



**NEAR EAST UNIVERSITY**

**FACULTY OF ECONOMICS  
ADMINISTRATIVE SCIENCES**

**INVENTORY MANAGEMENT  
AND THE CASE OF EKTAM LTD IN TRNC**

**GRADUATION PROJECT**

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## **ABSTRACT**

The process of change in the business environment is forcing the local companies to compete not only with the local companies but also with the foreign companies. Inventory management is one of the most important management tasks at the manufacturing business. Most of the organizations employ a specialist manager as the vice-general manager. The inventory manager must have very good contacts with all the managers at all level.

Just-in-time (JIT) manufacturing is used as a process towards eliminating waste to improve productivity and product quality. Successful inventory management means that the company buys and keeps and buys minimum of raw materials but never runs out. As explained earlier, it is not good to have excessive and unnecessary stocks of raw material since this would mean the waste of resources and also waste of area that can be used for better reasons. It is also very bad to run out of raw materials, since running out will mean loss of production time and unnecessary extra cost per unit of product. Just in Time theory is therefore the ideal situation that must exist in a production place.

The EKTAM company manufactured various type pf soft drinks mainly the Pepsi Cola. The production was made of same drink in many different alternative containers. The cokes are usually sold in different size cans and pet bottles. It was explained that the sales were very good and the canned and bottled cokes only stayed in the stocks for about 2 days. But there are some raw materials that had to be stocked at the warehouses. The company needs to improve the inventory

management system to increase its competitiveness in the small but highly competitive Cyprus market.

## **1. INTRODUCTION**

There is a change in the business environment in Cyprus due to some political and economic changes. As a small country there are many different companies who compete in the same line of business. The process of change in the business environment is forcing the local companies to compete not only with the local companies but also with the foreign companies. Now that the borders are opened up with the South Cyprus the consumers have the choice to shop from the south. Possible entry to the European Union will mean competition with the other EU member countries.

There are various ways to improve efficiency and increase productivity at a manufacturing organization. One important field of improvement is in the inventory management. This is additionally important in Cyprus since it is an island. A company in Turkey may hold only little stocks since they can easily purchase new raw materials as they need it. But in Cyprus, companies cannot do this they have to keep certain amount of inventory to avoid run-outs. Since the shipping costs are expensive it is also important to ship such quantities that the transportation costs are kept at minimal level.

The following project is about the inventory management and in particular Just in Time Inventory (JIT). After a careful evaluation and introduction of the JIT system a local company the EKTAM will be examined to see how much they use the inventory system. The first part of the report will be about the JIT system. Background and the details of the system will be explained. The report will be



followed by information about the EKTAM and application of the inventory system at this company. The report will end with suggestions and a conclusion.

## **2. JUST IN TIME**

Inventory management is one of the most important management tasks at the manufacturing business. Most of the organizations employ a specialist manager as the vice-general manager. The inventory manager must have very good contacts with all the managers at all level. He or she needs good communication with the operational managers who are actually at the production floor. They are the people who are managing the manufacturing and they know the stock levels better than anybody else. the inventory manager should also have good relation with the top managers since these are the people who are making strategic decisions, and their decision effects the buying and stocking of the inventories.<sup>1</sup>

Successful inventory management means that the company buys and keeps and buys minimum of raw materials but never runs out. As explained earlier, it is not good to have excessive and unnecessary stocks of raw material since this would mean the waste of resources and also waste of area that can be used for better reasons. It is also very bad to run out of raw materials, since running out will mean loss of production time and unnecessary extra cost per unit of product. Just in Time theory is therefore the ideal situation that must exist in a production place.

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<sup>1</sup> Asaka (1990) Handbook of Quality Tools: The Japanese Approach, productivity Press, Portland OR.

Just-in-time (JIT) manufacturing is used as a process towards eliminating waste to improve productivity and product quality.

Just-In-Time (JIT) is an operational and managerial system developed to eliminate waste in non-value added operations by minimising inventory in the supply chain, and involving employees and suppliers in the operational strategy.

The managerial system developed by the Japanese emphasizes organizational values, long-term strategic goals and employment, two way communication (top down and bottom up), commitment, loyalty, and understanding of the systems implemented into the manufacturing process. This management style has shown success in the areas of production and product quality.

The philosophy of JIT production is that each stage of manufacturing will be completed just in time for the next process (for example, purchasing materials just in time to be transformed into fabricated parts, finishing these fabricated parts just in time to go into subassemblies, and so on until the product is sold) and that the minimal amount of workers, equipment and materials are used in these processes. The process of frequently moving small quantities to meet immediate demands has become very effective and efficient.<sup>2</sup>

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<sup>2</sup> Cheng, T.C.E., S. Podolsky. JUST-IN-TIME MANUFACTURING - AN INTRODUCTION. 2nd ed. London: Chapman & Hall, 1996



Just-In-Time (JIT) is an operational and managerial system developed to eliminate waste in non-value added operations by:

- minimizing inventory in the supply chain; and
- involving employees and suppliers in the operational strategy.

An essential part used to run the operational system is the Kanban - a pull system of production/materials control. The Kanban method uses a ticket or card to control immediate material flow between a work station and another down stream; pulling material from another station when needed instead of constantly pushing materials to the next process upstream.

The managerial system developed by the Japanese emphasizes organizational values, long-term strategic goals and employment, two way communication (top down and bottom up), commitment, loyalty, and understanding of the systems implemented into the manufacturing process. This management style has shown success in the areas of production and product quality.

### **3. USES OF JIT**

Just-in-time (JIT) manufacturing is used as a process towards eliminating waste to improve productivity and product quality.<sup>3</sup>

The philosophy of JIT production is that each stage of manufacturing will be completed just in time for the next process (for example, purchasing materials just in time to be transformed into fabricated parts, finishing these fabricated parts just

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<sup>3</sup> <http://hyperserver.engrg.uwo.ca/es492b/Lectures/Lect12/tsld004.htm>

in time to go into subassemblies, and so on until the product is sold) and that the minimal amount of workers, equipment and materials are used in these processes. The process of frequently moving small quantities to meet immediate demands has become very effective and efficient.

The system also indirectly affects product quality which is improved with management strategies. As a management practice, concern is placed on long-term commitment and goals. Employees and lower level managers become involved in finding problems allowing them to make quick decisions saving time and larger problems down the line.

Since this type of information flows from the bottom up it has been determined that employees become more alert to their job, feeling more responsible to the quality of their product and trusting of new technologies that upper management may want to implement.

#### **4. THE BENEFITS OF JIT**

An integral part of JIT is having a company involved with their suppliers, thereby insuring the quality of a product. In this regard, a company will benefit from limiting their number of suppliers placing accountability, Requiring<sup>4</sup>;

- high levels of quality

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<sup>4</sup> Imai (1986) Kaizen: The Key to Japan's Competitive Success, McGraw-Hill publishing company, New York

- delivery performance (i.e. consistency of the supplier to deliver frequently, in small and exact amounts, and on time)
- suppliers in nearby locations; and
- reduction of costs expected for attaining such a large account

JIT is also beneficial to the supplier laying grounds for a mutual and cooperative relationship;

- They attain a large and long term flexible contract with the high probability of contract renewal
- They are often involved with the buyer in the early stage planning of the product giving them a "stock" in it's overall success and quality, which will reflect back on them and their product.

Results you can expect from implementing JIT are improvements with;

- scrap costs
- purchase item inventory
- vendor response time
- expediting time
- average delivery lead time
- purchase material turnover time
- delivery performance
- average delivery lead times

The just-in-time philosophy was created by Japanese manufacturers and became a "model" for successful management practice. It gained recognition in the Western

World, noticed as a better way of working with already existing product and control technologies.<sup>5</sup>

Just-In-Time has been traditionally used by large companies with consistent order rates and works best with a large scale mixed production environment. However, simplified Kanban systems have been proven as beneficial to smaller companies maximizing time and space in work areas.

## **5. INVENTORY CLASSIFICATION**

To manage inventories effectively, we should have a clear understanding of what we are controlling.

What are the different item types? These should be classified by inventory segment. Typically, these are: raw materials, purchased components, manufactured subassemblies (frequently referred to as intermediates in the chemical and other process industries), work in process, packaging materials, and finished goods (which may be further subdivided to reflect stocks at the manufacturing plant and at distribution centers and branch warehouses).<sup>6</sup>

How many different items are there in each inventory segment? This provides information as to the magnitude and complexity of the inventory management effort; a small number of different items is easier to manage than a large number.

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<sup>5</sup> <http://www.axptbs.com/pubs/whole/oct98/explore.htm>

<sup>6</sup> Allan Harrison, Just In Time Manufacturing in Perspective, Prentice Hall, 1992

What is the unit cost of each item? Since the cost of inventory investment is a major consideration in making decisions regarding order quantities and safety stocks, the cost of each item should be available to the inventory manager.

Even under the most ideal just-in-time conditions of minimum lead times and minimum lead times and minimum setup or ordering costs, inventory investment is an important factor which must be considered by the inventory manager.

What is the anticipated annual demand for each item? If there are more than a few items in each inventory segment. An ABC analysis of each inventory segment will be of significant help in establishing controls and setting priorities for effective management of all items.

## **5.1 PURCHASED ITEMS**

In a just-in-time environment, raw materials and other purchased items should be delivered by the supplier when they are needed. A blanket purchase order or other suitable form of basic agreement should cover the terms and conditions for procurement. Delivery of the item should be direct to the point of use in the manufacturing plant; any double handling of material should be avoided.



