increase means that assets generate more profit. This ratio reflects the earning potential of assets measured with financial performance.

The analysis of the company's liquidity shows proper payment capacity of the company. Only in 2002 current assets did not fully cover current liabilities, and the company was forced to take a short-term credit.

Current assets flow ratio reflects the rate of flow of liquid assets and indicates how many times per year the assets are renewed through the sales of final products. The higher the ratio, the more efficient the activity. From the perspective of logistics, inventory is the asset component whose circulation is especially important for the company. An increase in their turnover in 2002 shows that the flow of stocks was faster and their storing time decreased. The company could then receive income from sales with less assets involved. Inventory turnover ratio in days defines the length of one cycle of inventory turnover. In our company financial resources involved here are in turnover for 30 days. This figure is rather low, which proves the efficient use of stocks in the company.

Conclusions

Logistics management affects almost every aspect of profits or losses in an enterprise and its financial performance. Logistics determines customer service quality, material flow time, cost of supply and sale. Thus, efficient logistics management helps to become more competitive and consequently increases company's profits. In view of this logistics should no longer be identified as "a cost centre" because it has been proved in this article that it has its share in the profits of an enterprise, which largely depends on the quality of customer service.

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LOGISTICS IT SYSTEMS APPLICATION IN THE CUSTOMER SERVICE OF POWER ENERGY DISTRIBUTION

Abstract: The paper describes application possibility of IT systems in the customer service in distribution. The paper focuses on the power energy distribution and application of suitable IT systems in this area. Author presents new technologies used to satisfy customers in the service area in power energy distribution.

Keyword: IT systems, customer service, energy distribution

Introduction

Logistics in the power energy sector contains distribution and physical transmission of the power energy. Power energy purchasing can be defined as a assurance of the suitable energy amount to satisfy the demand of all customers while considering foreseen energy loses. The power energy sale can be described as a financial accounting of distribution companies and their customers.[1]

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[1] Szkutnik J.; Logistyka dystrybucji energii elektrycznej w Polsce; Gospodarka Materiałowa i Logistyka 2001, Nr 4

Logistics in the power energy sector focuses mainly on the various streams flow management and it has more and more importance in present competitive economy. However, there are used some different solutions in the logistic systems of the power energy sector because of practically possibility lack of energy storage on the large scale.

In the distribution and energy transmission area, the logistics system of power energy sector contains whole energy transmission network or networks of particular power plants (see figure 1).
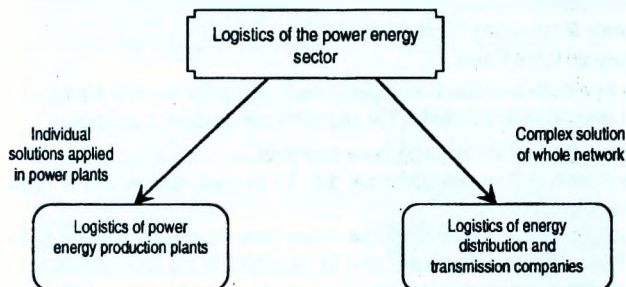

Fig. 1 Logistics of the power energy systems

Source: Authors elaboration based on Szkutnik J.; *Logistyka dystrybucji energii elektrycznej w Polsce*; Gospodarka Materiałowa i Logistyka 2001, Nr 4

IT solutions for power energy distribution in the customers service area

Proper functioning of the customer service of power energy distribution could be almost impossible without application of the logistics IT systems. *EnergOS* is one of such a solution dedicated for the customers service improvement. *EnergOS* is an important breakout comparing to the up to now solutions used in this area. It can be used for the service of small and large customers as well.[1]

The system gives wide possibilities for the profits as follows:
– Improvement of the data safety thanks to the application of the new data bases (Informix and Oracle)
– Cooperation possibility with the office software (word processors, spreadsheets etc.) thanks to the application of Windows graphical interface
– Integrating accounting of small and large customers in frame of the one system despite of different pricing strategies
– Accessibility to the various analyses those can be presented as a figures or diagrams. That allows for more efficient company management, demand and supply creation, especially.
– Easy system's usage through the application of the accessories as: mouse, bar code reader, computers terminal.
– Effective customers accounting in area of sale and debts vindication.

Right transaction accounting in all tariffs groups is the principal tasks of the customers service system of power energy customers *EnergOS*. Moreover *EnergOS* allows for data collection and transformation of the data indirectly connected with the customers accounting as technical customers data, customers correspondence, customers agreements.

