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THE SETTING UP OF PIG FEEDING GRAIN FORAGING LINE

RESUME D'AUTEUR

The dissertation is based on a project for the setting up of pig feeding grain foraging line.

Due to confidentialyty reasons, the name of the client had to be changed for the disertation. Also, certain other miror aspects regarding the identification of the client were changed. The performned changed do not affect the core of the project.

The dissertation initiates with the presentation of the relevant information regarding the analyzed company (structure, history, philosophy, main products and servicesextract of key figures), as well the macroeconomic environment of the company, including benchmarking results and strategic positioning.

The presentation of the analyzed company is further completed with financial information regarding its activitiy, i.e. the main indicators and ratios of the profit and loss account, balance sheet, personnel, cash / flow and equity calculation with compared values for the past reporting periods.

After the detailed presentation of the problems the company is facing, the following chapters focus on the possible project solution and the chosen approach for the project of the company. The project process requires deep and extensive actions in all the areas of the company, from strategic repositioning, reorganization of the management structure and down to the operational level of the company, including the financial requirements of the process, in terms of both financing the project effort, and recovering the financial health of the company. The actions and activities of the project process are organized under deadlines, responsabilities and deliverables. The performed actions are targeted toward the planned results and expectations of the project process. The risk of the project are split under the categories of internal and external, the most important internal risks laying in the difficult liquidity of the company correlated with the change management effort, while on external level, the market situation is difficult and the rend of the market is also negative. Some of the internal risks have been reduced by a higher involvement of the consultant in the running of the company, fact that will lead to a necessary step of structured hand-over at playing-out from the project. The final chapter of conclusions and recommendations explain more in cetailes these aspects.

1. INTRODUCTION

THE TARGET OF THE PROJECT:

THE SETTING UP OF PIG FEEDING GRAIN FORAGING LINE

THE NECESSITY OF THE PROJECT:

Among all animals, pigs are the most prolific and they have a high precocity. These animals are considered the most profitable, as, being fattened, they assimilate the food in optimal conditions, requiring only relatively low fodder consumption for every kilo of weight gain.

Forage constitutes 75% of the cost of one kilo of meat, for pigs sold alive. For a more efficient economic activity of any pig fattening farm, the setting up of such a mechanized foraging system is a dire need.

The mechanization

- will grant better breeding conditions;
- will reduce expenses for the pigs` feeding (from a 150 heads per pig tender feeding norm to 1000 heads per pig tender), thus, contributing to the reduction of the products` price
- will avoid protein loss caused by the heterogeneity of ingredient mixtures;
- will enable the pigs to gain weight faster, due to a better absorption of the food by their organism;
- will shorten the period up to the delivery, when the meat will be sold;

Although there is no shared point of view, the specialists assert that (according to [SCHO 04]), grained forage will ensure: the reduction of loss and of specific consumption by about 10%; the favorable influence of combined forages` assimilation degree, by the effect of thermolysis taking place through their granulation; the annihilation of the deterrent effect of certain substances; the destruction, up to 95%, of mould colonies, producing toxins; the mechanization and the automation of food distribution processes.

MEANS OF ACCOMPLISHMENT

The chosen grain foraging line for feeding the animals will be purchased, pursuant to a marketing research on the basis of a delivery and installation contract.

THE PROJECT`S ADVANTAGES

Combined fodder-based foraging has several *advantages*, such as:

- the reduction of loss caused by board foraging;
- the reduction of manpower costs;
- granting a complete and balanced nutrition, making up the premise for a genetic process manifesting itself through maximal production performances;
- due to the manufacturing technologies and to the technical equipment held by the production units, this will grant the outcome of a highly nutritional and hygienically adequate product;
- will grant the optimization of nutritional factors, non-genetic factors with heavy influences upon the manifestation of the animals` genetic potential;
- will enhance the economic efficiency, by raising the work productivity and by reducing the consumption, the consumptions, the costs, the losses etc.

A particularly favorable economic effect will be granted by the integration, in the food of all categories of pigs, but especially of suck lings and young pigs, of combined fodder, in grained form, that will ensure:

- a loss and specific consumption reduction by about 10%;
- grained fodder is easier to carry, without becoming heterogenic;
- the animal is compelled to consume all the ingredients of combined fodder, without preferentially choosing some of them. Eating a greater quantity of dry food, the daily mean weight gain will be positively influenced;
- granulation will trigger a thermolysis, that will influence the assimilation degree of the various fodder nutritional components in a favorable way ;
- the deterrent effect of certain substances in the fodder will be considerably reduced;

- the mould colonies in the basic fodder resources, taking part in the production of combined fodder, will be destroyed up to 90-95%.
  These colonies can spawn toxic substances, with unfavorable effects upon the weight gain ratio, upon meat quality and the animals` health;

(**Appendix 1**)

- the mechanization and the automation of the forage distribution process is easier.

The table below renders the efficiency of using grained combined fodder for the pigs` nutrition vivid.

The efficiency of using grained combined fodder for the pigs` nutrition (after BELL 02).

The combined fodder distribution form	Daily average weight gain for pigs between 20 and 90 g. - g./head-	Specific consume per kilo - kilos fodder-	Extra daily weight gain - g -	Combined fodder per kilo of extra weight gain - g -	Number of days necessary for reaching 90 kilos - days -
Flours	**602-655**	**3.37-3.18**	**-**	**-**	**118**
Grains	**663-666**	**3.05-3.03**	**61.11**	**320-150**	**106**

CHAPTER I

THE PRESENTATION OF A FOOD DISTRIBUTION INSTALLATION

In specialized literature (after (CRIS 02)), they recommend the employment, irrespective of the size of pig stock, of the modernized technological version, that would allow the maximal exploitation of the animals' biological potential, for minimal expenses for the unit of product (lei per meat kilo), so, the maximally efficient version transposed into meat tones or kilos per feeding person (employee).

The fodder distribution installations are specific of the fodder type, either dry or liquid. For both types of installations, the end part is the feeding device. In case of dry foraging, proposed by this project, the feeding device is different with respect to the age category, the weight range, the foraging version – at discretion, by appetite or in portions. In case of portion foraging, they should grant a foraging pan for every animal, while in case of at-ease foraging, a foraging pan can feed at least 3 animals. The building materials employed for these feeding machines are plate, glass fiber, steel concrete or agglomerated plastic material plates. In choosing among these versions, it should be taken into consideration that these will be periodically exposed to the action of disinfectant substances and solutions and they will be permanently in contact with the corrosive medium in the shelters.

The majority of half-automatic feeding devices are endowed with a storage bunker and with the feeding trough. By their behavior, pigs are wasteful animals; a fact paid much attention to when setting up these feeding machines, especially the side and front parts of the trough, which are flanged inwards, endowed with a protective steel strip not allowing the animal to take the fodder out of the trough with its snout. The demarcation, by means of slits, of individual foraging pans is for the same purpose, left alone that it reduces the aggressive behavior during foraging.

For a better exploitation and conversion of grained fodder and for reducing any fodder loss, the water source, usually the sucking device is mounted on the feeding device, so that the animal can drink water at any time while eating the dry fodder or it can even get a wet fodder in its trough, totally at ease.

The hydraulic food distribution equipment, **Appendix 2,** is made up of pairs of mixing vessels where the food is prepared, of centrifugal pumps and of distribution pipes endowed with fast-opening slide valves for the leakage of food in the feeding troughs. The water/fodder mixture, at a 1:3 ratio, prepared in one of the mixing vessels will be taken away by the pump to the main pipe; the water column in the pipe will be pulled by the food mixture in the second mixing vessel. Through the opening of fast sluice gates, the food mixture will leak into the troughs. After the foraging is complete, the water in the vessel will be sucked by the pumps, pumped through the main pipe and slumped in the vessel where the food had been prepared. After the pipe was washed, the sluice gates will be closed, the pump will be disconnected and the water will remain in the pipes until the next foraging.

These types of installations are exclusively used in the countries with a tradition in pig breeding, due to their economic efficiency, but especially to the above-mentioned advantages.

The following inland producers are known: SC AZOMA ARAD, VALROM BUCHAREST,

The main foreign providers are: BIG DUTCHMAN – the greatest producer in the field of installations with subsidiaries in GERMANY, USA, ASIA; SCHULZ SYSTEMTECHNIK – GERMANY.