The supplier should ensure a smooth flow of material to support production. This requires optimum communication and coordination between the manufacturing plant and the supplier.<sup>7</sup>

A direct relationship between the Production Control Department of the manufacturing plant and that of the supplier is effective. The supplier should be considered by the manufacturing company as an extension of the plant and should be included in all planning which involves his products. Purchasing should authorize specific individuals in production to represent the company on matters pertaining to schedules and delivery quantities.

Several techniques exist for controlling the flow of material from the supplier to the manufacturing company. The specific technique should be selected which will best suit the implementation of the just-in-time concept for the particular item being purchased. Automatic inventory replenishment by the vendor is a technique where the supplier determines the need for required materials based on frequent deliveries to the plant. Depending on the nature of the production process as well as the material involved, this could range from many times a day to a less frequent interval. Visual review of existing inventory by the supplier will determine how much to deliver.

The method of inventory control is not foreign to U.S. commerce and industry; visit a supermarket and see how the baker delivers his goods. He replenishes the

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<sup>7</sup> Business Open Learning Archive at <http://www.bs.wlihe.ac.uk/~jarvis/bola/jit/jit.html>



baked goods based on a visual review of what is on the shelves. The same is true for soda and candy vendor machines. Those using oil to heat their home are certainly familiar with this type of inventory system; the driver comes by the house periodically and fills the tank.

Another technique is verbal ordering by production. This is an approach instituted in 1972 at Copeland Corporation for corrugated cartons, where the shift foreman would phone the supplier's local warehouse and order materials for the next shift. Of course, the buyer-supplier relationship must be one of mutual trust and confidence. Under the just-in-time concept, the pipeline is kept lean. Shortages as well as overages in quantities delivered will be noted quickly.<sup>8</sup>

There should be no need for incoming Quality Control inspection. The vendor's quality must be such that incoming inspection of materials can be eliminated. Where required, as in the pharmaceutical industry, lot integrity should be maintained by the identification of each lot by the vendor and continued traceability through the manufacturing process.

## **6. TRANSPORTATION METHODS**

Implementing just-in-time may result in increased transportation costs due to smaller lot sizes and more frequent deliveries. However, in some industries such as chemicals there are significant trade-offs between the economy of longer lead time and less flexible rail shipments versus more frequent tanker truckloads. Each

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<sup>8</sup> Sullivan L.P. (1986) " The Seven Stage in Quality Control," May, vol. 3

of these cases must be examined on its own merits and on a continuing basis to determine the optimum solution.

### **6.1 INTERPLANT TRANSFERS**

The methods of inventory control of materials and components from vendors apply equal well to those obtained from a feeder plant in the company. It is of utmost importance to have excellent communications between the plants to ensure timely and balanced material flow.

### **6.2 MATERIAL REQUIREMENTS PLANNING**

Just-in-time requires flow of material in the exact quantity required and at the exact time; the key word is "exact." Regardless of the specific method used to achieve this exact material flow, there must be advance planning to ensure that material is available when needed. Material requirements planning is the best technique to accomplish this.

## **7. IMPLEMENTATION**

The basic steps required for implementation of inventory management in a just-in-time environment can be summarized as follows:

- Review segmentation of the inventory by item type; ensure that all items have been properly classified.
- Ensure that the unit cost is stated for each item
- Establish the anticipated annual demand quantity for each item.

- Run on ABC analysis for each inventory segment.
- Assign appropriate ABC code to each item.
- Establish blanket purchase orders, purchasing agreement, or contract for selected items with qualified vendors.
- Authorize individuals in production to release vendor delivery quantities against blanket purchase orders, purchasing agreement, or contract.
- Establish inventory policy code for each item based on the method of inventory control and the method of transaction reporting and recording.
- Review and establish minimum economical order quantities and safety stocks required by just-in-time production.
- Measure inventory performance to determine effectiveness of just-in-time production and inventory management.

## **8. LIMITATION OF JUST IN TIME**

Regardless of the great benefits of JIT, it has its limitation, according to Cheng(11-14), JIT has the some major limitations:<sup>9</sup>

- Culture Differences: The organizational cultures vary from firm to firm. There are some cultures that tie to JIT success but it is difficult for an organization to change its cultures within a short time. Traditional Approach The traditional approach in manufacturing is to store up a large amount of inventory in the means of backing up during bad time. Those companies rely on safety stocks may have a problem with the use of JIT.

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<sup>9</sup> Cheng, T.C.E., S. Podolsky. JUST-IN-TIME MANUFACTURING - AN INTRODUCTION. 2nd ed. London: Chapman & Hall, 1996

- Difference in implementation of JIT: Because JIT was originally established in Japanese, it is somehow different for implementing in western countries. The benefits may vary.
- Loss of individual autonomy: This is mainly due to the shorter cycle times which adds pressures and stress on the workers.
- Loss of team autonomy: This is the result of decreasing buffer inventories which lead to a lower flexibility of the workers to solve problem individually.
- Loss of method autonomy: It means the workers must act some way when problems occur, this does not allow them to have their own method to solve a problem.
- JIT success is varied from industry to industry: Some industries are benefit more from JIT while others do not.
- Resistance to change JIT involves a change throughout the whole organization, but human nature resists to change. The most common resistance are emotional resistance and rational resistance. Emotional resistance are those psychological feeling which hinder performance such as anxiety. Rational resistance is the deficient of the needed information for the workers to perform the job well.

Some other limitations are pointed out by Melnyk and Denzler(428-429):

- Relationship between management and employees is important A mutual trust must be built between management and employees in order to have effective decision making.

- Employee commitment Employees must commit to JIT, to enhance the quality as their ultimate goal, and to see JIT as a way to compete rather than method used by managers to increase their workload.
- Production level JIT works best for medium to high range of production volume.
- Employee skill: JIT requires workers to be multi-skilled and flexible to change.
- Compensation Compensation: should be set on time-based wages. This allow the workers to concentrate on building what the customers wants.

## **9. JUST IN TIME TOTAL QUALITY MANAGEMENT**

Just in time is a mean of market and factory management with in a humanistic environment of continuing improvement. According to Imai(1986), " Kaizen means improvement. Moreover it means continuing improvement in social life, and working life. When applied to the factory Kaizen means continuity improvement involving everyone-managers and workers alike."<sup>10</sup>

When it comes to total Quality management, Japans' strong industrial reputation is well known around the world. Total quality control is the system, which Japan has developed to implement Kaizen or continuing improvement. Total quality

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<sup>10</sup> Imai (1986) Kaizen: The Key to Japan's Competitive Success, McGraw-Hill publishing company, New York.



control is a forty-year plus improvement on the teachings of Deming, and who brought the concept of quality to Japan. The traditional description of just-in-time is a system for manufacturing and supplying goods that are needed. The people in the workplace, using their mind, gaining experience, and sweating their way to improvement, don't define just in time this way. For total quality management, Just-in-time means to decrease losses. When just in time is internalized, the waste around a factory will go away. To do this, traditional and fixed ideas are useless. As I mentioned, Japan has progressed industrially because of holding on to the workplace and taking full advantage of total quality management. According to Asaka (1990), the seven new tools play a vital role for the Japanese society on quality control technique development. There are several important tools for total quality management control:<sup>11</sup>

1. relations diagram
2. Affinity diagram
3. Systematic diagram ( Tree diagram)
4. Matrix diagram
5. Matrix data analysis
6. Process derivation program chart
7. Arrow diagram

From seven tools, it helps Japanese product quality to meet following total quality management:

- The ability to eliminate defective products

- The ability to improve productivity
- The ability to complete tasks on time

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<sup>11</sup> Asaka (1990) Handbook of Quality Tools: The Japanese Approach, productivity Press, Portland OR



- The ability to increase product value-driven
- The ability to completely eliminate waste
- The ability to reduce lead time and inventory cost

Sullivan (1986) note that "the seven tools for developing total quality management is very important." "Because each tools use a reptilians diagrams to examine the problem solving process." Without it, the manufacturing of Japanese system must be not constantly to improve quality, reduce cost, decrease throughput time and lower in process inventory.

Total quality management based on seven tools, extended the measurement concept from implementation on the production quality control to the design of the whole process to frying excellent products to customers. Therefore, it is without doubts that through seven important tools process which frying forth or sustain the product are made more competitive. Suppose customer satisfaction and cost are selected as the major quality attributions, the focus of total quality management is to improve calve, and hence competitive advantage.

## **10. THE EKTAM COMPANY**

EKTAM was established in 1989 as a ltd company EKTAM is a part of a multinational company FRUKO TAMEK, which is based in Turkey and they are involved in bottling and canning Pepsi Cola, fruit juices etc. EKTAM has Turkish

Cypriot Shareholders as well. It is a well organized organization, which is run efficiently.<sup>12</sup>

Main establishment of Ektam is conveniently situated near the Nicosia Industrial Zone, on the main road of Dr. Küçük Bulvarı. This location contains the administration offices. It also contains a warehouse and a distribution spot. The place is almost in the center of TRNC and from this point they can distribute to whole island. The Ektam also have production facilities in Karpaz and a regional warehouse-distribution center in Güzelyurt.

EKTAM is a foreign direct investment of Fruko Tamek of Turkey with the Turkish Cypriot shareholders mainly the Şemsi Kazım. Şemsi Kazım was a member of parliament for many years and he is one of the wealthiest men in TRNC: Fruko Tamek is part of the Koç Group which is the biggest business organization in Turkey.

