

# The Central Bureau for Fruit and Vegetable Auctions (CBT) and the instrument of 'tele-auction' ('televeilen')

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## Introduction

The Central Bureau for Fruit and Vegetable Auctions (CBT) is the Dutch national umbrella organisation to which all fruit and vegetable auctions in the Netherlands are affiliated. The CBT supports the auctions in marketing techniques and business economics in order to get the optimal price for the products auctioned.

One of the goals CBT pursues is to concentrate supply in response to a concentrating demand. The concentration of demand shows in the number of buyers (decreasing over the past few years) and the quantities per buyer (increasing).

CBT's answer to this process on the demand-side is to also concentrate on the supply-side. Over the past few years this has resulted in a decrease in the number of individual auction institutions by merging of several institutions. Nowadays, twenty auction institutions are left and it is intended to have about five big co-operating auctions in the future. In this article it is shown that information technology can help in this process of concentration, in particular by means of tele-auction.

First a short overview of the auction system in the Netherlands is presented.

## The auction system ('Dutch auction')

The auction system in the Netherlands for selling fresh fruit and vegetables is based on a clock system. This auction system is over one hundred years old and quite unique in the world. Of course over the century a great deal has changed, largely due to technical progress made in the sales process and internal logistics, but also to improved understanding of commerce and marketing systems.

Basically, auctioning agricultural products is a strictly sequential 5-step procedure, which is always the same:

- step 1: the supply is shown;
- step 2: the auctioneer sets a price, which is (much) higher than someone is willing to pay. This price is indicated on the clock;
- step 3: this price is lowered gradually by turning the pointer until a buyer indicates that he is willing to buy the goods for the price indicated;
- step 4: the auctioneer registers the transaction (the buyer's credit-number, the quantity he wants to buy, etc.);

- step 5: if part of the supply is left or if there is another supply, the procedure will start again.

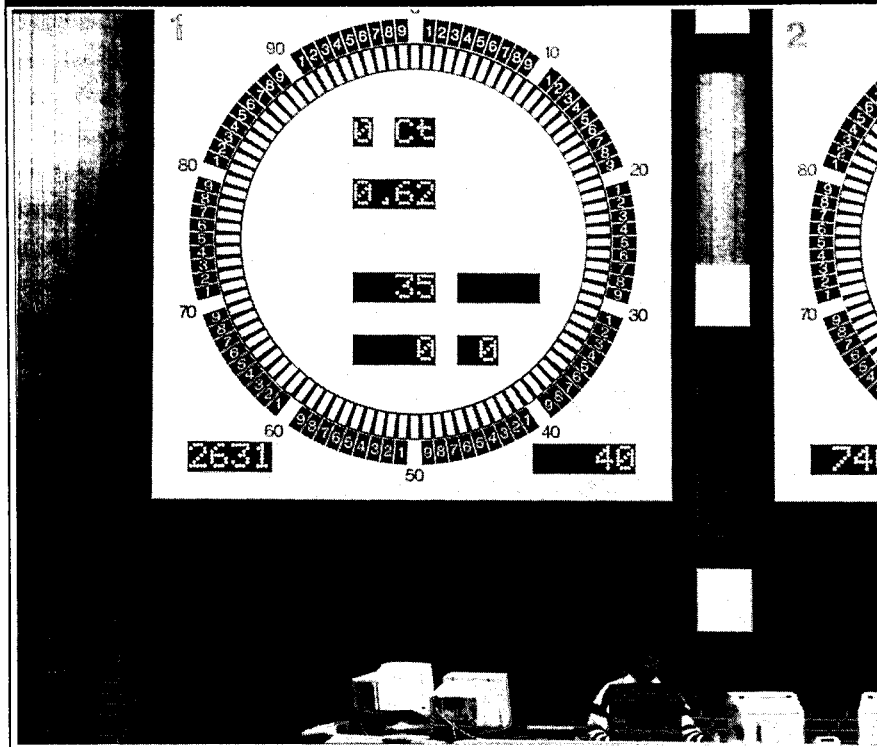
A rough outline of what "Tele-auction" means and how it is done

Tele-auctioning (in Dutch: Televeilen) is a method of merchandising used by the auctions in the Dutch fruit and vegetables sector.

