



Titan Basics and Competition Strategy Guide

The Holo-Generator Industry

Set in the year 2035, JA Titan creates a world in which players are CEO of their own companies. The Holo-Generator, the brand new products are produced and marketed in the JA Titan.

Your company makes Holo-Generators, a revolutionary product that combines the latest computer technology. As the new owners and managers of the company, you must make a variety of important decisions that will ultimately determine whether you lose your investment, become fabulously wealthy, or fall in between.

Market Situation

Everyone is excited about Holo-Generator. Many companies are eager to fill this demand and prices are high as companies gear up to produce more. It is not clear whether prices will drop as more Holo-Generators become available. Will Holo-Generator to be a fad or a basic tool for homes and offices?

You and your competitors begin on equal basis. Like runners at the starting line, no company has any advantage over the others.

Management Role

Your job is to use your resources to outperform the competition. During the competition, you and your competitors make 6 decisions that affect the operations of your company:

- (1) Set a price
- (2) Decide how many to produce
- (3) Decide spending on marketing and advertising effort
- (4) Invest in capital equipment
- (5) Decide spending on Research & Development
- (6) Decide spending on Charitable Giving

Decision Reports

Each period you receive reports that show the performance of your company and competitors. It gives you clues on what decisions to make for the next period.

Each company receives an Industry Report and a Company Report after each round of decision. Each period represents three months.

(a) Industry Report

- Summarises the performance of the entire Holo-Generator industry
- Available to all companies
- Reports the relative performance of each company based

It is divided into five sections: (1) Ranking, (2) Units, (3) Dollars, (4) Productivity, and (5) Economics. A typical Industry Report shows companies begin on equal footing, but subsequent performance depends on the decisions of each company's managers.

The Ranking section actually shows the information about the competitors that could be found from published financial reports. It covers Sales, Profit, Price, Retained Earnings, Unit Market Share, and Dollar Market Share.

Profit refers to the profits earned in the current period. Retained earnings are the total profit that each company has made so far in the simulation.

The Units section provides information on supply and demand. You may use this number to predict the strategy that might be imposed by other companies based on the industry situation, i.e. extra inventory, total orders, total capacity, etc.

The Dollars section shows how supply and demand translate into cash.

The Productivity section provides information on how well the Holo-Generator companies are using their resources. A key figure here is Capacity Utilization and the lowest production costs are attained at 80 percent.

The Economics section contains information about the economy. The prime rate affects both the interest rate you pay on money borrowed and the interest you receive on cash balances. The tax rate determines the amount of taxes your company will pay on its profits.

An important part of all reports is the **Change figure**. Change is expressed as a percent and is calculated by dividing change in performance in the current period by the corresponding performance in the previous period. By examining the Change figures, you can note important business trends.

The Industry Report is the best place to find out information about your competitors. By comparing the performance of your company to the entire industry, you can tell how well your competitors are doing.

(b) Company Report

- Available to a particular company because it contains private operation decisions and information
- Reports the company's performance
- Helps manager shaping your decisions for future round

The Company Report consists of three financial statements and an Operations Report. The Company Report contains proprietary (private) information about the internal operations of your company.

Marketing Report provides important information about the internal operation of your company. You can compare the number of orders you received and produced then sold. You can check if you have balanced both the supply and demand for the Holo-Generators. **The key figure is the Total Cost per unit sold** as it shows how competitive your company is in the cost structure and the available margin that you could mark up.

**** Orders do not carry over from one period to the next.** To fill orders you must have products available in the same period that the orders come in.

The Income Statement shows how your profit or loss for the period was determined. It begins with your total sales, and then subtracts each expense category. Note that interest is an expense when you have a loan outstanding, but is income when you have a cash balance. The computer will automatically extend your company a loan when you need cash. It also will repay the loan from your revenues. The last entry on your Income Statement is your Net Profit. Your goal is to make the net profit as high as you can.

The Cash Flow outlines the change in the amount of cash available to your company during the period. It starts off with the amount of cash your company had at the beginning of the period, adds and subtracts the various categories that affect your cash, and ends up with the cash available to your company at the end of the period. Remember that you cannot spend more than the amount of cash and credit available to your company in the next period. The computers will keep track of that figure and will not allow you to exceed this limit.