The grain fodder distribution installations are made up of a storage bunker, to be positioned inside or outside the shelter, the feeding device – the feeding basket – the conveyer, made up of a multicore flexible cable with plastic joints and the conveyer' s piping, the driving mechanism, the joints. What differentiate them is the energy consumption, the conveyed fodder quantity, and the price and delivery conditions.

The driving mechanism makes up a separate subassembly from the feeding device. This mechanism shall always be mounted at the end of the feeding line. The maximal number of mounted joints is 8. The roller on the inside of the joint is made in such a way it cleans itself and that is why we should pay attention to its rotation sense, when the installation is on. The sections of the installation consist of 6 meter-long Φ60 x 2 steel pipes. The installation's electric equipment shall be connected to the 380 V- three-phase network, 50 Hz., by means of a control box. The installation is endowed with a

automatic decoupling system for the driving mechanism after the filling of the last charger or feeding device, or in the case of failure and of the break of the cable with joints.

TECHNICAL FEATURES

• The electric driving engine	1.5 kW; 1.500 rot./minute
• The transmission ratio	I = 1:71
• The cable` s transport speed	0.45 m/sec.
• The cable` s maximal length	280 m
• Productivity	2.2 t/h
• The conveyer` s pipe	Φ 60 x 2 mm
• The maximal joint number	8 pieces

MOUNTING INSTRUCTIONS

The subassemblies` mounting order is the following:

- The mounting of the feeding basket under the fodder storage bunker. We shall check the easy functioning of the slide valve at the bunker` s descent. The basket has the coupling connector in the direction of the cable with joints.
- We shall mount the driving mechanism, on the inside or outside of the hall, view a view to the fact that this one extracts the fodder from the bunker through the feeding branch of all feeding devices.
- We shall mount the conveyer` s piping, so that the ends of the pipes won` t get swells and to ensure a smooth movement of the cable with joints and a movement with no blocking trends.
- The mounting of the joints shall be made so that the internal roller will have the adequate sense of rotation in order to clean itself.
- The circular holes, of Φ 30 mm, in the conveyance pipes have an elongated form, to insure the easy fodder discharge.
- We shall mount the cable with joints.
- We shall adopt safe constructive solutions for the location and mounting of the equipment` s electrical elements, so that they will be protected against deterioration.

- The electric equipment will be made according to the protection standard IP 54. The conductors and the electric equipment shall only be mounted by the qualified personnel.

THE FUNCTIONING MODE

The grain fodder distribution installation for the breeding of pigs is designed into modulated subassemblies in order to be easily mounted, has many disposition possibilities, so that it can adapt to any hall type and dimensions (according to [DRAG 05]).

The fodder is extracted from the storage bunker through the cable with joints and brought through the piping and the cable with joints to the descent holes, where from it would reach the feeding devices, through down pipes. After the last feeding device has been filled, the installation will automatically disconnect.

The installation is also recommendable for fodder distribution in case there is an interest in a mechanized activity. For smaller compartment dimensions, modifications of the capacities can be ordered, or modifications in the sections` length, in the electric engines` dimensions, directly by the machinery manufacturer.

CHAPTER II
FUNCTIONS PRESENTATION AND ANALYSIS

2.1. PRODUCTION FUNCTION

The structure of the swine farming and fattening technological system, within SC ABC SRL, in the following:

S1- the “mating, gestation, nursing, breeding” subsystem (up to 27 kilograms), breeding young reproduction pigs;

S2- the “fattening” subsystem

S3- the “mechanical department”;

S4- the “supply-sale-transportation department” subsystem;

S5-the “economic” subsystem

The subsystem S1 consists of the following sets:

S11-“mating gestation”

S12-“farrowings”

S13-“piglets breeding”;

S14 -“breeding piglets up to 27 kg”;

S15- “breeding young reproduction pigs”

S16-“Veterinary laboratory, crematory, butchery”

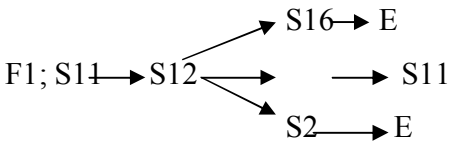
Subsystem S2 consists of the following sets:

S21- “27 kilograms young pigs”

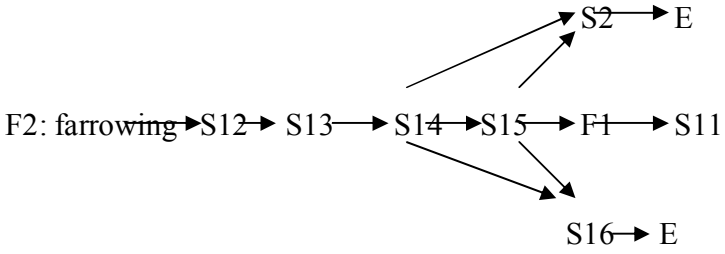
S22-“reformed sows intended for reconditioning”;

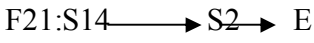
S23 -“young pigs inadequate for breeding”.

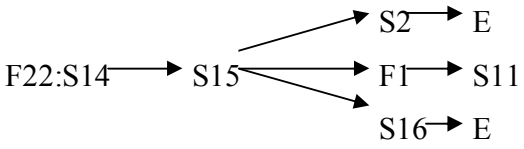
The analysis of animals’ entrance and exit of these units points out to the existence of three animal flows, as well as to several entries in the system from the outside and exits of the system towards the exterior. The first flow is the “adult animals flow”, which has the following circuit:



The second flow is the "young animals flow", which, after leaving set S14, can be divided into two flows, as it follows:







The F21 flow represents the circuit of young animals intended for fattening, while the F22 flow represents the circuit of young animals intended for reproduction.

Connecting the three animal flows leads to the closed circuit, as most of the biological material is obtained within the system, except for the periodical changing of the sows and especially the boar, in order to avoid inbreeding and incest.

The main characteristics of swine fattening units are production continuity and delivery regularity. These characteristics determine favorable economic advantages such as: full use of the production capacity, a more homogeneous use of the work force and of investments, regularity in intermediary consumption, production delivery and obtaining income along the entire year, rational management and organization of the technological process, etc.

The increase in the meat production depends on the increase in the total number of swine, while the economic efficiency depends on the efficiency, costs and prices. The rhythm of increasing the total number of swine depends mainly on ensuring the right number of mother sows and on their intensive use in reproduction. These two factors determine directly the number of pigs obtained and indirectly the total production of meat realized by the sow annually. The intensive use of the sows in reproduction is obtained by organizing a modern base for the reproduction process.

The increase in the economic efficiency of the pork production depends on: reproduction, the level of average efficiencies, choosing the most appropriate fattening system, as well as fattening pigs up to the weight where the fodders are used with a maximum efficiency (high ratio of fodder conversion into meat) respectively the optimal delivery weight.

As far as fattening for meat is concerned, it is advisable that it shall begin with combined fodder at 25 kg (75-80 days) and to end at 100-110 kg (200-210 days). Using such a system allows high daily average output, with low fodder consumption (3.5 – 4.0 kg combined per kg of output).

Continuing the fattening beyond such weight leads to an increase in the fodder consumption per kg of output, to a change in the structure of the weight ratio and to a considerable increase in the unit cost.

The duration of the fattening period has a big influence on the output per each pig. Both the production value and the expenses per head grow noticeably up to 160-200 fattening days, but the marginal increase of the output value (ΔPv) is bigger than the marginal increase of expenses (ΔCT), therefore any additional expense with the fodder (Cf) and with the maintenance (CT) ensures an additional output (ΔPr). After 200 fattening days, although the profit is bigger than in the other periods, due to the higher conversion ratio, the additional profit decreases, thus loss occurs, as additional expenses are higher than the value of the additional production ($\Delta Pv<\Delta CT$), due to the change occurring in the quality structure (increase in the fat content).