EKTAM was established to meet the need of the Turkish Cypriot community in the field of soft drinks. Until the EKTAM was established there was only one manufacturer and bottler of coke products and there was limited amount of imports. The consumer did not have much choice. EKTAM provided quality products and encouraged competition and development in their range of products.

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<sup>12</sup> Personal Interview, Erol Yılmaz, EKTAM General Manager, August, 2004.

EKTAM was established as a ltd company. There are many shareholders but the majority of shareholders are the big partners Şemsi Kazım and Fruko Tamek.

Pepsi-Cola is one of the major production unit of soft drinks in TRNC. Pepsi is bottled by the first and one of the oldest bottling company in TRNC, Ektam Ltd. They enjoyed a monopoly for many years. In addition there are many other brands which are imported. Pepsi is still well distributed all over TRNC. There are people who believe this is their nostalgic traditional drink and there are some regretting that they had to drink only this for many years, and now consumes the other brands.

Products of Ektam are the soft drinks. Although the organization makes lemonade type drinks, which are concentrated, the main product is the soft drinks. These are in cola, orange and gaseous form. The products are shaped in many different ways. There are different alternatives for different consumption purposes. There are large bottles for the family and parties. There are small bottles ready for consumption and there are the canned cokes. These come in different shape and different prices.

The coke business is a seasonally effected business. There are pick seasons when the consumption is high and there are low seasons when there are hardly any consumption at all. Company has the task of producing the appropriate product in appropriate quantity in accord with the seasonal variations.

The taste and ingredients of the soft drinks hardly ever change. Specially in case of Pepsi which is well known in TRNC, the management is specially careful about the taste, since there are many consumers who are fond of the taste and will not drink any other brand.

In addition to normal pricing theory the organization has to take into consideration the seasonality problem of the product. Normally organizations have to take a few points into consideration in respect of pricing. First consideration is the market situation. Along with many other similar products there are also alternative products the consumers can choose. These are beer, fruit juice etc. The second consideration is the cost. Company has to make profit so that they can carry on with their operations. A special aspect has to be also considered in TRNC in respect of pricing, and that is the inflation and devaluation of Turkish Lira. Due to high inflation the prices must be frequently adjusted. Since there is a raw material imports involved in production the currency variations must also be closely dealt with.

Seasonality aspect of the business is also important factor in pricing. Unlike other ordinary business products of Pepsi are usually sold in summer and the sales are very low in winter. But the costs of the company still goes on. There are fixed costs to take care of and also minimum amount of labor which has to be kept to have them when they are needed.



Objective organization is to distribute their products to the remotest corner of the country. They use two channels of distribution. One is for a far place where they use 15 big lorries. these lorries visit the customers every two days they going around the distribution area and distribute the product. Another channel is the distribution to the nearer places with smaller vehicles. There are 5 small "VAN" type cars for the city center and same places which are near the city. They also visit the customers in every two days. The control of these distribution is made by sales chief and those chief always control the sales person they go to the right place in right time or not and give good service to the customers and solve the problem face to face.

Distribution to retail outlets is made by trucks with a driver/salesman and one to three helpers. The driver/salesman has generally had experience as a helper, and is responsible for inventory on the truck and collections. The driver/salesmen are compensated by one of three methods:

- (1) straight commission,
- (2) salary plus commission, or
- (3) commission as an independent agent-an average income is 1,100,000,000 TL per month.

The predominant method of compensation among the plants in this kind of business are salary plus commission. Some bottlers sold the driver/salesmen their trucks and dealt with them on an agency basis. The amount of compensation for

driver/salesmen varied from franchise to franchise, but in most instances the driver/salesmen earned about twice as much as the helpers.

The responsibilities of the helpers included sales work. In fact, it appeared in some cases that personal contact with the retailer was most frequently made by helpers. In other words, the lowest-paid person in the sales/delivery team was responsible for the sales function. One franchise recognized this problem and had a system that required that the driver/salesmen visit each customer on the route at least once a week.

The company does not use any big advertising because of the small market size and the product of the company is known by every one anyway. They use advertising as (signboard) which they put it in some place in the city entry or leaving or some other places and also with some schools and clubs brochures and magazines they use it for their advertising and also they write name of cafe, grocery, butcher, market name on the signposts.

There are some public relation activities by the organization, that they supply boxes of cokes for charitable activities.

The corporate objective of the organization is to continue to hold the large market share they have traditionally and also improve their growth rate. As a new mission the management is considering to penetrate large offices and establishments. As well as certain places like café and grocery shops, large amount of cokes are



consumed at the governmental offices and private offices. The organization is considering to use coke machines or coke refrigerators if necessary.

Pepsi is aiming to sell to everybody at every corner of the country. With their new idea about the distribution of coke machines or coke refrigerators however they are aiming at the offices where there are many people working.

Consumers need refreshments at the right temperature when they have their breaks at work. The consumers need in certain quantities. Men usually consume larger quantities than women. It is important to have our brand ready and available for the consumers, so that they prefer our cokes.

## **11. INVENTORY MANAGEMENT AT EKTAM**

As the company was visited it was apparent there were no obvious stock management. System. The company manufactured various type pf soft drinks mainly the Pepsi Cola. The production was made of same drink in many different alternative containers. The cokes are usually sold in different size cans and pet bottles. It was explained that the sales were very good and the canned and bottled cokes only stayed in the stocks for about 2 days. But there are some raw materials that had to be stocked at the warehouses. There are many different raw materials and containers that needs to be stocked for manufacturing. The company adopted the FIFO (First in First Out Inventory system). According to this system the concentrates and the other time limited products are put in use according to their

date of delivery in order to avoid expiry. Following are the raw materials and items that are used for bottling and canning at the EKTAM:

- Concentrates: (Pepsi, Pepsi light, Twist, Yedigün, 7 Up, Tonic).
- Empty cans (250ml: Pepsi, Pepsi light, Twist, Yedigün, 7 Up, Tonic; 350ml: Pepsi, Pepsi light, Twist, Yedigün, 7 Up, Tonic, Fruko, Charger)
- Preforms ( plastics for pet bottles
- Taps
- Plastic taps
- Printed paper rappers
- Flat cartons
- Plastic Shrinks
- CO2
- Glass bottles
- Sugar

Import of the above materials are made in various ways. For example the sugar is obtained from spot markets. The price of the sugar is not fixed it changes due to international supply and demand conditions. The company aims to buy sugar when the spot price is low.

The prices of all the other inputs are more less fixed in dollar prices. The company knows the amount of time that it takes for delivery of each input. For example the delivery of concentrates take up to two months. The company therefore estimates

the time for reordering without running out of stock. The concentrates are obtained from Ireland. The company works with three months stock to make sure that they do not run out of stock. The concentrate that is needed in August is ordered in April. The amount of order is determined by looking at the orders in the previous year. An addition is made to this figure by estimating the increase in the sales. The average stock in the rest of the inputs is around 1 month.

#### **Sales By Regions(It)**

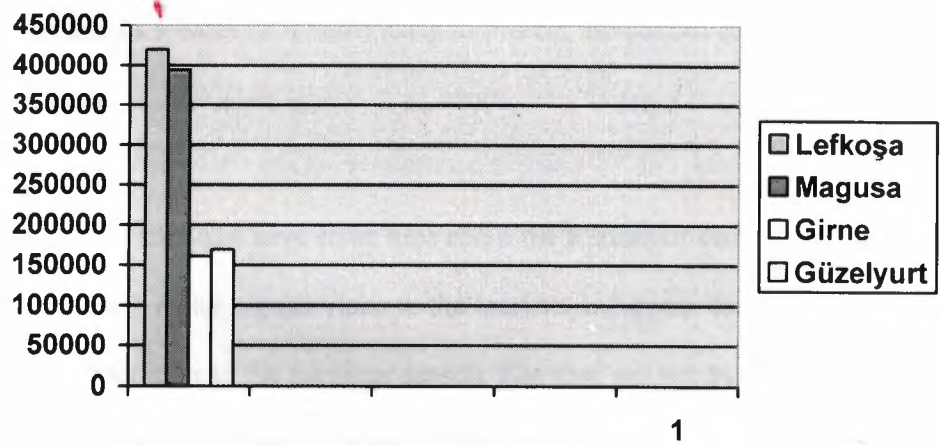
Year/Region	Lefkoşa	Girne	Magusa	Güzelyurt
1995	62669	22722	42748	1566
1996	399491	165494	345481	171200
1997	450684	168943	371021	207842
1998	502713	194233	454486	232076
1999	473256	182987	423499	218468
2000	419910	160973	394338	169611

1995-2000 AMOUNT OF PRODUCT SOLD (TOTAL including the villages)

YEAR	AMOUNT (liters)
1995	154272
1996	1162396
1997	1278656
1998	1484193
1999	1396719
2000	1235782

Sales

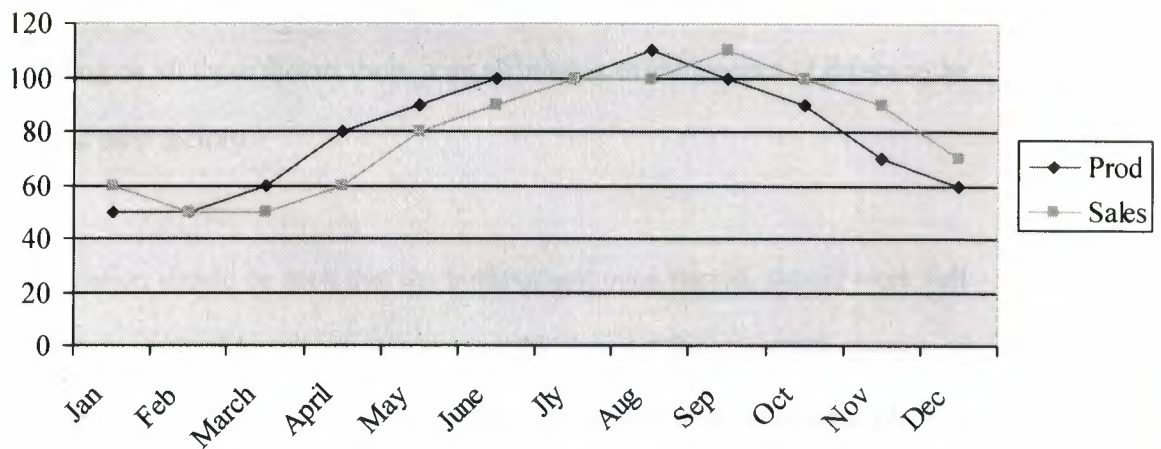
Regions



## SALES vs PRODUCTION

Monthly Production X1000 lt.

