

DECIDE-IT

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Executive Summary

This user manual describes the version 1.0 of the DECIDE-IT game. It explains how to access the game and how to play it. The game will be further developed till the end of the project, so this manual only refers to the state of development at the time of writing. All the functionalities of the game that are still under completion will be highlighted along with all possible future improvements.

The manual is organized as follows. First we will give a general description of the game, its mechanics and some technical aspects that the user need to know in order to manage some technical issues. Then we will describe how to login and access the game interface. Finally the user interface will be explained.

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1 DECIDE-IT game overview

DECIDE-IT Game is a serious game designed to train managers in Dynamic Decision Making (DDM). Dynamic Decision Making refers to a particular kind of decision making that happens in highly complex and dynamic environments. Complex means that some variables interact together in ways that are difficult to understand and predict. Dynamic means that the situation changes over time not only due to our actions but also as a result of its internal mechanics. Most of the situations that people face in real life are of this type, and this is most true for business as is nowadays.

The idea of targeting the game to this specific type of decision making arose both from the needs analysis performed in the project (D3.1) and from the review of the most up to date trends in business decision making theory. Moreover, concepts of DDM can be easily transferred across different situations and hence are not specific to any business sector and not even to the business domain itself.

The game is designed around a stock management task because, as shown in many experiments on business decision making, is the most simple and direct way to implement a complex dynamic task related to business. For more details about using computer simulations for training purposes please have a look at the methodological manual (D4.2)

Following is explained how the game works and how it is going to be further developed to make it a useful and flexible tool for training DDM.

1.1 How the game works

The DECIDE-IT game can be played both in single and multiplayer mode. The task of the player/s is to manage one year business of an online-retail company selling products for the hobby modeling market. The player/s start with an initial budget and stock levels and have to run the business in order to end the year with the highest profit possible. The task may appear to be simply buying and selling goods but there are many constraints that make it not so trivial. Products price, for example, can be tweaked to higher sales, but there are some tradeoffs. First, I have to set the price in order to make it convenient for me to trade on that products. Secondly, there is a maximum number of daily orders that can be processed and depends on the number of staff working in the inventory. This maximum daily order threshold can't be exceeded. If that happen I will incur in delivery delays and customers will complain. Complaints in turn will affect my web reputation that in turn will influence incoming sales. Moreover, when I plan to increase sales I also have to ensure that I have enough stock to tackle the increased amount of incoming orders. All the interactions among this variables (price, orders, stock level) occur

Products

There are three main products that the player has to decide about, and that he can leverage to run a successful business: the Servo, the Microcontroller and the Servo-Extension.



The **SERVO** is a small electric motor actuator used to build model plane, robots and cars.



The **SERVO-MICROCONTROLLER** is a small electronic circuit used to control one or more servos simultaneously.



The **SERVO-EXTENSION** is an extension cable generally used to lengthen the wire of the servo.

The number of products have been limited to three in order to keep the complexity of the game low, at least in the initial phase of development and testing. But nonetheless it is technically possible to add more products in the future. It is even possible to modify the game in order to allow the player to choose how many product to have in the catalog.

The company is supposed to have an online e-commerce website where customers can put their orders and have information about products, prices, features and delivery time. The player/s don't manage the website directly but only see its effects in term of number of incoming orders and customers rating/feedbacks.

Inventory



Products are managed by the inventory department and are stocked in the warehouse where a certain number employees take care of receiving the goods, sort it out in the right place and update the inventory database. People working in the warehouse are also responsible for preparing the parcels to be delivered. They receive instruction from the sales department and for each order they have to pick up the product from the stock, prepare the package, manage the courier service and so on. It's important to notice that the number of employees working in the warehouse affects the maximum number of orders that can be processed daily. Each person can manage a maximum of 50 orders per day. So, for example, to manage a 200 daily orders business you need 4 people working there.

Accounts



The Accounts department manages money flow. Here is where all figures are put together to calculate incoming sales, expenses and profit. These three variables are monitored daily to give useful information about trends.

Sales & Marketing



The Sales & Marketing department gather information about orders and customers satisfaction. The number of orders received daily depends on two main factors: the retail price and the web reputation. The lower the retail price is, the higher is the number of daily orders received and vice versa. The lower is the web reputation the lower will be the number of order received. Web reputation is in turn affected

by the customer service that at the moment in the game entirely depends from the delivery time. More detailed information will be provided in the description of the game interface panels.