The company's capacity is of 25,000 pigs delivered per year, together with reaching the following technical-economic ratios:

Specification (ratios/head/year)	Capacity 25,000 heads Pigs delivered annually
Reproduction sector	
Effective number of sows	2130
Effective number of boars	25
Young sows to replace the reformed sows (% compared to the effective number of sows)	23.33
No. of sow groups	121
No. of farrowings per year	2.3
Average no. of farrowing sows	1,674
Average birthrate percentage (%)	78.59
Sows use ratio	6.82
No of piglets farrowed by each sow per year	17.36
Prolificacy (no of piglets per birth)	9.5
Total profit in the nursing period (kg/piglet)	6.3
Annual expenses/ sow (RON)	2,400
Quantity of meat delivered per sow (kg)	151.6
II. Raising young pigs sector	
Pig's weight upon entering the pig breeding farm	7
Daily average output (gr)	319
Total output	22.5
Cost/kg output (RON)	11
III. Fattening sector	
No. of fattened and delivered young pigs (head)	25,000
Duration of fattening from birth until delivery (days)	210

Daily average output upon fattening (gr)	570
Cost per kg output (RON)	8
Average weight upon delivery (kg/living)	100
IV. Final economic ratios	
Work productivity-t/ worked. Annually	70
thousands RON /worked. Annually	6
Cost per kg living weight (RON)	4.8
Profit per kg living weight (RON)	1.5

The condition of the technical potential is very good; the average degree of physical and moral wear does not exceed 25%.

From the operational analysis performed on the production activity, we have extracted the following aspects:

A) **THE STRONG POINTS** are as it follows:

- Compliance with the regulations regarding the hygiene sanitary production and trade conditions
- Laboratory analyses and issuance of certificates of quality;
- Recent technical endowments ;
- Authorization by ANARZ (National Agency for Improvement and Reproduction in Livestock Breeding)
- Enough internal norms and procedures;

B) **WEAK POINTS** are:

- The existence of only one fodder supplier;
- The accounting system involvement in the production capacity management;
- The obtained products do not entirely comply with the quality requisites (a bigger fat layer and inferior efficiency as compared to the market demands)

2.2. RESEARCH AND DEVELOPMENT FUNCTION

The main activity performed within the above mentioned function is improving the ratios used for describing the reproduction activity, namely: fertility, birthrate, prolificacy, number of piglets weaned per sow and the use ratio of sows in reproduction. Unfortunately, there is not a distinct department, and the technical manager, together with the subordinate personnel deal with production organization and improvement of the above mentioned ratios.

The sows' normal fecundity is around 90%. Prolificacy, expressed by the number of piglets produced annually by the foddered sow, represents one of the decisive factors in order to increase the number of pigs and the meat production. Obtaining a low number of piglets per foddered sow involves maintaining an increased number of sows in order to obtain the same number of piglets.

The sow use ratio depends on the duration of the production cycle and is calculated by relating the number of days in a year to the duration of the reproduction cycle. The shorter the duration of the reproduction cycle, the more births per sow, from here a higher use ratio. The reproduction cycle depends on the duration of its structural stages: sexual rest, gestation and lactation. In order to decrease the duration of the reproduction cycle, the sexual rest and piglets nursing periods can be shortened.

Intensive use of the reproduction sows ensures lower maintenance expenses and lower costs for weaned piglets, having a positive impact on the final cost of meat.

Reducing the piglets nursing duration allows more economic use of fodders, by direct feeding and not with the sow as an intermediary. The sow consumes 4 kg of fodder in order to produce the necessary milk for obtaining one output kg in piglets, while by direct consumption by the piglets, only 2 kg of fodder per output kg is consumed.

More efficient use of the farrow rooms and obtaining a higher number of farrowings and of weaned piglets per each farrow box represents another way to increase the economic efficiency of the meat production, as a consequence of intensive use of sows, which the company resorts to.

SC ABC SRL also undergoes a technological improvement program based on new methods of production organization, meaning: management by the budget, by project, etc.

A) **STRONG POINTS are** the following:

- Interest in improving the products quality as compared to our competitors;
- Financial potential for increasing the technical and technological level;
- New methods of production organization;
- Increasing the number of high-quality products in the total production.

B) **WEAK POINT** are the following:

- Lack of a research development department;
- Global strategies and programs elaborated by the top management;

2.3. TRADE FUNCTION

The activities of the trade function refer to: supplies, sale and marketing.

The marketing mix is one of the main concepts of the modern marketing theory and represents the set of marketing tools used by a company in order to attain its marketing goals on the target market.

The mix homogeneity refers to the association level of the various product lines in the final consumption, in the production process, in the distribution process. The homogeneity of S.C. ABC S.R.L. is a result of their products being consumer goods distributed by the same channels.

The company expands its activity in four ways: by increasing the quality of meat, thus expanding the mix, by increasing each category of carcass and breed race, by creating more types of products, thus increasing the mix depth and by increasing or decreasing the products homogeneity, according to its objectives: stronger reputation in one area – quality of delivered pigs.

The main objective of SC ABC SRL commercial diagnosis is estimating the company market and its position on the market. The result of the analyses performed together with the Commercial Manager, General Manager and Technical Manager

represents the basis for anticipating future income and for finding internal and external factors influencing the trade activity.

The company carries on its activity on the internal market and especially that of the Constantza County, as well as seldom in other counties. Expanding the market quota involves studying the existing offer at present and in the future and using all the marketing means and modern management in order to adapt the offer to the market request, from the structural, quality and quantity point of view.

Studies of the external environment revealed both opportunities representing a profit source and risks which can negatively influence the development strategy. The company does not perform export activities at present.

2.3.1. Competitive environment

In its competitive environment, the company functions in a monopolistic market, thus providing adequate conditions for properly satisfying the pork demand. In order to be able to remain on the market, the society improved its study of the two forces: its customers and its competition. ABC SRL practices a balance between the consumer oriented activity and determining the potential of fighting competition (anticipating their possible actions). Such balance is a result of the company efforts of diagnosing the competitive environment (in order to identify the competitive position), but also diagnosing the sale market (potential and effective market).

- The measures taken by the company in order to fight competence are as it follows:

  Maintaining a selling price below that of the competition;
- Increasing the carcass quality by genetic improvement;
- Stabilizing customers by firm contracts;
- Ensuring a continuous supply.

From the company point of view, the efficiency of the selling force shall be closely related to the ability of gathering and sending information in order to adapt to the market changes. The evolution noticed in the role of the selling force is described by resorting to four strategies:

- *the communication strategy*: the representative is a communication specialist; he provides customers with information regarding the available products and services in order to influence their buying decision;
- *the convincing strategy*: the representative understands the customers' immediate needs and tries to determine them to adapt to the various particularities of the product, thus canceling their objections;
- *the negotiation strategy:* understanding the customers' needs also means adapting the product for a better satisfaction of such needs;
- *the planning strategy*: the seller investigates the long term needs and acts as a consultant as far as such needs are concerned.

The customers are mainly legal persons and in a smaller percentage natural persons. The activity carries on according to contracts.

Main clients (beneficiaries)

- METRO; LEFLUMAR; CARNOB; SELGROS; CARMAR; MARION.

2.3.2. Price setting mechanisms

In the price policy setting process, the company takes certain steps:

- Establishing the target by setting a certain price;
- Determining the extent of the demand;
- Evaluating costs;
- Analyzing the competition prices and offers;
- Choosing the method for calculating prices;
- Choosing the final price.

The price setting objectives are as it follows:

- Surviving (remaining on the market);
- Current profit maximization;
- Current income maximization;
- Sales volume maximization;

- Maximum fructification of the market advantage;
- Promoting a qualitatively superior product (market leader).

2.3.3. Raw stocks and materials suppliers

The company has an active attitude, consisting in "counter-marketing" activities, towards the raw stocks and materials suppliers (share expressed in cost). For this purpose, the term ***"Counter-marketing"*** activities does not mean actions intended for neutralizing the seller's marketing actions, but using them, by specific actions, in favor of the buyer. In the specialty literature, such actions are also called **"Upstream marketing"** or **"Supply marketing".**

The company policy in its relations with suppliers is based on the segmentation (grouping) of the market (suppliers), but also of its own resource list, thus allowing an effort gradation and maximum efficiency of the suppliers' characterization, evaluation and selection activity.

The objectives of SC ABC SRL in its relations with suppliers are the following:

- Keeping the acquisitions costs under control;
- Increasing the number of cereals suppliers with the view of stabilizing them on a short term in order to counteract oligopolist tendencies;

Main suppliers

- Internal suppliers: Bucarest , Roman, Brasov , Constanța
- External suppliers: Belgium (Direct import)

The analysis revealed the following:

A) **STRONG POINTS** are as it follows :

- Clients stabilizing by concluding firm contracts;
- Keeping acquisition costs under control;
- Increasing demand and tendency in the market quota;
- Increasing the number of cereals suppliers with the view of stabilizing them on a medium term;
- The means used for counteracting competition are quality, price, and publicity.