	Jan	Feb	March	April	May	June	Jly	Aug	Sep	Oct	Nov	Dec
Prod	50	50	60	80	90	100	100	110	100	90	70	60
Sales	60	50	50	60	80	90	100	100	110	100	90	70





## 11.1 FORECASTING

Forecasting is the process of estimating future quantities required, using past experience as a basis. It is fairly easy to predict the pattern of demand for some stock lines.

Managers of EKTAM have some idea about the amount of demand in the coming seasons. They make regular visits to the markets and guess the quantity that they can sell in addition to the previous season. But they are not the only actors in the field. There are other bottlers as well. There are also imported drinks from Turkey and from the rest of the world. So, amount of soft drinks which will actually be needed depends on many things such as;

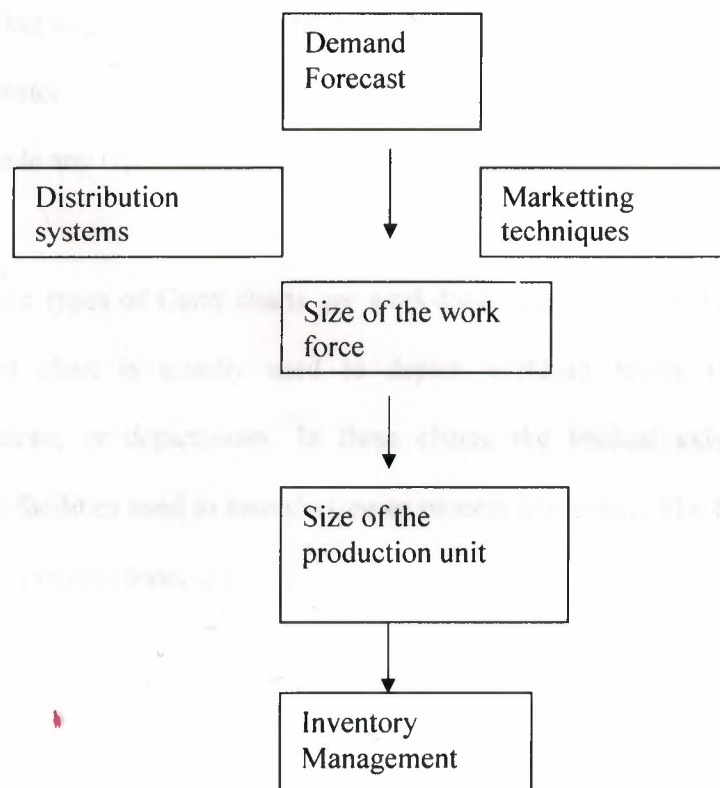
- the seasonal weather conditions,
- new entries into the sector,
- market conditions in the targeted markets, and
- price levels of the competitors.

Depending on all these factors there is an estimation of the amount of drinks to be packed at each factory.

Ideal situation should be such that the bottling unit once started, should work full time and in shifts. My advice is not to really forecast for a certain amount of products but better to make sure that enough concentrates will come to the plant to keep the workers busy for the whole season.

I suggest that the organization adopts just in time method in forecasting.

Forecasting allows managers to make decisions about the purchase of raw materials and other necessary articles necessary for production. There are various systems and approaches to inventory management. The most common and best known philosophy of inventory system is the JIT, the Just in Time System. Elements of the JIT approach have been widely employed for many years in high volume mass assembly organisations. It has probably always been recognised that stockholding is expensive, and that efforts to match the rate of supply of components and assemblies to the rate of their demand or consumption are likely to be worthwhile. Nevertheless, it was the Toyota company in Japan who developed the formal concepts associated with JIT in the 1960s. During the 1970s many other Japanese concerns started to employ JIT ideas, and towards the end of the decade the approach was beginning to be appraised, and in some cases tentatively adopted, in North America and Europe.





As the above diagram suggests, most of the decisions are made after the demand estimation is made.

EKTAM has a rigid but not a flexible working system. They work in shifts. There are three shifts in a day. The first group work in the normal working hours. The second group comes in when these finish. Finally the night shift takes over and they continue until the morning. They take turns in the shifts. Workers that work at the night shift for a week, work at the day shift the week after.

## **11.2 SCHEDULING SYSTEM**

Scheduling is a basic operational management responsibility which deals with timing of production.

Scheduling methods which is used at the EKTAM is the Gantt charts. Named after its originator, Henry L. Gantt, Gantt charts are simple bar graphs that can be used to schedule any type of operation.

Two basic types of Gantt charts are work-load charts and scheduling charts. A workload chart is usually used to depict workload levels for equipment, workstations, or departments. In these charts, the vertical axis usually lists different facilities used to manufacture or process job orders. The horizontal axis usually represents time.

The chart depicts the timing requirements for each job. The time estimates used in Gantt charts are usually obtained from standard time estimates based on the job.

Gantt charts can dynamically adapt to scheduling requirement changes as they occur in the operations management system.

A Gantt scheduling chart is used to track the progress of jobs as they pass through various departments in an organization. The vertical axis of these charts usually lists the departments in the sequence that jobs generally flow through them. The horizontal axis represents time.

### **11.3 Operations Scheduling**

In all types of operations, the sequencing of jobs is a critical scheduling activity. Operation sequencing is a scheduling activity that is necessary to minimize the total time it takes to process a batch of job orders, improve the efficiency of an operation, and minimize the processing costs of a fixed number of jobs over a given period of time. When jobs go through only a single stage of production, they are scheduled one after another. If jobs go through two or more stages of production (for example, two or more departments), we run the risk of idle time occurring in some of the later stages or departments.

In sequencing jobs we determine the order in which they will enter the production system. Once a job enters the first stage of the production process it can only go on to the second stage when the second stage is free to accept it. In scheduling orders we therefore structure only a single sequence of jobs to enter the first stage

of production. Our objective in job sequencing is to minimize idle time; in doing so, we minimize the total time it takes to process a set of jobs. The total time to process a set of jobs represents the time from when the first job enters the first stage of the system for processing to the time when the last job leaves the second stage of the system. We call this time period job flow time or make span.

#### **11.4 INVENTORY CONTROL**

EKTAM is a bottling business. The season is very sensitive and all the operations should be finalized according to the schedule. It is very important that they do not run out of materials or inputs of any kind. Stock outs are unwanted for this organization. Stockouts are expensive. If the inventory item is finished goods, the customer may buy the goods from someone else; therefore, the profits on the sale will be lost. Even if the customer is willing to wait until the goods arrive, some goodwill is lost. If a firm is often not able to supply goods when customers want them, its reputation suffers and it will lose business-more business than just the orders that were not filled for lack of inventory.

Stockouts of raw materials or work-in-process can cause the production process to stop. This will be expensive because employees will be paid for time not spent in producing goods or, if they are temporarily laid off, the firm will be assessed higher unemployment taxes. Some production processes are so expensive to shut down that management will go to great lengths to avoid running out of raw materials. There exists a company whose business is flying parts to automobile assembly plants so that they won't have to shut down when they run out of a

critical item. The cost to the automobile manufacturer of having parts flown in by private jet planes can be several times the cost of the parts themselves. However, paying the high cost of transportation is preferable to shutting down an entire plant.

### **11.5 INVENTORY CONTROL APPLICATIONS**

To avoid stockouts, EKTAM maintain safety stocks of inventory. Safety stock is the minimum level of inventory desired for an item given the expected usage rate and the expected time to receive an order. If an order is placed when the inventory reaches 150 units instead of 100 units, the additional 50 units constitute the safety stock. The manager expects to have 50 units in stock when the new order arrives. The safety stock protects the firm from stockouts due to unanticipated demand for the item or to slow deliveries. Increasing the amount of inventory held as safety stock reduces the chances of a stockout and therefore reduces stockout costs over the long run. The level of inventory investment is, however, increased by the amount of the safety stock.

The best level of safety stock for a given item depends on how much a stockout costs and on the variability of usage rates and delivery times. If the usage rate and the delivery time can be forecast with a high degree of accuracy and if the cost of a stockout is small, then little or no safety stock will be needed. If the circumstances are not so favorable, then a significant investment in safety stock will be desirable.



This is a very important function of the managers of the all levels. Once a year they get together at the General managers office to submit their lists of materials that are needed for the next season. As explained earlier, the organization is not so much worried about the cost or expenses, but what is more important is to keep the business going at the full capacity while the season is on.

## **12. CONCLUSION**

Just-in-time will change our conventional thinking concerning the management of inventories and streamline our methods for inventory control. Proper selection and implementation of these methods will yield substantial benefits by improving customer service, shortening delivery lead times, and significantly reducing inventory investment. It does not, however, eliminate the need for sound inventory planning.