The Balance Sheet is a snapshot of your company's finances at the end of the period. It shows what your company owns and what it owes. What you own are called assets and include cash in the bank, unsold Holo-Generators in your warehouse, and your Holo-Generator factory. What you owe is called liabilities and equities. Your loans are a liability. Capital is the amount of money originally invested to start your company; this is owed to the investors.

Retained Earnings is the amount of revenue left over after expenses have been paid since your company has been operating. This is owed to the investors in exchange for using their capital to operate the company. Remember that the larger the Retained Earnings figure, the more successful you have been in operating your company.

The Performance Index

The PI provides a measure of performance. It includes six specific factors that are important in evaluating company performance. All companies begin the simulation with a PI of 100. As a company's position in the industry improves over its competitor's position, its PI increases. If a company's performance causes a decline, its PI will fall below 100. The components of the PI are described below. The PI level is driven by the **Retained Earnings** Factor. The other factors, with the exception of productivity, are relative and highlight differences between the companies.

Retained Earnings

Retained Earnings, or total net profit to date, determines **50%** of the company's PI. This factor increases as a company earns more in a period than its earnings in Period 0.

Demand Potential

Demand Potential is based on a company's share of total marketing and R & D expenditures in the industry from the beginning of the simulation. Demand Potential is based on the assumption that marketing establishes brand name value and R & D establishes product value. It represents 10% of a company's PI.

Supply Potential

Supply Potential is based on a company's share of total production capacity. Supply Potential is based on the assumption that physical production facilities have an inherent value whether or not they are being managed profitably. It represents 10% of a company's PI.

Productivity

Productivity represents the efficiency of a company's operations. The productivity factor accounts for 10% of MPI. It declines as capacity utilization goes outside a range of 75%-85%.

Market Share

Market Share factor represents 10% of a company's PI. It is based on a company's unit market share in the current period.

Growth

The growth factor is calculated by comparing a company's sales growth rate from the previous period to the industry's sales growth rate from the previous period. If a company's sales increase more than the industry's sales, this factor increases. If a company's sales growth lags more than the industry's, this factor decreases. It represents 10% of a company's PI.

Strategic Decisions

(1) Pricing Decision

You use price to match what people want (demand) with what is available (supply). Price is a very important factor in determining how much profit you make. The profit that you make is equal to the price you charge multiplied by the number of Holo-Generators you sell minus what it costs you to make and sell them.

You want to sell as many Holo-Generators as possible at the highest possible price and lowest cost. The number of Holo-Generators you can sell depends on the quantity customers want to buy and the number you have to sell.

Your company has the opportunity to set a new price for your Holo-Generators in each period. Keep your competitors in mind when you are setting your price.

At the start of the simulation all companies charge \$30 for their Holo-Generators.

(a) High-Price Strategy

Some Holo-Generator companies plan to produce high-quality products, charge high prices, and make a high profit on each Holo-Generator they sell—realizing that fewer customers will buy their Holo-Generators.

(b) High-Volume Strategy

Some Holo-Generator companies plan to keep prices low, to sell as many Holo-Generators as possible. They don't need to make as much profit on each Holo-Generator they sell.

(c) Middle Strategy

Some companies may choose to sell their Holo-Generators in the middle price range. They offer a good quality product for a reasonable price.

Holo-Generator companies can be successful with whichever strategy they choose. The key is to develop a plan and carry it out.

Marketing Orders

The supply of Holo-Generators you have to sell in a period is equal to the number of Holo-Generators you produce in a period plus the number of Holo-Generators left over in inventory from the last period.

If your company has orders that it was unable to fill, you could have made more profit with a higher price. If your company produces more Holo-Generators than it could sell, you could have made more profit by selling them at a lower price. You make the most profit by selling as many Holo-Generators as you can at the highest price you can charge.

(2) Production Decision

Managers use the price of their product to balance the supply with the demand. The most successful company, the one with the highest profit, is the company that manages to sell all its Holo-Generators at the highest possible price.

The largest number that you can produce is determined by the factory capacity. You can choose to produce any number of Holo-Generators ranging from none to the capacity of your factory. To make that choice, you need to know how much it costs to produce one Holo-Generator.

Optimum Efficiency

The cost of producing a Holo-Generator depends on two factors: (1) the size of the factory and (2) how efficiently the factory is operated

If you produce the same number of Holo-Generators in the next period, the cost for each one will be the same. Holo-Generator factories produce Holo-Generators at the lowest cost when they are operated at **80 percent** of capacity.