2 The game interface

Figure 1 shows a snapshot of the DECIDE-IT game interface. On top of it we have the time indicator showing the current day number and the date in the game. The game starts the 1st of January 2013 and end on the 31st of December 2013. On the left side there are some game panels showing information about the bank balance, sales orders and customers rating. On the right there are information about our products. The following sections will describe details about each game panel starting from the time indicator at the top.



Figure 1: Sample screenshot of the game interface

The time indicator



The time indicator at the top of the game interface displays the current day number and date in the game. The game lasts one year, from day 1 to day 365. The corresponding dates are 1st January 2013 and 31st December 2013. On the time indicator panel there are two buttons named “start button” and “stop button” that can be used to start the game and pause it. This is only a feature of version 1.0 of

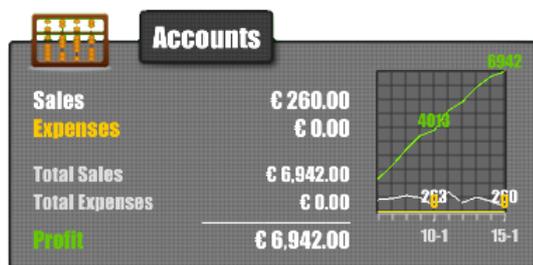
the DECIDE-IT game that have been introduced to facilitate the testing of the game. In future version will not be possible to stop the game.

The Bank panel

The Bank panel visualizes the company account bank balance and a graph with its trend in the last ten days. The game starts with a balance of 10'000 euros. Variation of the bank account can be positive as due to incoming sales, or negative as due to expenses like purchasing goods or paying staff salaries.



The Accounts panel



The Accounts panel displays information about sales, expenses and profit. The label “Sales” and “Expenses” show daily information about money coming from order sold and from expenses incurred. “Total Sales” and “Total Expenses” instead

indicate sales and expenses from the beginning of the game. Profit is calculated simply by subtracting total expenses from total sales. The graph shows trends for the last 10 days. The graph is useful especially to monitor expenses that are not made on a daily basis. At the moment in the game the company has only two sources of costs. Staff salaries and stock purchasing. Figure 2 shows an example of graph showing costs due to staff salaries that typically happen at the end of each month. The yellow line shows a visible spike due to payment of staff salaries occurred on the 28th of January. Conversely the profit line shows a visible drop down.

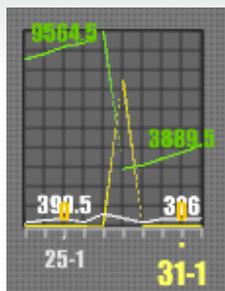


Figure 2: Sample of spike in the expenses (yellow line) showing that salaries have been paid on the 28th of January.

Sales & Marketing Panel



The Sales & Marketing panel gives several information about orders and some information about customers satisfaction. Following is a description of each label.

Incoming

Incoming refers to the number of orders received from the e-commerce website daily. This quantity varies due to many factors but it basically follows a demand-supply rule so that the higher is the price and the lower will be the number of orders received. The number of incoming orders is also affected by the web reputation of the company. The lower is the company web reputation and the lower will be the incoming orders. There are also some periodic intrinsic fluctuation of the market that must be taken in to account during the game.

In progress

In progress refers to the number of orders that have been received and are currently being processed by the inventory staff. It is supposed that once an order arrives it passes through a series of steps that end with the delivery of the parcel to the customer. All orders that have arrived but have not yet been delivered are counted as in-progress.

Delayed

The label Delayed indicates the number of orders that will not be delivered in time to respect customers' expectations. In the company's website is stated that "orders will be delivered in two working days".

Mean Delay

The mean delay is expressed in days and indicates the mean delay of all delayed orders. This data combined with the previous one can be a useful predictor of customers complaints.

Delivered

Delivered indicates the amount of orders successfully delivered to customers.

Complaints

Complaints refers to the current number of customers that didn't received their orders in time and after some days (depending on the their patience) decide to cancel their orders. Complaining customers are also supposed to put a very low rating in our website and in websites dedicated to rating company services (like trustpilot.com).

Total (Complaints)

While the previous data refers to daily complaints this refers to the total number of complaints from the beginning of the game. Total amount of complaints is correlated to the web reputation. The more total complaints the less our web reputation becomes.