Inventory management is one of the most important management tasks at the manufacturing business. Most of the organizations employ a specialist manager as the vice-general manager. The inventory manager must have very good contacts with all the managers at all level. He or she needs good communication with the operational managers who are actually at the production floor. They are the people who are managing the manufacturing and they know the stock levels better than anybody else. the inventory manager should also have good relation with the top managers since these are the people who are making strategic decisions, and their decision effects the buying and stocking of the inventories.



Successful inventory management means that the company buys and keeps and buys minimum of raw materials but never runs out. As explained earlier, it is not good to have excessive and unnecessary stocks of raw material since this would mean the waste of resources and also waste of area that can be used for better reasons. It is also very bad to run out of raw materials, since running out will mean loss of production time and unnecessary extra cost per unit of product. Just in Time theory is therefore the ideal situation that must exist in a production place.

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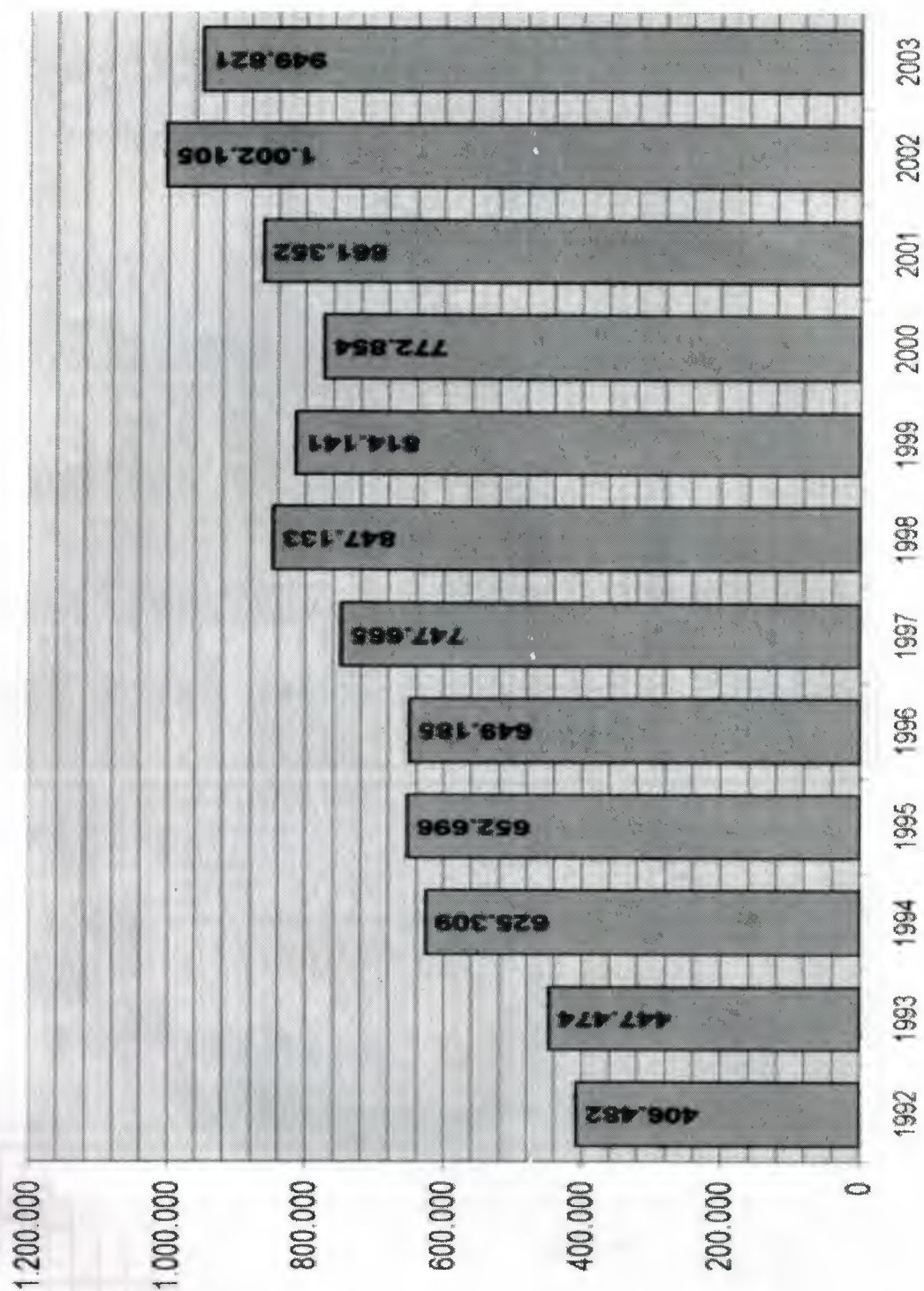
## Appendix



# EKTAM KIBRIS LTD.

GÜNÜK STOK										TARİH: 03.08.2004									
GİNSİ	LEFKOŞA	MİGÖSA	TOPLAM	GİNSİ	LEFKOŞA	MİGÖSA	TOPLAM	GİNSİ	LEFKOŞA	MİGÖSA	TOPLAM	GİNSİ	LEFKOŞA	MİGÖSA	TOPLAM				
PC25	1575	469	2044	PC60	231	131	362	TV1	270	7	277	PC33			3864				
YM25	1368	710	2078	PCL60	869	491	1360	TK1	275	8	283	PCPET1			1344				
7U25	992	981	1973	YM60	58	128	186	TS1	282	8	290	PCLPET1			1847				
TOPLAM	3935	2160	6095	7UP60	1370	257	1627	TP1	132	9	141	PC18			349				
PCNR25	605	994	1599	PTW60	756	385	1141	TE1	163	9	172								
PCLNR25	0	0	0	TOPLAM	3284	1392	4676	TOPLAM	1122	41	1163								
YMN25	0	0	0	PC1	1729	2542	4271	TPA1	416	7	423								
FRTNR30	0	0	0	PCL1	213	2605	2818	TFM1	437	6	443								
TOPLAM	605	994	1599	YM1	1115	1009	2124	TPHL1	404	6	410								
PC33	2610	2614	5224	7U1	890	782	1672	TPM1	0	0	0								
PCL33	258	143	401	PTW1	464	332	796	TOPLAM	1257	19	1276								
YM33	1991	209	2200	FRS1	205	40	245	TV33	531	88	619								
7UP33	1025	1072	2097	FRT1	274	74	348	TK33	492	97	589								
FRS33	601	103	704	TOPLAM	4890	7384	12274	TS33	814	118	932								
FRT33	666	76	732	PC25	290	20	310	TP33	294	22	316								
YC33	0	0	0	YM25	725	3	729	TOPLAM	2131	325	2456								
PTW33	383	187	550	TOPLAM	1018	23	1039	CHR25	0	0	0								
TOPLAM	7504	4404	11908	G.TOP				CHR33	1291	114	1405								
PCK25	1705	683	2391	PC18	64	70	134	TOPLAM	1291	114	1405								
PCLK25	1074	419	1523	PCL18	65	0	65	LITL33	1400	22	1422								
YMK25	1673	430	2103	YM18	151	85	236	LITS33	1763	94	1857								
7UK25	1144	441	1585	FRS18	119	68	187	LITM33	496	94	590								
PTWK25	939	312	1251	7U18	184	104	288	LITLL33	437	49	486								
TOPLAM	6538	2315	8853	TOPLAM	583	327	910	LITSL33	440	42	482								
				KARTON BARDAK ( adet )				TOPLAM	4536	301	4837								
				30CL	268000	0	268000	GTRL50	4	52	56								
				40CL	65000	0	65000	GTRP50	1	39	40								
								TOPLAM	5	91	96								