B) **WEAK POINTS** are as it follows:

- Unsatisfactory own distribution network;
- Rigid system of setting the selling price;
- Lack of marketing programs;
- Up to present the company has not performed a complex publicity activity.

2.4. HUMAN RESOURCES FUNCTION

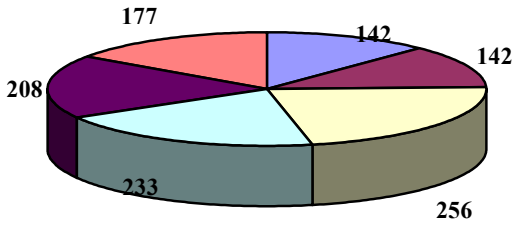
At the end of the year 2002, the company reorganization process was completed, by externalizing several profit and loss centers. The evolution and structure of the company employees are presented in the following tables:

2.4.1. Analysis of the human resources dimension and structure

Table no. 1: Employed personnel structure on personnel categories

Run. no.	Year / Personnel category	2002	2003	2004	2005	2006	2007
1.	Total personnel	142	142	256	223	208	177
	- university graduates	28	27	36	33	35	28
	- high-school	50	56	144	116	94	81
	graduates	64	59	76	74	79	68
	- skilled workers						
	- unskilled workers						

Evolution of the number of employees at the end of each year

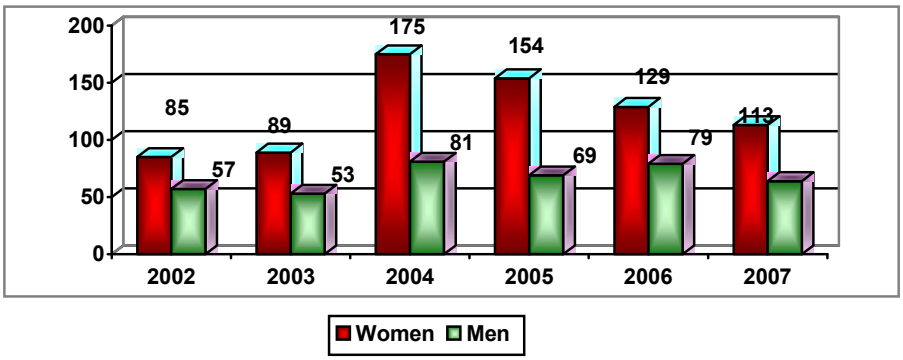


As it may be noticed, the evolution of the number of employees registered a boom in the year 2004, the trend decreasing in 2005 due to mechanization.

Table no. 2: Personnel's Structure According to Sex

Runn. no.	**Year / Sex**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**
1.	Women	85	89	175	154	129	113
2.	Men	57	53	81	69	79	64
	Total personnel	**142**	**142**	**256**	**223**	**208**	**177**

The structure of the personnel according to sex has followed the evolution trend



of the number of personnel, as it may be noticed in the chart below:

Table no. 3: University Graduate Personnel Structure

Runn. No.	**Year / Academic studies**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**
1.	Economic						
	- management	1	1	1	1	1	-
	- marketing	1	1	1	1	2	2
	- finances						
	- accounting	2	2	3	3	3	1
	- other specializations	1	1	1	1	1	-
2.	Technical:						
	- Stock Raising Engineers						

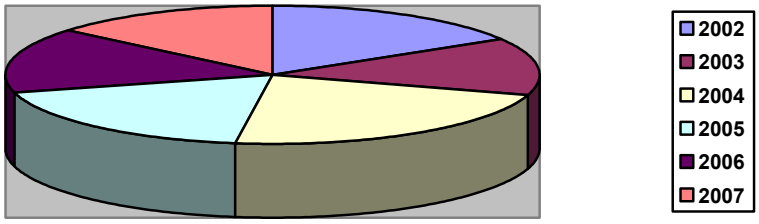
	- mechanics	14	12	14	13	12	12
	- constructions			1	1	1	1
	- others	8	8	13	12	14	12
3.	Jurists	1	1	1	1	1	-
	Total	**28**	**26**	**36**	**33**	**35**	**28**

The number of employees with academic studies grew in 2003-2006, as a result of the implementation of a career plan sustained by the company, but in 2004, following the implementation of an automatic system of economic-financial analysis and accounting, it decreased.

Table no. 4: Personnel structure according to age

Runn. No.	**Year / Age**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**
1.	< 20 years	-	-	3	-	-	-
2.	20-35 years	39	31	53	44	36	33
3.	36-50 years	82	90	152	129	125	99
4.	51-65 years	21	21	47	49	47	45
5.	Over 65 years			1	1	-	-
	Total	**142**	**142**	**256**	**223**	**208**	**177**

It may be observed that the personnel age 36-50 years is the most numerous because the company has aimed to employ and keep by means of an adequate motivational system, the experienced personnel, taking into account the fact that the activity has a continuous flux and it practically does not permit errors which might have significant implications on the production process.

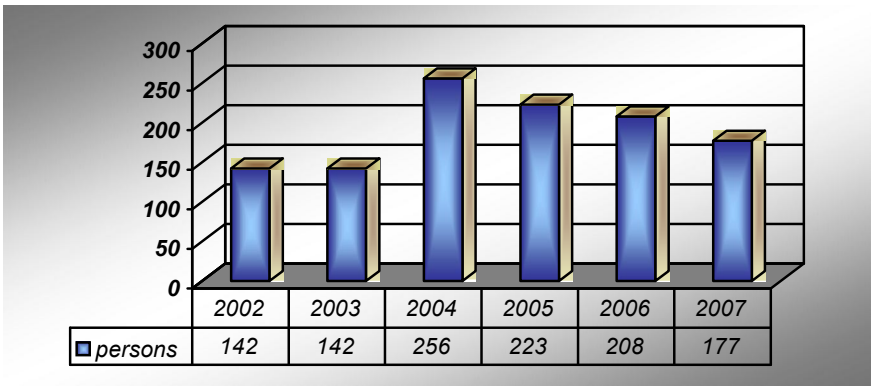


2.4.2. Human Resources Potential Analysis

Table no. 5: Employed personnel mobility persons

Runn. no.	Year / In-outs	2002	2003	2004	2005	2006	2007
1.	Total personnel at the beginning of the year	328	142	142	256	207	208
2.	Employed during the year	27	19	150	15	12	9
3.	Left during the year	213	10	36	48	11	40
4.	**Total employees at the end of the year**	**142**	**142**	**256**	**223**	**208**	**177**

The data presented in table no. 5 highlights the reconstruction process of the Company by activity externalization. Thus, in the year 2002, 213 persons were made redundant, only a number of 27 were being re-employed.



2.4.3. Human resources utilization efficiency analysis

The economic-financial ratios of the company were influenced by the evolution of the "rate of turnover" within the period 2002-2004. Out of the data presented in the table and the charts below, it results that the rate of turnover ratios first had a growth tendency (2003-2004), and starting with 2005, a slight tendency to decrease, mainly as a result of the contract by which have been accepted 30% lower prices than those of 2004, because

SC ABC SRL began that year a large program of diversification of the breeds, by obtaining hybrids.

Table no.6: Medium Productivity

Runn. No.	Year / Indicator	MU	2002	2003	2004	2005	2006	2007
1.	Rate of turnover							
	- current prices	thous. lei	300,861	590,265	744,875	736,312	912,760	1,139.584
	- constant prices	thous. lei	236,153	316,832	296,999	233,738		
2.	Productivity	thous. lei /pers.						
	- current prices		159.8	4,216.1	2,568.5	3,331.7	4,430.87	6,348.85
	- constant prices	thous. lei /pers.	125.5	2,263.0	1,024.1	1,057.6		
3.	Total employees at the end of the year	Pers.	142	142	256	223	208	177

Following the examination of the Employees Register and of the other documents held by the company, the following have been noticed:

A) **STRONG POINTS** are:

- job description table appropriation once the employment contract is signed;
- the presence of some employment procedures, modality of employment organization by contest, publicity;
- the presence of work security Authorization;
- sufficient number of workmanship;
- appropriate motivation system;
- compliance with the specific work conditions for the field of activity .

B) **WEAK POINTS** are:

- aged operative management personnel;
- lack of poly-qualification;
- office personnel has a busy schedule;
- lack of evaluation system;
- insufficient number of skilled personnel for production in some units .