Web Reputation

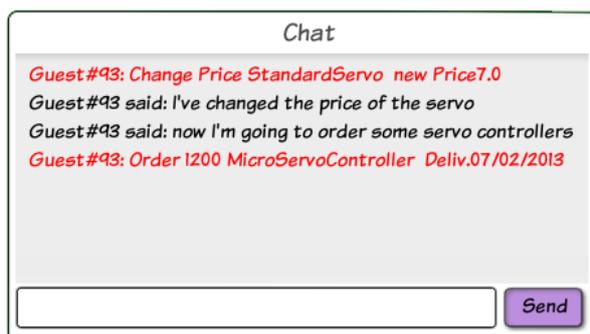
The web reputation is expressed in percentage and indicates how well the company is rated by websites and forums specialized in collecting feedbacks from online customers. Rating systems are usually based on feedbacks given from customers that express their purchase experience giving a score on a scale that varies from zero to five stars. We can imagine that a similar mechanism operates in the game so if the web reputation is 100% it means that all our customers gave a five star

score. If the web reputation is lower it means that some of our customers gave a lower score. Web reputation is one of the most important index to monitor because the number of incoming orders is proportional to it. Indeed, before proceeding with their purchase, the simulated customers in the game will first check the web reputation of the company, and the lower it is the lower will be the probability that they will place an order on our website.

The Marketing Function

The last version of the software includes the possibility to perform marketing actions. When pressing the “marketing campaign” button on the sales and marketing panel a window will appear asking the amount of money that we want to spend on marketing. The marketing campaign effect will increase the web reputation and its strength will be proportional to the amount of money invested.

The Chat panel

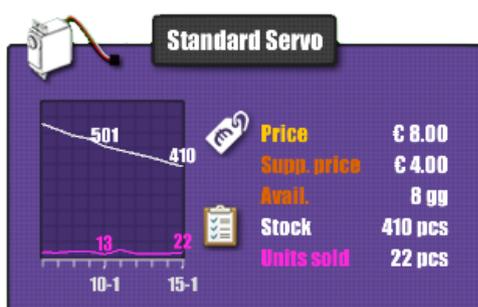


The chat panel is placed on the bottom of the game interface and has a double purpose. Basically it allows players to exchange text messages during the game in a multiplayer session. It's true that chats are not the best and effective way of communicating especially in situation where fast and effective communication is needed, but

in absence of alternatives it is a valuable tool. Nonetheless a multiplayer game session can be conducted using voice communication systems like skype.

The second main function of the chat panel is that of an event log. Indeed, every action performed by all players is tracked on the chat message panel and summarized in a compact way. Each action message is a

The Product panel



The product panel contains information about a product in a very compact format. On the top edge of the panel, inside a black round box, is the name of the product written in a bold

white font. On the left of it a small icon represents it graphically.

Inside the panel, on the right part, there are information about the current retail price, supplier price, availability from the supplier (expressed in days), number of pieces in stock, and unit sold in the previous day. Stock level and units sold are also graphically represented on the left part of the panel showing data of the last ten days.

Two buttons allows the player to change the retail price and order new stock to the supplier. Let's look closer to these functions

Change retail price



A small ticket price button icon on the left of the Price label allows the player to change the retail price. When pressing this button a small window will appear asking to put the new retail price. The text field accept only number quantity. If wrong text is typed a red warning message will appear underneath it.

Pressing the “change price” button will input the new price into the system and it will be effective from the next simulation day. After the price has changed a confirmation message window will be prompted to all connected players informing about the author of the action, the product involved and the new price.

The “close” button can be used to close the window without changing the price.

Order Stock from supplier



The order stock button is on the left side of the stock label. When pressing it a new window will appear that allows the player to order new stock. A text field is used to specify the number of pieces that we want to order. The “order” button can be used to issue the order to the supplier.

As for the change price action, after the order has been placed a confirmation window will inform all players. The “close” button can be used to abort the operation.

Unpredictable events

The last version of the game has been made more realistic with the introduction of some types of unpredictable events. There are three types of event that can occur and that impair a little the activity of the company.

Server failure



The server failure is an unpredictable event that create problem to customers that are purchasing items via the web sites. For two or three days it will be impossible to order online so orders will accumulate an this has to be managed correctly to avoid delays.

Fire in the warehouse



A fire can occur in the warehouse and can damage part of our stock. This can create problems in case we haven't enough stock to deliver orders.

Staff sickness



Staff sickness can occur at staff department and can reduce the amount of orders processed daily that in turn can cause delays and decrease of web reputation.