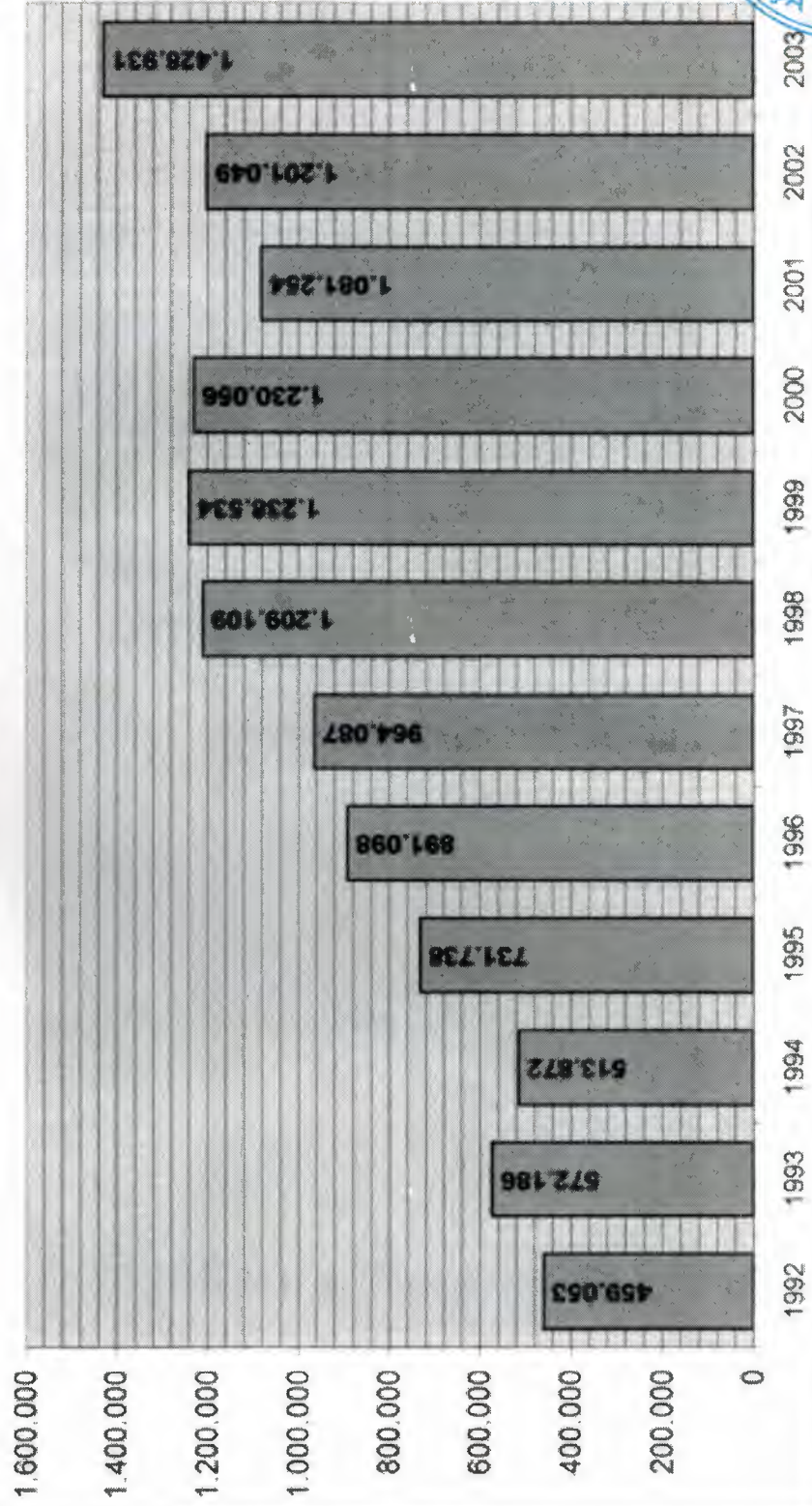


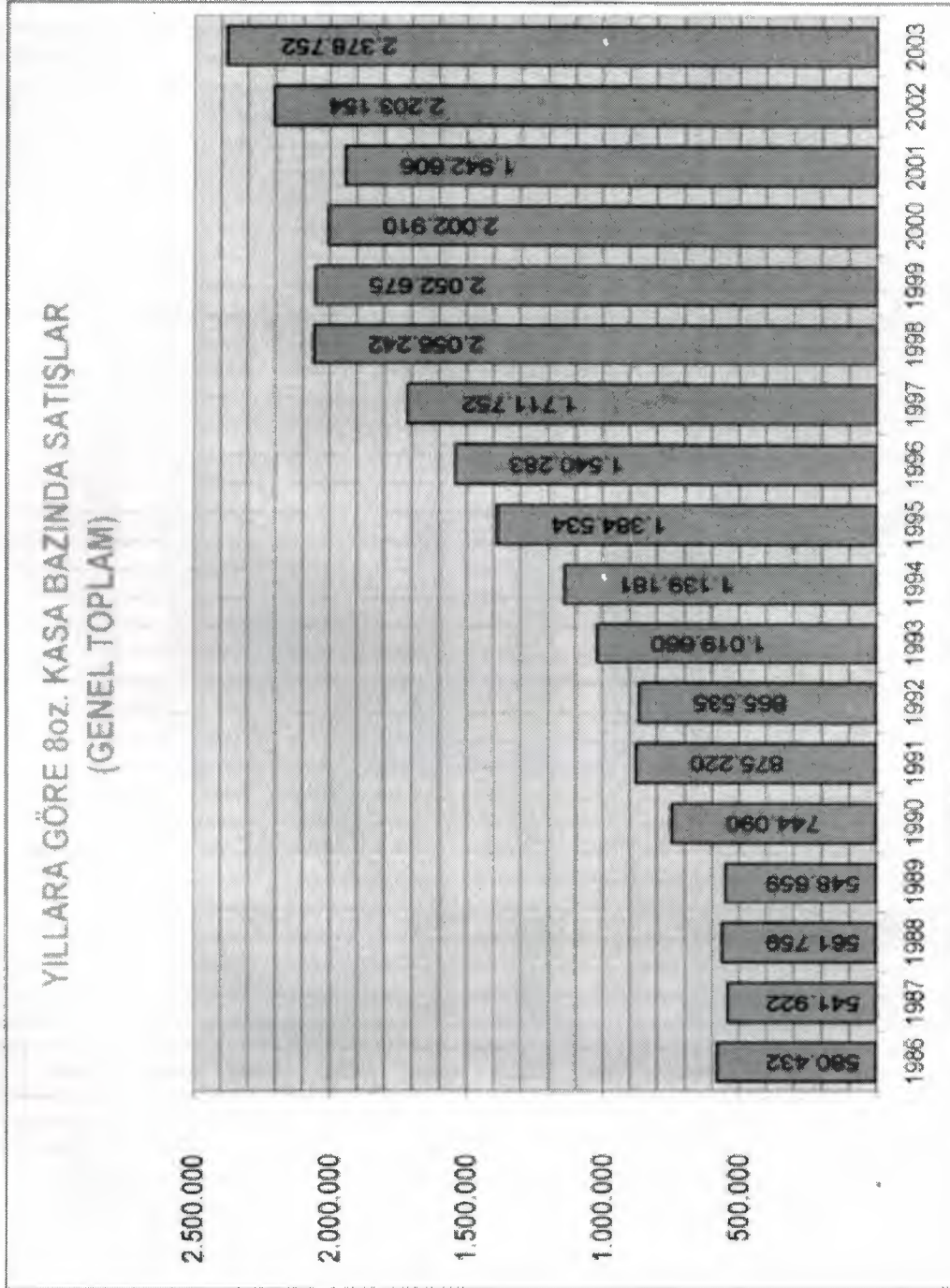


MAL CINSİ	2004 OCAK AYI										
	SİVİL					ASKER					GENEL TOPLAM
	LS	GS	MS	BAYI	SİVİL TOPLAM	LA	GA	MA	GYA	ASKER TOPLAM	
PC25	1126	370	954	619	3069	2566	845	4467	2111	9989	13058
YM25	292	98	215	139	744	500	151	652	621	2124	2868
7U25	208	94	239	156	697	43	23	144	50	260	957
TOPLAM	1626	562	1408	914	4510	3109	1019	5463	2782	12373	16883
PCNR25	125	35	57	14	231	0	0	0	0	0	231
PCLNR25	77	7	8	1	93	0	0	0	0	0	93
TOPLAM	147	42	65	15	269	0	0	0	0	0	269
PCK25	454	186	142	142	924	0	0	0	0	0	924
PCLK25	158	88	42	32	320	0	0	0	0	0	320
PTWK25	22	9	7	7	45	0	0	0	0	0	45
YMK25	156	104	54	44	358	0	0	0	0	0	358
7UK25	99	80	35	25	239	0	0	0	0	0	239
TOPLAM	889	467	280	250	1886	0	0	0	0	0	1886
PC33	2364	1002	1430	385	5181	1015	531	776	818	3140	8301
PCL33	468	352	331	52	1213	160	91	134	105	490	1703
PTW33	320	109	274	51	754	122	61	105	70	358	1112
YM33	502	321	403	91	1317	233	147	189	231	800	2117
7U33	358	326	313	69	1066	147	95	105	101	448	1514
FRS33	56	23	3	0	82	0	0	0	0	0	82
FRT33	17	53	6	0	76	0	0	0	0	0	76
TOPLAM	4085	2180	2760	638	9663	1677	925	1309	1325	5236	14905
PC60	915	237	565	231	2048	520	164	224	1543	2151	5199
PCL60	139	58	137	45	429	54	13	60	66	193	622
PTW60	123	41	103	10	286	26	8	28	30	92	376
YM60	230	90	197	55	572	69	38	156	297	560	1132
7UP60	123	63	114	32	332	35	11	59	91	195	528
TOPLAM	1580	489	1216	382	3667	804	232	1127	2027	4190	7857
PC1	1647	548	867	468	3530	455	145	518	551	1669	5199
PCL1	787	244	363	153	1547	235	91	248	181	755	2302
PTWPET1	329	123	259	93	804	95	56	106	14	271	1075
YM1	303	150	177	85	715	93	53	94	132	372	1087
7U1	197	208	118	50	573	67	46	68	78	259	830
FRSPET1	2	119	5	0	126	0	0	0	0	0	126
FRTPET1	3	106	4	0	113	0	0	0	0	0	113
TOPLAM	3268	1498	1793	849	7408	845	391	1034	854	3324	10732
PCPET2.5	1998	646	1921	678	5243	841	283	1111	1431	2716	8959
YMPET2.5	274	159	254	78	765	137	64	159	205	565	1370
TOPLAM	2272	805	2215	756	6048	978	347	1270	1636	4281	10329
GENEL TOPLAM	13867	6049	9737	3804	33457	7513	2914	10203	8774	29404	62861
PC18	291	728	365	77	1461	0	0	0	0	0	1461
PCL18	30	75	11	0	116	0	0	0	0	0	116
YM18	54	134	40	16	244	0	0	0	0	0	244
DU18	44	110	36	5	195	0	0	0	0	0	195
FRS18	54	135	26	15	230	0	0	0	0	0	230
TOPLAM	473	1182	478	113	2246	0	0	0	0	0	2246