2.5. FINANCIAL ACCOUNTING FUNCTION

The data presented in table 7 shows a positive evolution of the main financial equilibrium ratios. The cash ratio, calculated as the difference between the permanent assets and the fixed assets prove that after the syncope from 2002 and 2003, the financial state of the company has become balanced.

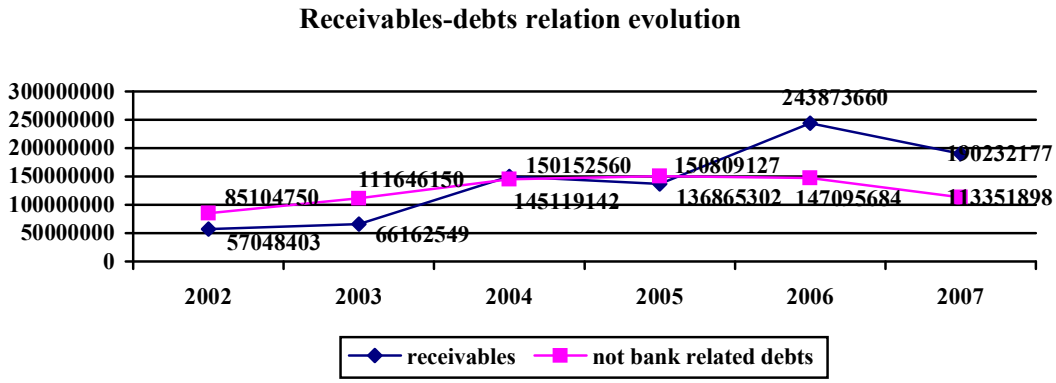
2.5.1. Financial balance ratios

Table no.7: Financial balance ratios calculations

- lei -

R. No.	Year / Ratio	Symbol	Formula	2002	2003	2004	2005	2006	2007
1.	Own assets	CP		224,347,262	1,016,486,918	1,142,087,090	1,575,333,766	1,973,451,344	1,974,628,222
2.	Fixed assets	AI		255,810,320	1,052,460,385	1,131,057,660	1,549,245,816	1,844,070,919	1,773,861,677
3.	Working capital	FRpr.	CP-AI	-31,463,058	-35,973,467	+11,029,430	+26,087,950	+129,380,425	+200,766,545
4.	Stocks	S		18,107,300	12,961,594	16,749,357	17,584,966	22,819,180	36,579,083
5.	Receivables	C		57,048,403	66,162,549	150,152,560	136,865,302	243,873,660	190,232,177
6.	Not bank related debts	Dnb		85,104,750	111,646,150	145,119,142	150,809,127	147,095,684	113,351,898
7.	Necessary working capital	NFR	S+C-Dnb	-9,949,047	-32,522,007	21,782,775	3,641,141	119,597,156	113,459,332
8.	Cash	TN	FRpr-NFR	-21,514,011	-3,451,460	-10,753,345	22,446,809	9,783,269	87,307,213
9.	Medium and long term credits	C+l		2,253,077	1,405,833	729,400	-	-	-
10.	Bond loans	Iob		-	-	-	-	-	-
11.	Permanent assets	Cper	Cpr+Ctl-Iob	226,600,339	1,017,892,751	1,142,816,490	1,575,333,766	1,973,451,344	1,974,628,222
12.	Cash	TN	Cper-AI	-29,209,981	-34,567,634	11,758,830	26,087,950	+129,380,425	+200,766,545

The analysis of the economic-financial ratios shows an improvement of the situation of



SC ABC SRL pursuant to the increase of the capacity of auto-financing and of the possibility of the company to gain results without the increase of leveraging degree.

The treasury is the key ratio for evaluating short term and long term company administration. By means of it, the company finances its activity and grants its existence. The absolute and relative value and the evolution of the treasury may characterize a certain situation of the company: financial balance, vulnerability, bankruptcy.

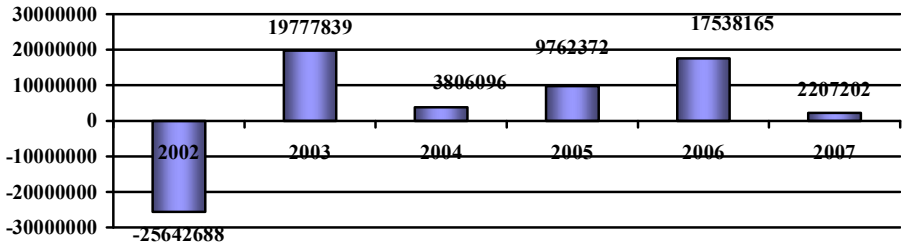
2.5.2. Evolution ratios

S.C. ABC SRL registered a profit within 2003-2006, fact which permitted them to recuperate the loss registered in the year 2002. We consider that they shall proceed to the second major restructuring stage (after the moment 2002), in which the effort to be focused on the investment activity.

Run. No.	Ratio	Symbol	Formula	MU	2002	2003	2004	2005	2006	2007
1.	Rate of turnover	CA		thous. lei	300,861,307	590,264,570	744,875,228	736,312,408	912,760,342	1,193,584,360
2.	Total incomes	VT		thous. lei	321,203,151	611,292,596	879,969,535	877,872,956	981,867,232	1,211,156,876
3.	Total expenditures	CT		thous. lei	346,895,839	591,514,757	876,163,439	868,110,584	964,329,067	1,208,949,674
4.	Gross result	RB	VT-CT	thous. lei	-25,642,688	+19,777,839	3,806,096	9,762,372	17,538,165	2,207,202
5.	Tax on profit	IMP		thous. lei	-	-	2,157,158	5,967,619	5,168,478	1,030,323
6.	Net result	RN	RB-IMP	thous. lei	-25,692,288	+19,777,839	1,648,938	3,794,753	12,369,687	1,176,879
7.	Personnel number	N		pers.	1,882	140	290	221	206	188

Out of the analysis of the above table and of the corresponding chart, it is observed that during the entire analyzed period were registered greater and greater increases of the rate of turnover at the Company level, from 300,861,307 thousands lei in the year 2002 to 912,760,342 thousands lei in the year 2006, respectively 1,193,584,360 thousands lei in the year 2004. If we follow up the situation of the net result, we observe that losses (of 25,692,288 thousands lei) were registered in the first year and in the last year was registered a profit of 1,176,879 thousands lei. All these increases were due to the increase of productions and the reduction of costs.

Gross profit Evolution



So cost reduction is in a great degree explainable by the increase of production volume and sales, which brought to the reduction of the quota of fixed expenditures on product unit. Of course, there can be also other technical, organizational, technological measures which may bring to the reduction of product cost.

The absolute level of added value ration has an increase tendency during the analyzed period, mainly due to the increase of exercise production.

The result from the operation measures, with absolute parameters, the profitability of the operation process, by deducing all the expenditures from the incomes of the exploitation. The increase tendency of the ratio highlights the process of getting profit from the operating activity, also due to other operation incomes gained.

2.5.3. Structure ratios

The evolution of the main structure ratios confirm the positive evolution of the main economic-financial ratios in 2006 compared to 2002. The value of fixed assets increased and the value of financial assets, of stocks and active assets. Practically, by the

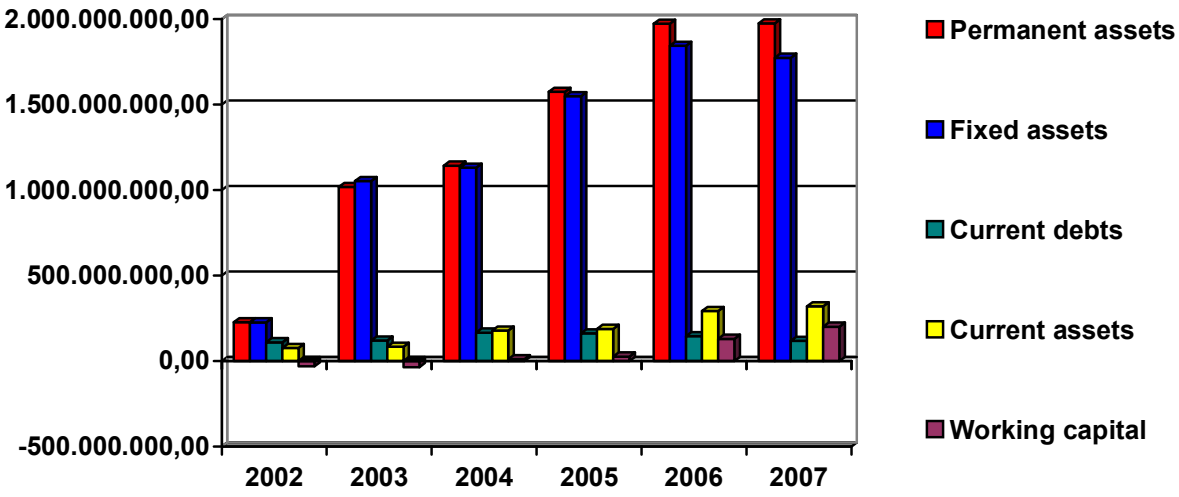
increase of speed of turnover of stocks and active assets, financial resources were insured at the level of the company at low costs.

