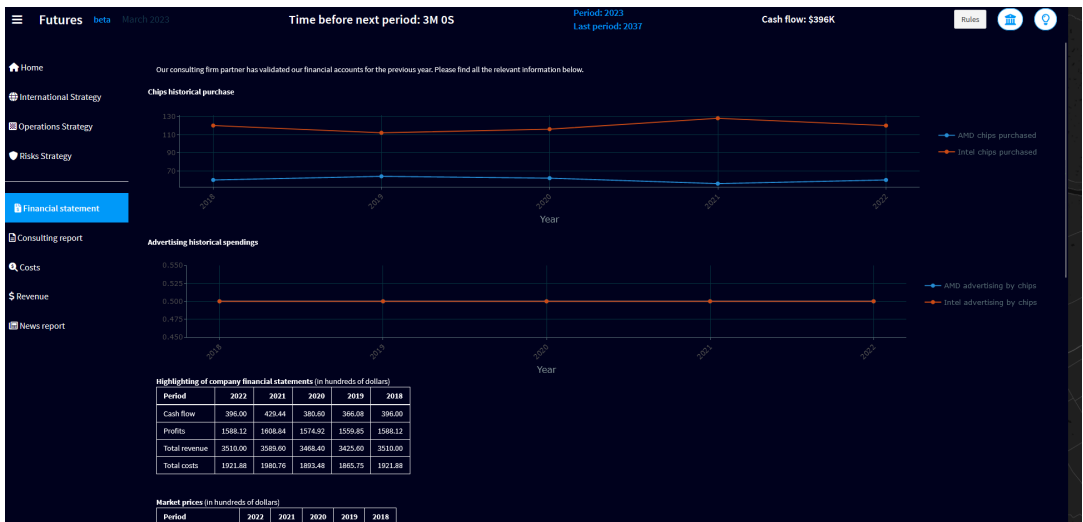
$$Revenue_i = computerPrice \times computerQuantity_i$$

with  $i = \{Intel, AMD\}$

Your total recipe is as follows:

$$totalRevenue = revenue_{AMD} + revenue_{Intel}$$

Your Chief Financial Officer can find all this information in the **Financial Statement** menu.





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### 4.3 | Cash flow

Your cash flow is calculated at the beginning of the year. It consists of the profit of the past year.

Your cash flow is the most important information. It tells you - all things being equal - how much money you can invest in producing AMD-based computers and Intel-based computers. Warning: you don't know for sure what the price of Intel and AMD chips will be next year.

It will depend on your demand and that of your competitors. The market determines that.

Indeed, you know that we do not live in a "ceteris paribus" world. Intel and AMD produce under capacity constraints and if the demand for these inputs is too high, the price will rise. You might end up paying more than you expected. If you exceed your cash flow, you are bankrupt!

So your first option is to play it safe and keep some wiggle room in your cash flow in case the market goes crazy one year.

A second option is to sell your computers at a higher price through your marketing.

This will allow you to generate new profits during the year, which could offset your exposure to higher prices from Intel and AMD. As a result, your profits will be lower at the end of the year, which will translate into lower cash flow at the start of the following year.

*May the force be with you! Th. Warin*