[1] Zintegrowany system rozliczeń odbiorców energii elektrycznej EnergOS; Prezentacja modułów „Wielki Odbiór" oraz „Drobny Odbiór", INFORMA, Sierpia 1999

EnergOS is a complex system. All its users work based on the common data base. This solution assure accessibility of the data for all users. The Informix data base is based on the data warehouse technology. Its advantageous are as follows[1]:

– Independence on the software platform and operational systems;
– Possibility of the application functioning via the Internet/Intranet or as a local application of every users;
– Acceleration possibility of answering for the analytical question;
– Export possibility of files in MS Excel format;
– Data are presented in the tables

Bases of this type contain of data files, logically dedicated to the areas of the tables. The segments are dedicated to every table in data base. The segments can be divided as follows[2]:

– Data segments – the data are stored in those segments
– Temporary segments – there are temporary data for example data in time of question transition, indexes creation, data sorting;
– Beck up segments – there are previous data before there have been modified by the unconfirmed transaction. This segments contains are used for assurance of the data readability,
– Segmenty wycofania – przechowują dane sprzed ich zmodyfikowania przez nie zatwierdzoną transakcję. Zawartość tego segmentu wykorzystuje się do zapewnienia spójności odczytu danych, wycofania nie zatwierdzonych zmian oraz do odtworzenia danych w przypadku wycofania transakcji.

In the base, there are stored data describing the customers as: customer address, energy delivery points address, energy counter number, the counter indications and many others.[3] The data can be submitted manually by the users with systems modules or electronic mail e.g. mailing the counter indicates using ELITE 790 terminal, mailing the payment confirmation from the bank and entering the payment term to the data table.

The system enable statistics generation in various variants on the chosen level (beginning from the single customer through the local department to the whole company.

EnergOS is a complex and dynamical developed application containing EnergOS, EnergOS Finances, EnergOS Admin modules and its interface system can be divided to the users group according to their work area thanks to the interface definition (GUI). All users work on the same base on the administer given level. The accessibility level is strictly monitored. The work in the system should be preceded by the identification and password entering.

EnergOS Adminn module assure the system security and allows for the accessibility management of the particular users (fig. 2). EnergOS Admin is built in the way to focus all its service in the hand of one person in the area of transactional or technical customer's service. The module is equipped with the clear graphical interface. The module is not working in data storage or configuration.

EnergOS main module focusing on the customers' service (fig. 3). Main features of the module are:

– Easy access to the data and its viewing and modification considering system level accessibility defined by the administrator;
– Data full control in frame of the pricing policy;
– Possibility of the energy consumption amount in the case of energy counter damage or some other cases;

[1] Zastosowanie technologii Hurtowni Danych w energetyce, przy użyciu technologii firmy PB POLSOFT; Computerworld 2001 Nr 15
[2] Jezierski J., Wrembel R., Zakrzewicz M.; Systemy zarządzania bazą danych Oracle 7 i Oracle 8; NAKOM, Poznań 1999
[3] Jezierski J., Wrembel R., Zakrzewicz M.; Systemy zarządzania bazą danych Oracle 7 i Oracle 8, NAKOM, Poznań 1999

- Possibility of definition of individual earnest percentage as well as definition of the earnest structure;
- Registration of the energy consumption deviation
- Full information about present and previous prices
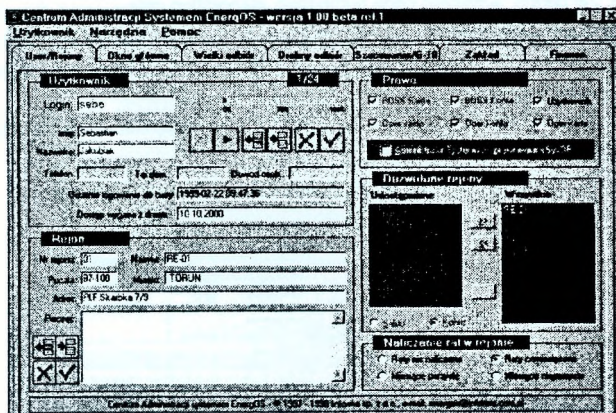- Possibility of invoice or bills printing (viewing before printing is possible on the monitor).

Fig 2. Administration center EnergOS system

Source: *Zintegrowany system rozliczeń odbiorców energii elektrycznej EnergOS*; Prezentacja modułów „Wielki Odbiór" oraz „Drobny Odbiór", INFORMA, Sierpia 1999
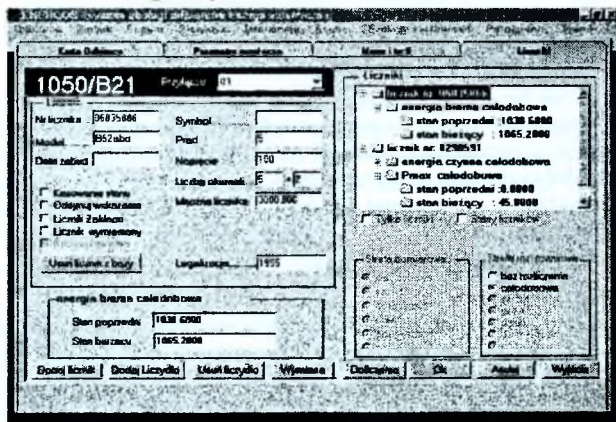