No.	Ratio	Symbol	Formula	MU	2002	2003	2004	2005	2006	2007
A. Balance ratios										
1.	Total assets	TA		thous. lei	334,311,569	1,137,668,378	1,309,291,310	1,737,375,752	2,137,419,497	2,093,687,634
2.	Fixed assets	AI		thous. lei	255,810,320	1,052,460,385	1,131,057,660	1,549,245,816	1,844,070,919	1,773,861,677
3.	Tangible assets	IC		thous. lei	149,280,795	945,929,854	1,024,227,134	1,367,489,630	1,636,239,075	1,543,854,493
4.	Financial assets	IF		thous. lei	106,529,525	106,530,526	106,830,526	181,756,186	207,831,844	230,007,184
5.	Inventory	S Mf.		thous. lei	18,107,300 2,303,526	12,961,594 5,332,004	16,749,357 280,299	17,584,966 -	22,819,180 -	36,597,083 -
6.	Clients	CL		thous. lei	48,614,722	57,977,260	110,155,879	110,588,095	181,529,711	159,449,726
7.	Value of fixed assets in total assets	PAI	$\frac{AI}{TA} \times 100$	%	76.52	92.51	86.39	89.17	86.27	84.72
8.	The value of tangible assets - in total assets - in fixed assets	PIC	(IC/TA)×100 (IC/AI)×100	% %	44.65 58.36	83.15 89.88	78.23 90.55	78.71 88.27	76.55 88.72	73.73 87.03
9.	Financial assets value - in total assets - in fixed assets	PIF	(IF/TA)×100 (IF/AI)×100	% %	31.87 41.64	9.36 10.12	8.16 9.45	10.46 11.73	9.72 11.27	10.98 12.96
10.	Stocks value - in total assets	PS	(S/TA)×100	%	5.42	1.14	1.28	1.01	1.06	1.74
11.	Inventory value - in total assets - in stocks	PM	(Mf/TA)×100 (Mf/S)×100	% %	0.69 12.72	0.47 41.14	0.02 1.67	- -	- -	- -
12.	Active assets	AC		thous. lei	75,738,937	83,668,423	177,681,690	188,038,110	292,585,650	319,421,092
13.	Active assets in total assets	PAC	(AC/TA)×100	%	22.66	7.35	13.57	10.82	13.68	15.25

No.	Ratio	Symbol	Formula	MU	2002	2003	2004	2005	2006	2007
14.	Registered share capital	CS		thous. lei	172,288,775	172,888,775	172,288,775	172,288,775	172,288,775	172,288,775
15.	Registered share capital value in total assets	PCS	(CS/TA)×100	%	51.54	15.14	13.16	9.92	8.06	8.22
16.	Own capital	CPr		thous. lei	224,347,262	1,016,486,918	1,142,087,090	1,575,333,766	1,973,451,344	1,974,628,222
17.	Own capital value in total assets	PCPr	(CPr/TA)×100	%	67.11	89.35	87.23	90.67	92.32	94.31
18.	Permanent assets	Cper		thous. lei	226,600,339	1,017,892,751	1,142,816,490	1,575,333,766	1,793,451,344	1,974,628,222
19.	Permanent assets value in total assets	PCper	(Cper/TA)×100	%	67.78	89.47	87.29	90.67	92.32	94.31
20.	Debts	D		thous. lei	109,443,987	120,071,850	165,988,067	161,890,063	163,816,230	119,059,412
21.	Debts value in total assets	PD	(D/TA)×100	%	32.74	10.55	12.68	9.32	7.66	5.68

2.5.4. Financial ratios

Run. No.	Ratio	Formula	MU	2002	2003	2004	2005	2006	2007
1.	Permanent asset	Cper	thous. lei	226,600,339	1,017,892,751	1,142,816,490	1,575,333,766	1,973,451,344	1,974,628,222
2.	Fixed assets	AI	thous. lei	255,810,320	1,052,460,385	1,131,057,660	1,549,245,816	1,844,070,919	1,773,861,677
3.	Financing structures	Cper/AI	*	0.89	0.97	1.01	1.02		
4.	Own assets	Cpr	thous. lei	224.347.262	1.016.486.918	1.142.087.090	1.575.333.766	1.973.451.344	1.974.628.222
5.	Financial autonomy	Cpr/Cper	*	0.99	1.00	1.00	1.00	1.00	1.00
6.	Current assets	Ac	thous.	75,738,937	83,668,423	177,681,690	188,038,110	292,585,650	319,421,092



Run. No.	Ratio	Formula	MU	2002	2003	2004	2005	2006	2007
			lei						
7.	Current debts	Pc	thous. lei	109.443.987	120.071.850	165.988.067	161.890.063	145.283.618	118.189,632
8.	General liquidity	Ac/Pc	*	0,69	0,70	1,07	1,16	2,01	2,70
9.	Stocks	St	thous. lei	18,107,300	12,961,594	16,749,357	17,584,966	22,819,180	36,579.083
10.	Quick assets	(Ac-St)/Pc	*	0.53	0.59	0.97	1.05	1.85	2.39
11.	Liquid assets	Disp.	thous. lei	3,064,749	4,544,280	10,779,773	33,587,842	25,892,810	92,609,862
12.	Total assets	TA	thous. lei	334,311,569	1,137,668,378	1,309,291,310	1,737,375,752	2,137,419,497	2,093,687,634
13.	Sight liquidity	(Disp./Pc) 100	%	2.80	3.78	6.49	20.75	17.82	78.35
14.	Working capital	Cpr-AI	thous. lei	-31,463,058	-35,973,467	11,029,430	26,087,950	129,380,425	200,766,515

I estimate that at the end of the year, the society shall face a critical point from the point of view of financing, fact illustrated at the level estimated for the “sight liquidities” ratio of 0.57%.

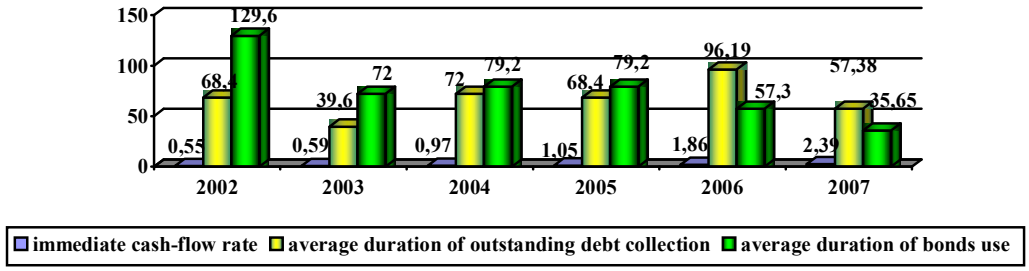
2.5.5. Liquidity ratios

SC ABC S.R.L. has undergone a deep process of technological improvement, materialized by the substantial reduction of the number of employees.

The effect may be observed by the analysis of the liquidation ratios presented in the next table. We observe the increase of the "current rate" from 0.69 in 2002 to 1.76 at 9 months 2006 compared to 2.0, representing the achieved objective. The improvement of company reliability may be observed from the evolution of the indicator "rate of quick assets" which has increased from 0.55 in 2002 to 1.65 at present, and that is a supra-unitary, fact which includes the performance of the company into a normal situation.