The resulting profit which is gained by tele-auction is based on the theory that a concentration of supply and demand, will generally lead to higher prices. In order to bring more buyers together the approach was to create facilities in which buyers at different auctions would be able to buy from supplies at other auctions. By offering the supplies of all different auctions to all the auctions which take part in the tele-auction process, the concentration of the supply-side was achieved.

So in a tele-auction situation, different auctions, with their "own" buyers in the auction room participate. Those buyers can buy products from their "home auction" as well as from the other auctions that participate. In this way the buyers at each auction are faced with extra competi-

Figure 1 - A modern auction clock...



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tion because of the presence of buyers at the other auctions.

### Key elements of tele-auction

Tele-auctioning is explained by giving an example in which two auctions, A and B, intent to start selling their supplies together. In fact they each wish to sell their products to their own customers and to the buyers at the other auction.

Among other matters of importance, two factors are crucial in this process:

- The quality of the different supplies must be the same;
- The buyers at the other location must have the same information.

The first one is not a problem. CBT has developed an extensive quality program to achieve that e.g. class A-1 tomatoes in auction A (for example in southern Netherlands) equal the quality of the same class in auction B, eg, in North Netherlands. This system of classification is generally accepted.

The second factor can only be achieved by information and information technology (IT). Without a suitable communication in-

frastructure and standards for data and messages, tele-auction is not possible. There are hundreds of varieties of tomatoes. Not only is there a variety in types (flesh, round, cherry), but also in breeds and sizes. Moreover, different packages are used.

There are thousands of different fruit products, which may be shown. So it will be clear that reliable and correct data about the product that the auctions display "virtually" together are very crucial.

After the "logical" part of the information exchange is "tuned", the clocks and the communication infrastructure need to be tuned.

The basic procedure for auctioning in tele-auction-mode is, of course, the same as described in the 5-step procedure earlier.

In the next paragraphs a tele-auction-system is described, without going too far into details.

### The need for a central computer

One of the prime components of tele-auctioning is the ability to show buyers at all

participating auctions the (information about the) supplies per product and per auction. So, in the auction room display facilities are required to show the supplies of auctions A and B, which is, technically speaking, no problem. Display systems can be used with such dimensions that even the buyers in the back rows in the auction room can see what is shown.

But also data about the supplies need to be sent from auction A to B, and vice versa.

Tele-auctioning with just two auctions will pose no problem with respect to information. A telephone line will do. But if there is a third participating auction, or a fourth, fifth, ... information exchange from A to all participating auctions will require a lot of telephone lines, which is economically speaking not very attractive.

Using a central computer system, somewhere between A and B, is more convenient; not only for distributing the data, but also for various other reasons.