Fig 3. The interface of customer service system - energy counters

Source: *Zintegrowany system rozliczeń odbiorców energii elektrycznej EnergOS*; Prezentacja modułów „Wielki Odbiór" oraz „Drobny Odbiór", INFORMA, Sierpia 1999

EnergOS Finances module allows for full accounting of all finance operation connected with the transactions in the energy distribution (fig. 4). All finance registries are identified with the user and transaction period. The systems enable registration of the sale on the analytic accounts according to particular indexes on the sale invoices. The is a possibility of automatic data entering using bar code readers that make this operation easier and quicker. All printed document contain user name, information type, the period, automatic page numbering, elaboration data.

The help system are elaborated for all modules. The help are elaborated in two forms:

– Integrated help system – the access is possible from the particular system window thanks to this all system buttons are described
– Multimedia Internet help – it help to understand functioning all modules using graphical presentation based on the web page structure
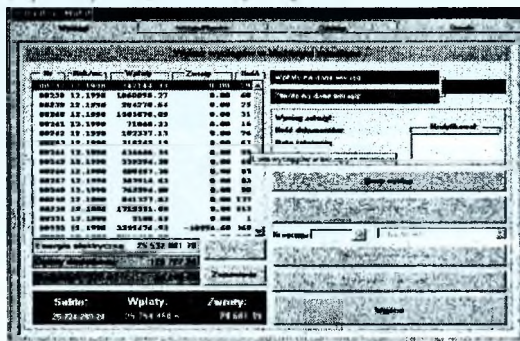

Fig. 4. Interface of EnergOS Finances module

System *EnergOS* has two alternative ways of energy counters reading in customer residence. The first one is a tool printer and computer – two in one. The second one is a new solution EnergOS Terminal. This tool is a connection of computer with LCD, keyboard and printer moreover it is equipped with the GSM module that allows for wireless data transmission, it can be used as a usual mobile phone. The terminal is also equipped with the credit cards' reader. Such a solution allows for payment in clients localization directly.

Application of GSM module allows the distribution company worker for immedietly access to the data on the company server.

The linkage software is the second part of the EnergOS Terminal system. It is the software on the company server that receives incoming calls, sends necessary data, actualize data base after customer counter read and count the bill value.

The new solution is application of the Internet Module of Customer Bills Management. It allows for customers accessibility to the interesting information through the Internet. The access is possible after identification confirmation. After that the customer has following options:

– The bill calculation – allows for energy costs calculation for particular day. The user fill the gaps with the indications of his energy counters. The identification of the user has been done basis on the previous data. After data confirmation, the bill appears on the monitor, and it can be noticed as a copy of the original bill. This bill can be printed from the Internet viewer, directly.

- Energy consumption calculation – this option gives possibility for energy amount consumption level for particular day. After entering the counter indicates for following day, the user has an access for the following information: the energy consumption on the particular energy counters, energy consumption figures, statistics of the last nine payment.
- The review of previous bills – this options allows for access to the previous bills data. In order to view particular bill, the user should enter interested month and the year
- It is possible to check out the power energy bill and order the payment transfer from the bank using the telephone equipped with the WAP module (see fig. 5).
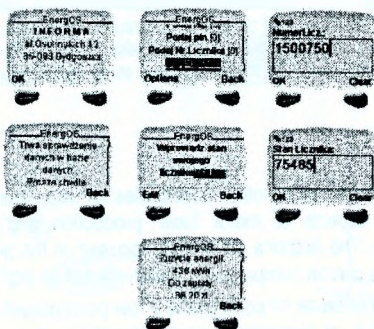

Fig 5. WAP usage for checking out the energy bill payment

Source: *Zintegrowany system rozliczeń odbiorców energii elektrycznej EnergOS*; Prezentacja modułów „Wielki Odbiór" oraz „Drobny Odbiór", INFORMA, Sierpia 1999

Above-mentioned options gives power energy customers wide possibilities of energy consumption and energy costs control and make the payment for energy consumption easier and more comfortable.

Conclusion

Nowadays, customer service is one of the most important level for competitive advantage achievement. Usage of IT system in distribution for customer service development and improvement seems to be a very good solution. Presented logistics IT system in power energy distribution is a very important tool for customer satisfaction rise and for the distribution company competitive position improvement, in effect.

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