Run. no.	Ratio	Formula	MU	2002	2003	2004	2005	2006	2007
1.	Current ratio =	$Rc = \frac{CurrentiAssets}{CurrentIndebtedness}$	*	0.69	0.70	1.07	1.16	2.01	2.7
2.	Quick ratio =	$= \frac{CashAccount + Debentures}{CurrentIndebtedness}$	*	0.55	0.59	0.97	1.05	1.86	2.39
3.	Medium period of debentures receipt =	$= \frac{Debentures}{RateofTurnover} \times 360$	Days	68.40	39.60	72.00	68.40	96.19	57.38
4.	Medium period of indebtedness use =	$= \frac{CurrentIndebtedness}{Rateofturnover} \times 360$	Days	129.60	72.00	79.20	79.20	57.3	35.65
5.	Debts coverage ratio =	$\frac{TotalIndebtedness}{TotalIndebteness + OwnEquity}$	*	0.33	0.11	0.13	0.09	0.08	0.06
6.	Interest coverage ratio=	$= \frac{Gross\ \Pr ofit + Interests}{Interests}$	*	-1.95	4.25	2.03	4.94	10.5	0.94

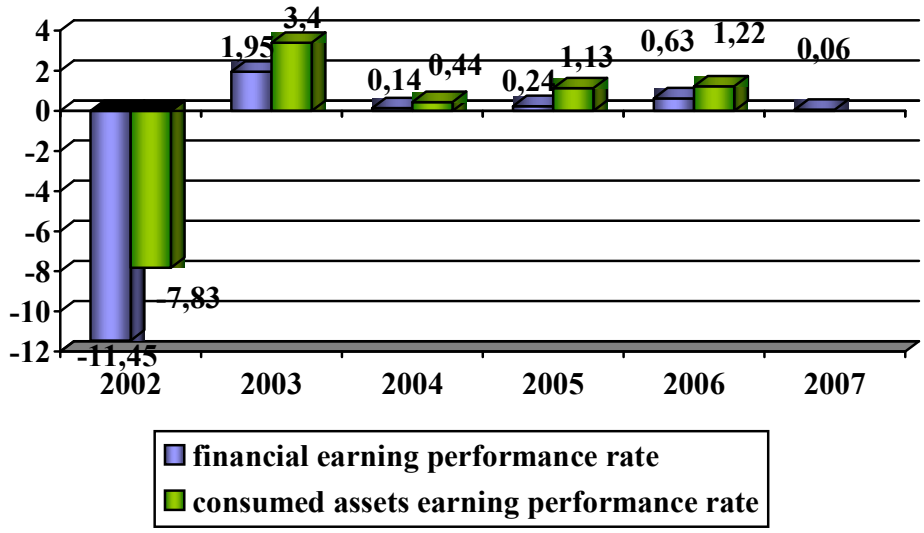
We can also remark the outrunning of "Average duration of outstanding debt collection" (111,60 days at the end of 2006) indicator form the "Average duration of bonds use" (72,00 days estimates at December 31, 2006).



2.5.6. Earning Performance Ratios

The evolution of earning performance rates demonstrates an improvement of company economic situation, however without a significant consolidation of the investment base. Thus, the earning performance rate increased from -11,45% in 2002 to 0,52% estimates for the end of 2006 and the income earning performance rate increased from -8,53% in 2002 to 0,96 on December 31, 2006.

No.	Indicator	Formula	2002	2003	2004	2005	2006	2007
1.	Financial Earning Performance Rate =	Net profit/Own capital x100	-11,45	1,95	0,14	0,24	0,63	0,06
2.	Economic Earning Performance Rate=	Gross profit/Permanent capital x100	-11,34	1,94	0,33	0,62	0,89	0,11
3.	Occupied Assets Earning Performance Rate =	Gross profit/Permanent assets +Current assets x100	-7,75	1,74	0,29	0,56	0,82	0,11
4.	Consumed Assets Earning Performance Rate =	Gross profit/Production costs x100	-7,83	3,41	0,44	1,13	1,82	0,18
5.	Income Earning Performance Rate =	Net profit/Turnover x100	-8,53	3,35	0,22	0,52	1,36	0,10

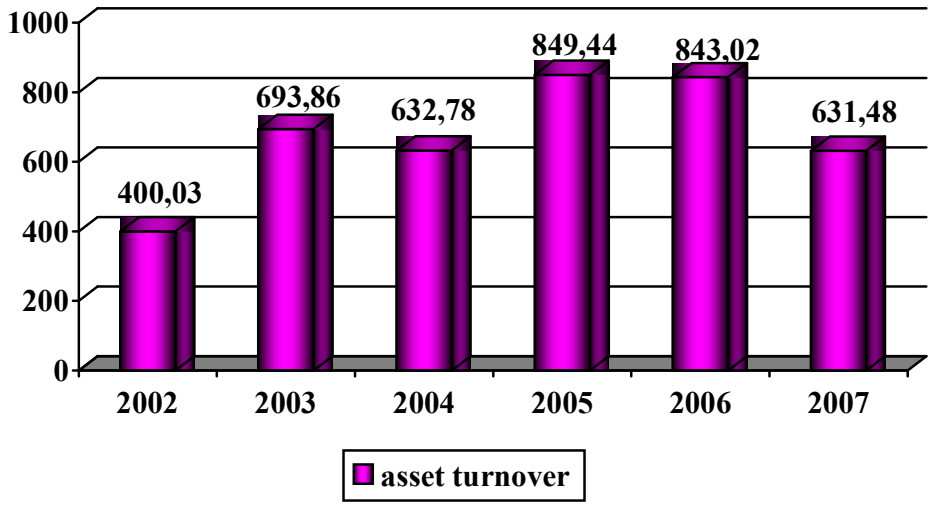


2.5.7. Accounting Ratios

The indicator "Inventory Rate" has dropped from 21,67 days in 2002 to about 6,29 days on December 31, 2006, which demonstrates a reduction of the effort to finance current activity by the decrease in material, fuel and spare parts inventory standing period.

The turnover has increased more than the total assets as the indicator significance demonstrates, the asset rotation which was 400,03 days in 2002 and 725,02 days at the end of 2006 (the table below). In order to improve this indicator, a redundant assets emphasizing campaign was initiated so that by their capitalization we may identify new financing sources for long-term investments, a priority objective for S.C. ABC S.R.L.

No.	Indicator	Formula	Meas. unit	2002	2003	2004	2005	2006	2007
	Inventory Turnover	Sales/ Inventory x360	Days	21,67	7,91	8,10	8,60	9	11,03
	Current Assets Turnover	Sales / Current Assets x360	Days	90,63	51,03	85,87	91,94	115,4	96,34
	Asset Turnover	Sales/ Total Asset x360	Days	400,03	693,86	632,78	849,44	843,02	631,48



2.5.8. Financial-Economic Indicator Synthesis

Table no. 8: Significant Financial-Economic Indicators

Nr. crt.	Indicator	Formula	Meas. unit	2002	2003	2004	2005	2006	2007
1.	Turnover index - fixed base - mobile base	 $(CA_i/CA_{99})100$ $(CA_i/CA_{i-1})100$	 % %	 100,0 -	 196,1 196,1	 247,58 126,2	 244,73 98,9	 303,38 123,96	 396,72 130,77
2.	Labor Output	CA/N	Th. RON/ pers.	159.862,54	4.216.175,50	2.568.535,27	3.331.730,35	4.430.875,44	6.348.852,97
3.	General Cash-flow	Ac/Pc	*	0,69	0,70	1,07	1,16	2,01	2,70
4.	General Solvency	$\frac{Cpr}{Cpr + Crpts}$	*	67,11	89,35	87,23	90,67	0,99	0,99
5.	Renewal of Share Capital from amortization	CS/A	Years	12,85	13,24	2,52	2,06	1,41	1,06
6.	Debt/Outstanding Debt Ratio	D/Cr	*	1,92	1,81	1,11	1,18	0,67	0,63
7.	Debt/Turnover Ratio	D/CA	*	0,36	0,20	0,22	0,22	0,18	0,10
8.	Average Salary Monthly Income	Vs/N×12	Th. RON/ pers.	31.609	110.603	81.665	109.436	153.159	162.802
9.	Labor Output Index - fixed base - mobile base	 $(W_i/W_{99})100$ $(W_i/W_{i-1})100$	 % %	 100,0 -	 2.637,38 2.637,38	 1.606,71 60,92	 2.084,12 129,71	 2.771,68 132,99	 3.971,45 143,29
10.	Salary Monthly Income Index - fixed base - mobile base	 $(Vs_i/Vs_{99})100$ $(Vs_i/Ss_{i-1})100$	 % %	 100,00 -	 3,5 3,5	 2,58 0,74	 3,46 1,34	 4,84 1,4	 5,15 1,06

The indicators "general cash-flow" and "general solvency" are displaying a normal financial situation. We are also ascertaining that the fundamental economic

correlation was maintained from the level of an economic unit, that is the labor output has increased faster than average salary.