If you produce fewer Holo-Generators than that, each one costs more because some workers and machines are idle even though you are still paying for them. If you produce more than 80 percent of the number, i.e. your factory is capable of producing; you need overtime for your workers and have to run your machines for longer than they are scheduled. This results in breakdowns and a higher cost per Holo-Generator.

To determine your lowest-cost production level, multiply your Holo-Generator factory's capacity by 80 percent.

It is best to run your factory at 80 percent of its capacity. The only exceptions are if demand is so high you can raise your prices enough to compensate for the higher costs of producing more than 80 percent, or if demand is so low that you can never hope to sell 80 percent of your capacity over the next several periods. In those cases, you might want to produce more or less than 80 percent of your capacity.

The outcome of your decision depends on the decisions of all your competitors. If all Holo-Generator companies produce more, prices have to be lower for all the Holo-Generators to be sold. If all companies produce less, then prices can be higher. If some produce more and some less, some companies raise their prices and some lower theirs, the outcomes will be different. The companies that pick the right combination of price and production will earn the highest profit.

(3) Marketing Decision

Marketing includes hiring salespeople to call on stores that sell Holo-Generators, putting advertisements in the newspaper, on television and radio, and printing and sending out catalogs so customers can order Holo-Generators by mail and phone.

By looking at the Marketing Report from your **Company Report**, you can find the amount that you have spent on the marketing activities in the last period. You can correlate the spending and the orders received.

You can change your marketing expenditure and save money. If you spend less on marketing, but with fewer salespeople and fewer advertisements, you may get fewer orders. If you increase your marketing spending, you have to pay the bill out of your profit, but the extra orders this expenditure produces may increase your profit by more than its costs.

The outcome will not only depend on your decision, but those of your competitors as well. If all the other companies increase their marketing expenditures, there might be so many people talking about Holo-Generators that you will have more orders for your brand, even though your company's marketing expenditure has been reduced. The opposite may also be true: if the other companies cut back on their marketing expenditures, your company may have to spend more just to get the same number of orders.

The amount you decide to spend on marketing should be related to your company's price and production decisions. Develop a marketing strategy that is consistent with your company's goals.

There are many combinations of decisions you might make. An increase in marketing spending means your company will have more costs and will need a higher margin to cover those costs. To earn a higher margin, companies adopt high pricing strategy may need to invest more heavily in marketing than low-price companies. In general, consumers are attracted to middle- and low-price companies because of their prices. However, when several companies in the Holo-Generator industry are following middle- and low-price strategies, a strong marketing program will be needed to attract customers.

(4) Capital Investment Decision

When your company made its production decisions, the maximum number of Holo-Generators it could produce was determined by your factory's capacity. You can't produce more Holo-Generators than your Plant Capacity will allow. You now have the opportunity to expand your company's factory.

In each period, you have to pay Depreciation, the cost to replace worn-out equipment in your factory. The equipment in the factory is designed to last for five years. Therefore, in each period or quarter, you spent 5 percent of the value of your factory to replace machines that wore out. As a result, your factory stayed the same size and showed the same value on the Balance Sheet.

You can change the amount you spend on your factory's equipment. If you spend more than 5 percent of the factory's value in a period, you can buy new machines and replace the worn-out ones. This enables your factory to make more Holo-Generators than it can now.

If you spend less than 5 percent of the factory's value, more machinery will wear out than you replace. This means that your factory capacity will decline.

At the same level of Capacity utilization, larger factories produce Holo-Generators at a lower cost than smaller factories. But whether your factory increases or decreases in size, you will always produce Holo-Generators at their lowest costs when you run the factory at 80 percent of its current capacity.

If you are following a low-price/high-volume strategy, your company needs more Holo-Generators to sell in the future. You should start to increase the size of the factory right at the beginning. **The cost of increasing your factory's capacity by one unit is \$40.**

If you are following a high-price/low-volume strategy, you may not need as many Holo-Generators in the future. You can reduce the capacity of your factory by spending less on capital investment than on depreciation. It does your company little good to have a factory that can't be run at 80 percent of capacity. For every \$40 invested less than the last round's depreciation, the capacity of your factory will decrease by one unit in the following period.

The capital investment decision is similar to the production decision, except that you must consider future goals. When you make your production decision, you increase the number of Holo-Generators available this period.