YILLARA GÖRE 80z. KASA BAZINDA SATIŞLAR  
(TOPLAM SİVİL)







MAL C/NSI	2004 YILI GENEL TOPLAMI										
	SML					ASKER					GENEL TOPLAM
	LS	GS	MS	BAYI	SML TOPLAM	LA	GA	MA	GYA	ASKER TOPLAM	
PC25	25067	8230	21257	13784	68338	57142	11815	99493	47022	222462	290800
YM25	6511	2192	4787	3105	16595	11131	3374	18978	13822	47365	63900
7U25	4637	2085	5320	3472	15523	952	507	3208	1110	5777	21300
TOPLAM	36215	12607	31373	20361	100456	69225	22696	121689	61954	275544	376000
PCNR25	2789	789	1275	317	5170	0	0	0	0	0	5170
PCLNR25	480	151	170	23	830	0	0	0	0	0	830
TOPLAM	3269	940	1451	340	6000	0	0	0	0	0	6000
PCK25	10115	4141	3155	3189	20500	0	0	0	0	0	20500
PCLK25	3521	1968	936	715	7140	0	0	0	0	0	7140
PTWK25	482	107	150	151	890	0	0	0	0	0	890
YMK25	3477	2312	1202	989	7980	0	0	0	0	0	7980
7UK25	2199	1784	773	584	5320	0	0	0	0	0	5320
TOPLAM	19794	10402	6218	5588	42000	0	0	0	0	0	42000
PC33	52660	22317	31858	8136	114971	22595	11834	17289	18212	69529	184900
PCL33	10415	7842	7372	1389	27018	3566	2018	2993	2345	10922	37940
PTW33	7118	2423	8100	1145	18786	2723	1360	2344	1566	7003	24780
YM33	11182	7145	8985	2028	29320	5192	3278	4216	5154	17840	47160
7U33	7978	7263	6970	1528	23739	3281	2114	2347	2239	9961	33720
FRS33	1249	506	65	0	1820	0	0	0	0	0	1820
FRT33	359	1170	141	0	1670	0	0	0	0	0	1680
TOPLAM	90972	48565	61471	14228	215335	37357	20604	29188	29516	116865	332000
PC60	20377	5268	14808	5141	45594	13801	3659	18351	34375	70186	115780
PCL60	4208	1290	3048	1099	9555	1206	283	1339	1479	4307	13860
PTW60	2745	912	2297	422	6376	586	134	633	671	2024	8400
YM60	5128	2003	4380	1235	12746	1542	839	3465	6608	12454	25200
7UP60	2746	1390	2544	721	7401	773	251	1310	2016	4350	11760
TOPLAM	35204	10872	27075	8528	81679	17908	5166	25098	45149	93321	175000
PC1	36679	12215	19300	10432	78626	10131	2230	11532	12261	37154	115780
PCL1	12519	5426	8086	3413	34444	5232	2029	5513	4022	16796	51240
PTWPET1	7330	2729	5779	2073	17911	2119	1247	2358	305	6029	23940
YM1	6758	3348	3945	1893	15944	2073	1180	2102	2940	9295	24240
7U1	4383	4620	2834	1103	12940	1495	1030	1517	1889	5731	18480
FRSPET1	41	2640	119	0	2800	0	0	0	0	0	2800
FRTPET1	66	2362	90	0	2520	0	0	0	0	0	2520
TOPLAM	72778	33349	39954	18914	164995	21050	8716	23022	21217	74005	239000
PCPET2.5	44489	14384	42773	15102	116748	18733	8304	24736	32977	82452	199500
YMPET2.5	6094	3532	8558	1738	17922	3050	1421	3532	4575	12578	30500
TOPLAM	50583	17916	49331	16840	134670	21783	7725	28270	37552	95030	230000
GENEL TOPLAM	308815	134652	216871	84797	745135	167323	64907	227247	195388	654865	1400000
PC18	8471	16218	8120	1711	32520	0	0	0	0	0	32520
PCL18	866	1098	256	0	2590	0	0	0	0	0	2590
YM18	1192	2987	902	349	5430	0	0	0	0	0	5430
DU18	973	2440	807	120	4340	0	0	0	0	0	4340
FRS18	1197	3001	560	342	5100	0	0	0	0	0	5100
TOPLAM	10499	26314	10645	2522	50000	0	0	0	0	0	50000



Tarih: 01/01/2003 - 31/12/2003

## Dönemsel Satış Durumu Raporu

EKTAM KIBRIS LTD

Dönem Tarih: 31/12/2003 10:30

Müşeri Cinsi								SİVİL				ASKER							
	USA	GRNE	GYURT	MİSA	TOPLAM	İBAY	Q TOPLAM	USA	GRNE	MİSA	TOPLAM	USA	GRNE	MİSA	GYURT	TOPLAM			
PC25	75706	25608	44182	115896	262252	13519	275771	34704	7732	20847	52700	52540	17876	34849	44182	206643			
YM25	15626	4666	10667	21029	52087	3174	58271	4231	2051	4746	13028	9256	2504	15253	10667	34039			
ZU25	5310	2308	967	7839	16504	3372	19875	4464	1934	4984	11372	856	464	2855	967	5110			
Toplam	97002	32981	55728	144984	338853	20065	350918	54899	11717	35577	77183	62792	21244	113887	55728	253790			
PCNR25	2720	709	0	1179	4608	309	4917	2628	709	1179	4546	57	0	0	0	52			
PCLNR25	468	137	0	566	771	21	752	468	137	566	771	0	0	0	0	0			
FR1NR30	8	304	0	15	327	17	344	8	304	15	327	0	0	0	0	0			
YMR30	1030	335	2022	2153	5543	30	5573	185	89	153	467	848	246	1560	2022	5076			
Toplam	4228	1485	2022	3513	11240	977	11828	3318	1238	1553	8111	910	246	1880	2022	5138			
PC33	75066	30280	17693	48285	175234	8360	183584	54217	21967	31282	107456	21748	11023	17003	17693	87768			
DPC33	13644	5907	2174	9983	35308	1440	36748	10520	7451	7101	25072	3324	1806	2862	2174	10230			
YM33	18648	10119	5065	12890	44648	1995	46644	11565	6954	8723	27242	5630	3195	4157	5065	17407			
ZU33	10833	6625	2129	8875	30723	1440	32163	7665	6843	6644	21342	3636	1983	2231	2129	9581			
FR33	1276	481	0	57	1814	2	1816	1276	481	57	1814	0	0	0	0	0			
FRIT33	366	1124	0	134	1623	1	1624	366	1124	134	1623	0	0	0	0	0			
PTW33	8933	3263	1300	7335	20831	506	21787	6805	2128	5209	13642	2428	1136	2128	1300	6889			
YC33	716	364	93	750	1923	259	2179	628	314	750	1682	88	50	0	93	231			
Toplam	128588	46784	28444	88298	313085	14430	328525	82931	47252	58800	200083	35857	19512	28399	28444	112512			
PC80	34610	9019	34742	34752	113123	5306	118429	21153	5387	15413	41963	13457	3632	18339	34742	71170			
DPC80	5257	1514	1322	4237	12330	165	13285	4134	1240	2088	8361	1120	265	1266	1322	3879			
YM80	6552	2696	6360	7762	23272	1240	24512	5077	1931	4267	11275	1475	767	3465	6360	11997			
ZU80	3486	1585	1815	3748	10634	686	11329	2749	1360	2479	6968	737	725	1299	1815	4046			
PTW80	1340	430	302	1141	3213	160	3373	1115	375	886	2376	225	56	255	302	837			
Toplam	51245	15248	44441	51848	162572	8358	170828	34228	10302	28813	70543	17917	4844	25827	44441	92029			
PCPET1	51289	16721	13466	33894	114570	11413	125983	40794	13006	20946	75135	10486	3326	12148	13466	39436			
DPCPET1	22419	7173	3679	13079	46650	3360	50010	17514	5358	7977	30849	4905	1815	5402	3679	15801			
YMPET1	8771	4388	2778	5847	21884	1925	23809	6907	3286	8888	13881	1964	1102	2899	2778	7903			
ZUPET1	5618	5403	1546	4089	16659	1135	17740	4255	4457	2579	11291	1363	946	1480	1546	5314			
PTWPET1	4826	2016	143	4254	11339	1020	12359	3835	1417	2994	8246	1091	589	1280	143	3093			
FRSPET1	53	2542	0	116	2711	2	2713	53	2536	114	2705	0	4	2	0	6			
FRHPET1	91	2367	0	90	2551	0	2551	91	2366	91	2548	0	1	2	0	3			
Toplam	93187	40810	21811	60922	218310	18855	235146	73348	32817	38589	144755	19818	7793	22333	21811	71995			
PCPET25	64571	20798	35444	68638	149551	14812	201563	48198	14529	43138	103996	18372	5168	25000	35444	82665			
YMPET25	9379	4033	4449	10212	28873	1696	30569	6278	3570	6657	18506	3101	1363	2655	4449	12482			
Toplam	73950	25731	37083	78850	218424	16508	232232	52477	18199	49795	120471	21473	7532	28055	37083	95153			
PCK25	9897	4107	0	3110	17114	3322	20436	9897	4107	3110	17114	0	0	0	0	0			
PCLK25	3434	1830	0	887	6151	711	6862	3434	1830	887	6151	0	0	0	0	0			
YMK25	3371	2189	0	1165	6725	933	7658	3371	2189	1165	6725	0	0	0	0	0			
ZUK25	2004	1644	0	711	4359	557	4916	2004	1644	711	4359	0	0	0	0	0			
PTWK25	94	28	0	49	171	36	207	94	28	49	171	0	0	0	0	0			
Toplam	18800	8798	0	5822	24520	5559	40078	18800	8798	5822	34520	0	0	0	0	0			
Genel	487581	182585	188337	433718	1283223	84250	1387473	308813	131324	212348	853586	157898	61271	221381	188337	629837			
PC18	23231	220	0	8273	31724	1704	33428	23231	220	8273	31724	0	0	0	0	0			
PCL18	2328	12	0	268	2608	0	2608	2328	12	268	2608	0	0	0	0	0			
YM18	4209	43	0	924	5176	336	5512	4209	43	924	5176	0	0	0	0	0			
FR18	4226	57	0	590	4873	364	5237	4226	57	590	4873	0	0	0	0	0			
DU18	3286	33	0	784	4083	129	4203	3286	33	784	4083	0	0	0	0	0			
Toplam	37290	385	0	10839	48484	2514	50878	37290	385	10839	48484	0	0	0	0	0			
Genel	37290	385	0	10839	48484	2514	50878	37290	385	10839	48484	0	0	0	0	0			
PK20	9	1	0	12	22	0	22	9	1	12	22	0	0	0	0	0			
PK20	12	1	0	14	27	0	27	12	1	14	27	0	0	0	0	0			
TP20	0	0	0	4	4	0	4	0	0	4	4	0	0	0	0	0			