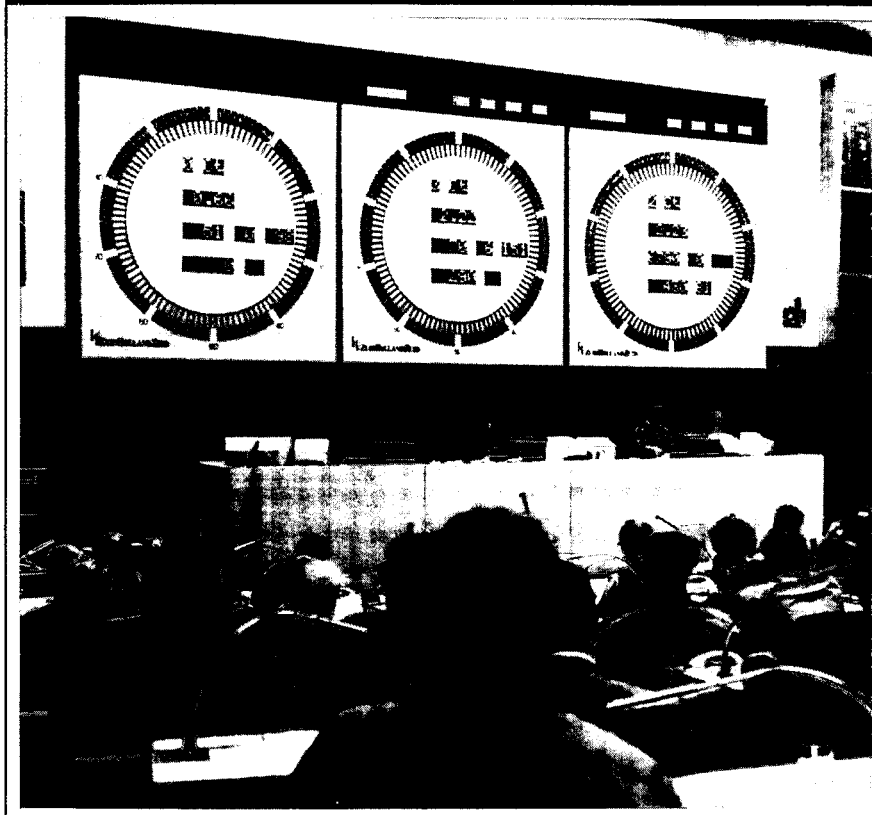
### Step 1: showing the supply

The central computer system, called the tele-auction centre ("Televeil-centrale"), receives information from A and sends it to all participating auctions. In the example this is only auction B, but the moment A and B's tele-auctioning activities prove to be successful, soon other auctions will be interested to become involved. Irrespective of the number of auctions involved, auctions A and B can exchange their information in the usual way. All participants send their information to the central tele-auction computer, which is equipped such that it is able to transmit this to all auctions that are connected.

### Steps 2 and 3: controlling the movements of the auction clock

In step two the auctioneer will give the auction clock a starting position, which equals a price no one would be willing to pay for that particular product. But, no matter how high this "asking price" is, the

Figure 2 - Clocks of one auction working together with clocks of other auctions. . .



which in return will stop its operation and indicate the price to be paid by the "button-er". A simple, yet very effective, mechanism.

In the tele-auction situation, the would-be buyers use the same buttons, but there is a difference. Pushing the button stops the local clock as well as the clock at the other auctions. The signal that normally stops the clock at the local auction, is now sent to the tele-auction centre as a message, which says: "Hold on everyone. Someone has indicated that he wishes to buy the goods for this price: ..." The central system again transmits this message and all clocks will stop instantly.

It is of course possible that someone at auction A pushes the button and someone else at auction B presses it at the very same moment. Because of the rule that the auctions only sell to one buyer at a time, some arbitrary mechanism is required to select one buyer from all the ones that pushed the button at all different auctions at the same time. Every individual clock sends a message to the central system. The price at

clocks at auctions A and B should be in the same position. This positioning can be done manually by an auctioneer at each auction. Doing it by means of electronic controls however is more convenient and more reliable. So, the tele-auctioneer at auction A, responsible for the tele-auctioning process, will fix the clock at a starting position while software-controlled electronic devices will place the clock at auction B in the same position.

Now, if there is no one to be found to pay the high price, all prices should be lowered simultaneously and gradually, so that every buyer has a chance to respond by indicating the wish to acquire the supply being sold. This is achieved as follows:

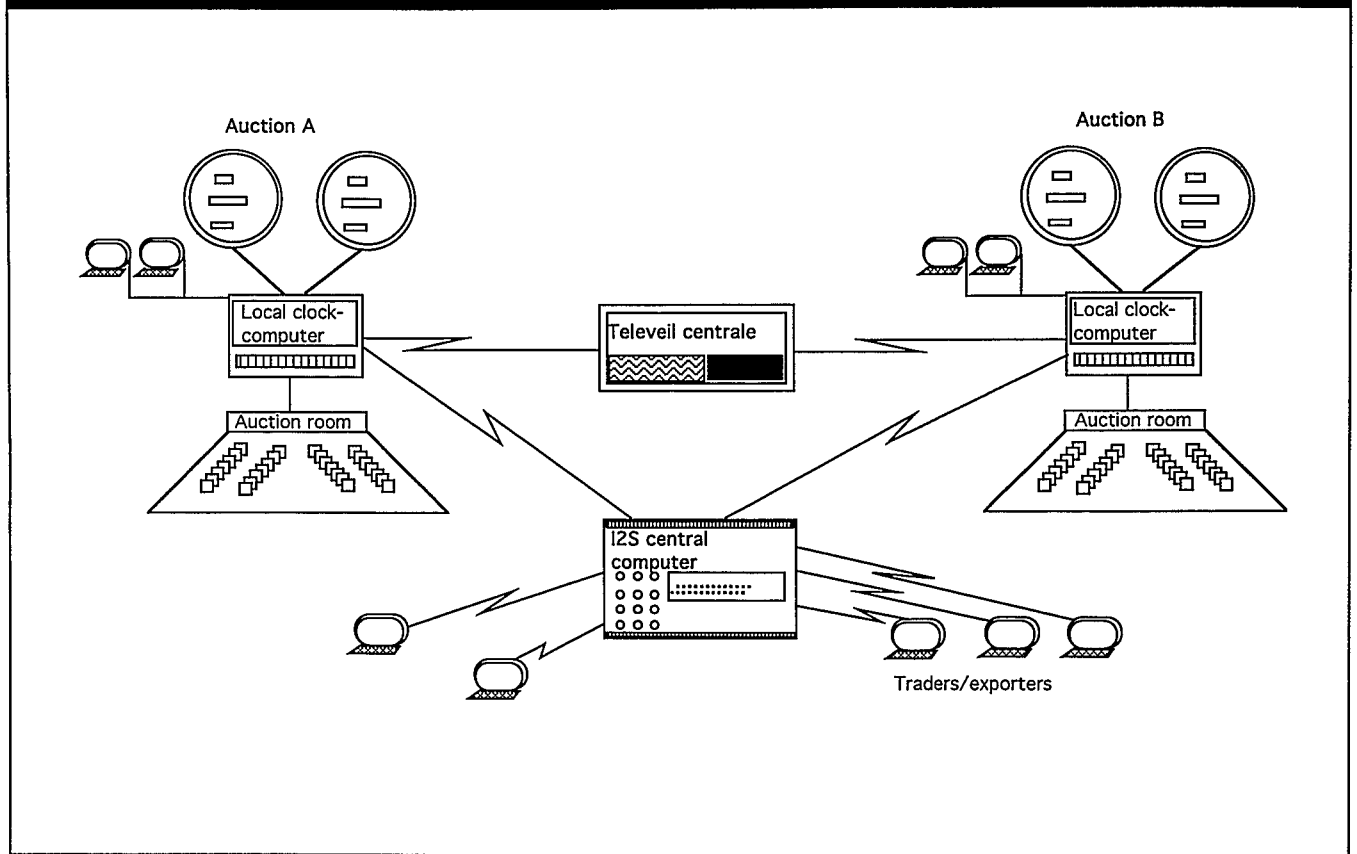
After each clock has received its clock-start-position-message, all clocks will wait a short period and then start the gradually price lowering movements. It is very important to realize that all auction clocks operate independently of the other clocks. There is no central clock-movement-control! Of course all independently running clocks should be adjusted in such a way that the pace of moving will be the same.

In the buyers' seats in the auction room there is this very important push-button. This button sends a signal to the clock

Figure 3 - Concentration in the auction room. Who is the first to push the button?



Figure 4 - Tele-auction and the networks



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which the clock is stopped is within that message. In fact it is not the price that is transmitted, but a value that corresponds with the time the clock has been running (from the moment it receives the starting message until it stops). This value is sent in milliseconds, and can be translated into a price. There is some software in the tele-auction centre that compares all messages received and decides which message contains the highest price. After that, the system sends a message to all auction clocks saying: It was at auction X where a buyer offered the highest price, which was Dfl ..... The others buyers are advised to push earlier. In the rare case that two or more buyers push the button at exactly the same moment (to a millisecond!) the values in the messages will be the same. In this particular situation the central system uses a kind of electronic dice to determine the buyer.