When you increase your factory's capacity by spending more on capital investment in one period, the capacity increase is not available to be used until the following period since it takes time to purchase, install, and test new machinery.

Adding to your factory is also a greater commitment. You will not want to expand unless you want a greater supply of Holo-Generators for several periods. Your investment decision will affect your company for some time.

(5) Research and Development

Market research helps to identify the needs of customers and kinds of products the customers want. Companies use this information to adapt their products or invest new ones to meet customers' needs. Companies that have products customers want most will get the most orders or obtain the highest price.

Product development means inventing and adapting products to meet customer needs. New and improved products attract greater demand and more orders. They also prevent other companies from taking away customers with new and improved products of their own.

For example, by using market research funds to pay for a consumer survey, you may discover that your customers really would like a Holo-Generator with a spell-check system. The first company to make Holo-Generators with such an advanced feature would likely get more orders. By spending money on market research and product development, you keep orders for your Holo-Generators coming into the future.

Spending less on R & D reduces your expenses in the next period and results in more profit immediately. Spending more on R & D may result in more orders later.

Market research and product development are long-term processes that have an effect over several periods. Increased expenditures on R & D will show up in increased orders immediately. But unlike marketing expenditures, a single investment in R & D results in increased orders for several rounds. It can be hard to catch up with competitors who have invested in R & D.

UBC Competition Strategy Guide

(1) Playing the Numbers Game

You should determine your price/volume strategy before you begin the game. Decide whether you want to sell (a) fewer Holo-Generators at a high price; (b) a moderate number of Holo-Generators at a mid-range; (c) a high volume of Holo-Generators at a low price. Each decision you make will affect profit and available cash and each quarter are interdependent.

For example, if you choose higher prices, you may want to be careful how high you set your production level. Higher prices will usually result in less demand for your product and so exercise caution about making drastic changes without seeing which way the winds of demand blow.

You will see that price has a substantial influence on demand but you also can hedge your bets by investing heavily in R & D and marketing to gain an extra edge. Market timing and your own resources naturally will influence those decisions.

(2) It's Money that Matters

If you lower your price too much, you may not have enough revenue to cover your costs. Pay careful attention to your gross margin and overall profits. Each quarter's profits or losses are compiled to calculate the retained earnings. Businesses typically borrow to expand and if you choose to expand your capacity, watch your line of credit and don't expand too rapidly or you may exhaust your ability to borrow and you will incur the burden of high interest costs.

You make better Holo-Generator by investing in R & D. Sometimes the latest and greatest can sway a market. You can gain a competitive edge if you are a high-price Holo-Generator provider and want to create increased demand or your product by outfitting it with cutting-edge components. Demand for your product knocked down a notch by a price increase but you can recoup it by increased spending on R & D.

However, if other companies have higher budgets, and are selling their Holo-Generators for much less, you might lose your market share. With increased demand, you have to be ready to change other allocations (e.g. production) as well.

(3) Wisdoms from Reports

Both reports are extremely useful. Industry Report provides pricing for competitor's product prices, changes in the economic environment and performance indexes. It also provides clues on how the economy may perform in the next few quarters.

The Company Report is especially helpful for tracking inventory. If you increase product but don't sell your Holo-Generators, your inventory level will increase. You will also incur an inventory charge. Your solution might be to lower prices and/or increase marketing to increase sales.

(4) Inventory Inventiveness

If your inventory levels are too high, don't halt production unless you want to incur a lay-off charge. If you aren't producing Holo-Generators, you have to lay off workers. You must be careful of drastic moves that could have extreme effects. A solution might be to gradually reduce production and decrease price, while observing what effect these decisions have on your bloated inventory.

In simple terms:

- Too much inventory is bad
- Producing more than you sell creates inventory
- Reducing production results in a lay-off charge
- Reducing prices will help you sell more products
- Sell more than you produce reduce inventory

(5) Trends

Once you get into the groove of the game, use the graphing feature to track trends. It gives you a quick comparison of your key statistics with those of your competitors.

(6) Submitting Decisions

Double check your figures on the decision form before you click Submit Plan. Mistake may cost you the game. In a timed game, you can go back and resubmit decisions as many times as you like before the quarter closes.

(7) Strategic Decisions

- Are you setting a right price?