MAL CİNSİ	2004 YILI AYLIK GENEL PROJEKSİYONU												
	Ocak	Şubat	Mart	Nisan	Mayıs	Haziran	Temmuz	Ağustos	Eylül	Ekim	Kasım	Aralık	Toplam
PC25	13058	15414	17302	20530	27335	28342	28066	27136	30660	24864	19687	15616	290800
YM25	2868	3388	3801	4512	5006	5447	5763	6159	6735	5463	4326	3432	63900
7U25	957	1128	1268	1502	2002	2149	2633	2721	2245	1820	1441	1143	21300
TOPLAM	16883	19931	22371	26544	35343	37938	51552	48016	39630	32147	25454	20191	376000
PCNR25	231	275	308	365	486	512	712	600	544	441	349	277	5170
PCLNR25	38	43	49	59	78	83	116	105	88	71	56	44	830
TOPLAM	269	318	357	424	564	605	828	785	632	512	405	321	6000
PCK25	924	1090	1225	1453	1935	2077	2820	2620	2160	1760	1364	1104	20580
PCLK25	320	379	425	504	671	720	952	912	752	610	482	383	7140
PTWK25	45	52	59	70	92	99	131	125	104	84	66	53	980
YMK25	358	423	476	563	750	805	1094	1018	841	683	540	429	7980
7UK25	239	283	317	376	501	537	726	680	560	455	360	286	5320
TOPLAM	1886	2227	2502	2966	3949	4238	5753	5364	4426	3592	2842	2255	42000
PC33	8301	9799	11002	13054	17381	18656	25351	23012	19489	15009	12518	9923	184900
PCL33	1703	2012	2259	2678	3566	3829	5202	4843	3999	3243	2569	2037	37940
PTW33	1112	1312	1474	1750	2329	2500	3401	3164	2611	2119	1578	1130	24780
YM33	2117	2499	2806	3329	4433	4759	6468	6022	4971	4032	3132	2532	47160
7U33	1514	1787	2007	2381	3170	3402	4521	4306	3555	2884	2282	1810	33720
FRS33	82	96	108	129	171	184	250	232	192	156	123	97	1820
FRT33	76	89	100	119	158	169	229	214	177	144	114	91	1680
TOPLAM	14905	17594	19756	23440	31208	33499	45522	42393	34994	28387	22477	17825	332000
PC60	5199	6136	6889	8174	10882	11683	15875	14786	12202	9898	7839	6216	115780
PCL60	622	733	825	978	1303	1399	1904	1770	1461	1181	938	744	13860
PTW60	376	445	500	592	791	849	1152	1073	885	717	570	450	8400
YM60	1132	1335	1499	1779	2389	2544	3485	3218	2655	2154	1707	1353	25200
7UP60	528	623	699	831	1107	1186	1614	1502	1237	1008	796	631	11760
TOPLAM	7857	9272	10411	12354	16452	17661	24000	22348	18442	14959	11850	9394	178000
PC1	5199	6136	6889	8174	10882	11683	15875	14786	12202	9898	7839	6216	115780
PCL1	2302	2717	3048	3617	4817	5170	7026	6544	5401	4380	3467	2751	51240
PTWPET1	1075	1268	1423	1690	2251	2416	3284	3057	2523	2047	1620	1286	23940
YM1	1087	1284	1442	1711	2279	2446	3325	3096	2555	2072	1641	1302	24240
7U1	830	979	1099	1305	1739	1864	2532	2381	1949	1580	1251	991	18480
FRSPET1	126	148	166	197	263	282	386	357	295	240	190	150	2800
FRTPET1	113	134	150	178	236	254	345	322	265	216	171	136	2520
TOPLAM	10732	12666	14217	16872	22469	24114	32773	30523	25190	20433	16179	12832	239000
PCPET2.5	8959	10573	11871	14006	18754	20129	27348	25476	21026	17058	13507	10713	199500
YMPET2.5	1370	1616	1814	2152	2867	3077	4187	3893	3213	2608	2065	1638	30500
TOPLAM	10329	12189	13685	16238	21621	23206	31535	29369	24239	19666	15572	12351	230000
GENEL TOPLAM	62861	74197	83299	98838	131606	141261	191903	178778	147553	119696	84779	75169	1400000
PC18	1451	1724	1935	2296	3056	3281	4480	4152	3427	2780	2202	1746	32520
PCL18	116	137	154	183	244	261	354	331	273	222	175	140	2590
YM18	244	287	324	384	511	547	744	693	573	464	368	291	5430
DU18	195	230	268	306	407	437	598	554	458	371	294	222	4340
FRS18	230	271	305	362	482	518	701	654	539	438	346	274	5120
TOPLAM	2246	2649	2976	3531	4700	5044	6857	6384	5270	4275	3385	2683	50000

EKTAM KIBRIS LTD.

Döküm Tarihi: 31/08/2004 08:10:32

Tarih: 01/01/2003 - 31/12/2003 **Dönemsel Satış Durumu Raporu**

Mamül Cinsi	LİŞA	GİRNE	GYURT	MİSA	TOPLAM	BAYI	G.TOPLAM	LİŞA	SİVİL GİRNE	MİSA	TOPLAM	ASKER GİRNE	MİSA	GYURT	TOPLAM
TV20	9	0	0	19	28	0	28	9	0	19	28	0	0	0	0
<b>Toplam</b>	<b>30</b>	<b>2</b>	<b>0</b>	<b>40</b>	<b>81</b>	<b>0</b>	<b>81</b>	<b>30</b>	<b>2</b>	<b>40</b>	<b>81</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
TV1	36	53	0	31	119	6	125	36	53	31	119	0	0	0	0
TK1	37	41	0	34	112	6	118	37	41	34	112	0	0	0	0
TS1	38	38	0	40	117	6	123	38	38	40	117	0	0	0	0
TP1	21	23	0	34	78	5	83	21	23	34	78	0	0	0	0
TE1	24	20	0	30	74	5	79	24	20	30	74	0	0	0	0
TPA1	47	43	0	36	126	8	134	47	43	36	126	0	0	0	0
TFM1	51	43	0	38	133	8	141	51	43	38	133	0	0	0	0
TPH-1	49	38	0	37	124	8	132	49	38	37	124	0	0	0	0
TPM1	22	20	0	30	72	5	77	22	20	30	72	0	0	0	0
<b>Toplam</b>	<b>324</b>	<b>320</b>	<b>0</b>	<b>311</b>	<b>955</b>	<b>57</b>	<b>1012</b>	<b>324</b>	<b>320</b>	<b>311</b>	<b>955</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
TV33	157	84	0	196	437	49	486	157	73	196	426	0	11	0	11
TK33	69	27	0	107	203	20	223	69	26	107	201	0	2	0	2
TS33	150	71	0	247	468	104	572	150	60	247	457	0	11	0	11
TF33	47	26	0	100	173	0	173	47	23	100	170	0	3	0	3
<b>Toplam</b>	<b>423</b>	<b>208</b>	<b>0</b>	<b>650</b>	<b>1281</b>	<b>173</b>	<b>1454</b>	<b>423</b>	<b>181</b>	<b>650</b>	<b>1254</b>	<b>0</b>	<b>27</b>	<b>0</b>	<b>27</b>
TKS1	12	2	0	7	21	0	21	12	2	7	21	0	0	0	0
TVS1	12	4	0	5	21	0	21	12	4	5	21	0	0	0	0
TSS1	10	2	0	7	19	0	19	10	2	7	19	0	0	0	0
<b>Toplam</b>	<b>34</b>	<b>8</b>	<b>0</b>	<b>19</b>	<b>61</b>	<b>0</b>	<b>61</b>	<b>34</b>	<b>8</b>	<b>19</b>	<b>61</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
TV25	0	0	0	1	1	0	1	0	0	1	1	0	0	0	0
<b>Toplam</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Genel</b>	<b>811</b>	<b>538</b>	<b>0</b>	<b>1030</b>	<b>2379</b>	<b>230</b>	<b>2609</b>	<b>811</b>	<b>511</b>	<b>1030</b>	<b>2352</b>	<b>0</b>	<b>27</b>	<b>0</b>	<b>27</b>