#### Step 4: The transaction phase

The price of the highest bid is displayed at all auctions. Because of the distance between the auctioneer and the buyer - who

may be at a different auction - an audioconnection (via a telephone line) via the tele-auction centre makes it possible for the buyer to indicate the required quantity. The auctioneer will register this order. The order data are then sent to the tele-auction centre where the remaining quantity of the supply will be calculated and new data about it will be distributed to all clocks, which in turn will show these data to the customers present.

The remaining supply will be auctioned in exactly the same way as described above.

#### Step 5: Another round

The process will continue until all supplies are sold and all buyers will go home in a great satisfaction of having bought products with such a high quality standard and of being involved in such a hi-tech process.

#### Aspects of dissemination

As described above tele-auction is not a process in which many data have to be dis-

seminated. Timing is the crucial aspect. This means that from a strictly technical point of view tele-auctioning should be as fast or as slow as normal auctioning. In reality the auctions are faced with a tele-auction process which is much slower than the ordinary one. There are several reasons for that, but the electronic devices are not to blame.

The data to be distributed are to be divided into information on supply and transactions. There is no other important information. To control the process of all running clocks, selecting the highest bidder is done by control-messages from the clocks to the central system and back. The development of the tele-auction concept was rather easy as far as data on information were concerned. As often, many exceptions occur. As in many situations, eighty percent or more of all effort is put into less than 20 percent of what, in a normal situation, will be used. Exceptions, exceptions. They are the really expensive part of developments.

It should be clear to the information managers that tele-auction is not an information system. A tele-auction system is a

kind of a process-control system with all the aspects of real time and data communication that mostly are involved in those systems. The amount of data is low, but the time in which things have to be done is short. This gives designers not much choice for hardware and operating systems. Real time and event-driven is what counts, which is also a hard part of the development.

## The network philosophy

As mentioned before the tele-auction process is supported by means of a central computer to which the Dutch auctions are connected. All data, and messages, and even the connections for the audio run via that central system. Therefore each auction has hired telephone lines for data transport and for the transport of the audio signals. Of course there are multiplexers to reduce the number of lines and consequently the costs.

Apart from the tele-auction network there is another network, with a central computersystem to which all Dutch auction clocks are connected. The clocks send data about prices, supplies, transactions and so on to that central computer. This computer, the so-called "I2S-centrale" (I for Inkoop=Purchasing and for Information, S for system), transmits those data to traders and exporters who buy at the auctions. The information provided in this way enables those companies to see in

their offices what is happening at the auctions (real time)!

So, all and all, there are a lot of telephone lines, modems, multiplexers, etcetera involved in datacommunication systems. With all computers and the very specific software one needs a strong organisation to ensure a proper operation.

## What's next?

When tele-auctioning was established (around 1987), personal computers were hardly available and the hardware and software revolution, which was caused by them, had not yet begun. Today a complete tele-auction-clock system can be run on a PC; even faster than was possible on its predecessors.

With the concept based on the central tele-auction computer it is nowadays possible to give each buyer a PC, enabling him to buy from his office. This is technically feasible. But there are some obstacles to be cleared away. First, there is the fact that some people believe that having buyers physically present in the auction room will offer higher prices or that there is a better control of the marketing process. Is this just an emotional (historical) feeling? Could be. But what, if not? Going back is possibly more difficult that just turn around. Nevertheless, buyers are expected to get the facilities to buy at any auction from anywhere.

And then, at that very moment, there will be the question: which borders will be borders? The Dutch border, the Belgian border? The Dutch exporters will not be very pleased if their international clients are able to buy all they need themselves. Of course they will have to solve a logistical problem, but hiring trucks is not that difficult. As a result supermarkets will get access to the clock, comfortably sitting in their chairs somewhere in a European Union country. This will provoke some heated discussions, particularly on the exporters' side. The grower will stick to his glasshouse. For him only the best price counts.

But apart from the possibility of running out of exporters there will be other changes as well. Is it not strange that organisations have used the same tool for merchandising and getting the highest prices for over 100 years? Is it not strange that the same tool is used for all situations? The auction clock is used irrespective of how much demand there is.

Recently the auctions and the CBT have started a discussion on their marketing strategies, the results of which are not very clear yet. But things may change and then there will be a lot of work to do.

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