There could be some strategic gain in building an inventory of unsold products that could be sold in future quarters. Consider raising the price as orders increase, so that the rising demand can result in bigger profits. However, you don't want to slam a growing marketing with price-gouging. Bad market reaction to higher prices could be a costly lesson.

- Are you holding too much inventory?

If you consistently are carrying too much inventory, lowering the price is one way to solve the problem as it increases quantity demand. However, a lower price also results in less profit. You will need to frequently review your Company report to see how your price-setting relates to orders.

- What does the competitors' price tell?

You might need to adjust yours if you see a competitor trying to grab a market edge by some high- or low-pricing strategies. Take what you learn from initial quarters to set pricing for subsequent quarters. In this way, you will develop a keener sense of market flux.

- How much should I produce?

Production is like all the factors that affect business performance as it should be responsive to market factors and past results. You want your factories producing at the maximum efficiency – selling what you make. You also want to balance production costs, so that spending is in line with selling. As with other allocations, the Company and Industry Reports can sharpen the production picture.

- Is there any exception for balancing sales and production?

Ideally, you want to sell all of your Holo-Generators at the highest price the market will bear. There is a penalty for producing more than you can sell – an excess inventory fee that subtracts from your retained earnings. Except in special cases, you want to minimize inventory. An exception might be when you want products to sell in future quarter without increasing factory capacity. In the Company Report, you can view factory capacity, which is the maximum number

of Holo-Generators that can be produced in the next quarter. Adding that capacity to inventory tells you what is available to sell. The lower the cost, the better.

- Why is efficiency important in running the business?

80% is the magic number. Operate at that efficiency level means you will be producing generators at the lowest cost. Exceeding that figure means there won't be time for maintenance and repairs, which raises costs per unit, and naturally lower profits. If you produce optimal figure, you will have equipment and employees sitting idle. That decreases your efficiency and increases the unit cost of production.

- How to find out the lowest cost production level?

Simply by multiplying your Holo-Generator factory's capacity by 0.80 and that will be your target.

- What is industry-driven marketing?

Marketing does create demand for a product. Money allocated to marketing works a bit different than investment in other areas. That's because other businesses can benefit from your marketing efforts and you can profit from theirs. Regardless who pays for the advertising, more consumers and businesses will learn about Holo-Generators. If you put more dollars behind your marketing pitches, more consumers will hear about the special, indispensable features of your Holo-Generator.

If you spend less on marketing than you did in a prior quarter, your business can pocket the difference. However, spending less might result in selling less. Thus a successful marketing strategy results in profits greater than your marketing investment.

- How to capitalize your capital?

Capital investment is the money you use to expand your production capability. These expenditures would add to the total amount of equipment you own; replace and repair existing machinery, purchase more efficient equipment; and increase the physical size of your factory. Since it takes time to purchase, install and test new equipment, the effect of any capital investment decision you make will be delayed one quarter.

- What is the relationship between depreciation and factory capacity?

- If capital investment matches depreciation, your factory stays as is
- If capital investment is more than depreciation, you increase production capacity
- If capital investment is less than depreciation, your factory shrinks and which decreases your production capacity and cause layoff.

- Will "economies of scale" apply in the Holo-Generator Industry?

Definitely, larger factories produce Holo-Generators at a lower cost per unit. It costs \$40 in capital investment to increase your factory's capacity to produce just one more Holo-Generator. Following that ratio, it costs \$40 to produce 10 more Holo-Generators.

- Why is R & D important in the industry?

Investment in R & D is a long term and forward-thinking proposition in running business. The future growth or your business is connected to spending in this area. By smart investing, your next generation of Holo-Generators will have new features and advancements and have greater market appeal.

- Is it easy to see R & D result?

Don't get too anxious about R & D result. Market research and product development are long term processes, with their effects distributed over several quarters. Money invested in these 2 areas will increase sales in future quarters though not independent of your pricing strategy. The impact of R & D spending persists over time, so you will still receive some effect several quarters down the line. This investment has a positive effect on demand though price is a stronger factor in gaining market share.

R & D spending like marketing, raises demand industry-wide. The percentage of that extra demand is directly proportional to the percentage of industry R & D spending your business is responsible for.

Reduced spending can trim your expenses, but increased spending can spur demand and boost those ever pleasurable profits. If you business does not invest in R & D, your product will not improve. A competitor could come up with a snappy, new Holo-Generator incarnation, and your business might never catch up.