The analysis revealed the following:

A) THE STRONG POINTS are:

- During 2002-2006 the financial-economic situation at SC ABC SR.L. has constantly improved.
- The profitability rate, general solvency, immediate cash-flow rate have increased and inventory rotation and the indebtedness degree have decreased.
- The increase of self-financing capacity.

B) THE WEAK POINTS are:

- In order to continue the economic efficiency increase at company level, it is necessary to identify long-term investment financing sources;
- Diversifying client portfolio in order to increase income;

2.6 ORGANIZATIONAL SUBSYSTEM

The organizational structure of an economic unit represents the ensemble of its consisting posts and work departments, their manner of organization, grouping and subordination, as well as the main connections established between them in view of the best fulfillement of economic unit objectives.

The organizational structure the manner of realization of an ensemble starting from its consisting elements and taking into account the requirements that the whole ensemble must meet.

The managerial team is performing an active management whose conception uses various management methods according to actual situations. This style has led to the avoidance of labor conflicts.

The ensemble organisms at SC ABC SRL are resulted from reuniting several basic organisms under a single authority. Reuniting several ensemble organisms leads to the formation of another ensemble organism, but more complex. There are two or more

leaders within these organisms, but the authority remains unique because it is exercised by delegation.

The structural connections are basic elements of organizational structure which find themselves in all work departments, as well as between departments, upon which the organizational structure operation being largely dependent.

The analysis revealed the following:

A) **THE STRONG POINTS** are:

- The control is thorough and systematic;
- Management methods according to actual situations;
- Flexibility, cooperation between departments.

B) **THE WEAK POINTS** are:

- The principle of management is breached by double subordination;
- Routine specialization is very strong;
- Basic level synthesis.

2.7. INFORMATICS SUBSYSTEM

It is supported by a high-tech computer system that assists in the activity of supply, marketing, labeling, accounting and financial-economic activity.

There is also a long series of long informatics circuits which are to be improved. Frequent filtration and distortion situations are not met.

A) **THE STRONG POINTS** are:

- The structure and nature of data and information circulating within the company has been substantially improved;
- High level of equipment with means of information, processing, transmission, information stock age.

B) **THE WEAK POINTS** are:

- Long informatics circuits
- The existence of some informatics system deficiencies.

2.8. DECISION-MAKING SUBSYSTEM

The managers of SC ABC SRL take a variety of decisions taking into account time horizon and the implications on the company. Current function-orientated decisions are predominant, while strategic decisions are taken only by the Shareholders General Assembly (AGA).

An authoritarian management practice virtually decreases the number of group decisions with implications on the working climate.

When tactical-strategic decisions are adopted on strategic business units, the stages of decision-making process are being observed.

A) **THE STRONG POINTS** are:

- High degree of decision centralization;
- Selection of adequate strategy type;
- The existence of a clear task and communicated to the staff.

B) **THE WEAK POINTS** are:

- Tensioned working climate;
- Strictly formal communication;
- Exercising pressure on the subordinates.

CONCLUSIONS OF INTERNAL DIAGNOSIS

The positive and negative aspects identified in the five functions and four subsystems of the company can be synthesized thus:

Aspect	Function	Type	Primary constraint cause	Impact on overall activity	Time horizon of the influence	Priority possibility of managerial interventio n	Interaction with other positive/nega tive aspects
Observing the regulations regarding the production and marketing hygienic conditions	Production	+	Activity shut-down	Premises of continuing the activity	6 years		Positive influence on the company image
Recent technical equipments	Production	-	Activity efficiency	Achieving technical performances	6 years	Urgent	Positive influence on production
ANARZ Authorization	Production	+	Populating Necessity	Increasing Market Share	3 years		Positive influence on production
The existence of a sole fodder supplier	Production	-	The absence of Mk department	The rise of production price	6 years	Important	Exercices influence on financial contraints
Produce not entirely fulfilling quality requirements	Production	-	Counteracting the competition	Market share under company potential	6 years	Urgent	Exercices influence on financial

Preoccupation for production quality increase	Research-development	+	Counteracting the competition	Premises of permanent objective realization	3 years		Influence on human, financial, production resources
Absence of a research-development department	Research-development	-	Technical indicators improvement	Premises of strategy and programes realization	6 years	Important	Exercices influence on productive contraints
Establishing clientele by drawing binding contracts	Commercial	+	Large prices fluctuations	Increasing Market Share	2 years		Influence on human, financial, production resources
Absence of marketing programs	Commercial	-	The absence of Mk department	Market share under company potential	3 years	Important urgent, Possible	Influence on human, financial, production resources
Adequate motivation system	Human resources	+	Personnel fluctuation	Loyalty of persons for the company	6 year		Positive influence on human resources
Identifying long-term investment sources	Accounting	-	High indebtness degree	Activity efficiency increase	3 years	Important possible	Exercices influence on financial contraints
Informatics system according to company objectives	Managerial	+	International circuits improvement	Fundamental objectives realization	3 years		Influence on human, financial

CHAPTER III

THE DRAWING UP OF THE INVESTMENT PROJECT

3.1. THE PROJECT IMPLEMENTATION METHODOLOGY

The medium- and long-term strategy of S.C. ABC S.A., established last year constitutes the main reference point in relation to which all decisions concerning modernization and diversification of the activity shall be taken. The company` s strategic objective for the period from 2009 to 2012 is the constant qualitative improvement of its products and services, for the complete fulfillment of its external and internal clients` needs and wishes. The fulfillment of this objective requires the reaching of some intermediate targets, among which the most important are:

- The development of S.C. ABC S.A` s production and marketing capacity;
- The constant training of the company` s personnel for adapting to the new technologies and market tendencies;
- The extension of pig meat market to the neighboring markets;
- The implementation of quality standards for the company` s products;
- The diversification of the product range, of the distribution means and of the payment ways.

According to the adopted medium- and long-term strategy, the necessity of S.C. ABC S.A.`s modernization project has emerged pursuant to the fulfillment of a market survey, by the company` s managers, among the present clients and among the potential beneficiaries of the company` s products. The survey aimed at the assessment, on the one side, of the company` s position within the pig breeding market, of the market absorption capacity and of the contestants` offer diversification degree, and, on the other hand, pursued to determine the main strong and weak points of the company within the region` s market as well as the company` s image among its present and potential client (discontents, deficiency correction possibilities).

This survey revealed the fact that the clients` main discontent is bound to the insufficient quantity of pig meat labeled by our company in the country` s food stores, due to the technological constraints the company displays.

Another reason of discontent is the way in which the meat is delivered, a thing worth paying attention to being the absolutely necessary purchase of some medium-sized means of transport, with a view to the company` s further development.

Concerning the company` s image among its clients and on the region` s market, 90% of the present clients declared that they will continue to set out orders to S.C. ABC S.A, whenever necessary and 50% of the interviewees (especially among private small and medium economic agents) presently being no clients of the company, showed interest in collaborating with the solicitor.

The company also enjoys a good image among the providers, all of them appreciating the fact that S.C. ABC S.A. pays its bills on time.

The company` s market position is good, as it overran the difficulties inherent to the beginning period and has been constantly enhancing its activity. The medium-term objective of the company is the raise of its market quota, by the provision of a wider range of products at prices below those of the concurrence and by extending itself within the regional internal market.

An analysis of the project strong and weak points is presented below:

Strong points

- A good market image due to the prompt fulfillment of the orders and bill payment to the providers;
- Prices below the concurrence for identical quality standards;
- The non-existence of pig meat stocks, this only being provided to order;
- The constant collaboration with the client in the fulfillment of meat distribution mode;
- Investments fulfilled by self-financing, as there are no debts to third parties.

Points to be improved

- The diversification of pork categories;
- The improvement of medium-size meat distribution transport.

This analysis, made by S.C. ABC S.A, led to the drawing up of the proposed project implementation methodology.

First of all, the projects` team will be made up, consisting of the general manager (the project manager) and other seven persons and being directly responsible for the project` s implementation.

The purchase of the installation included within the project will be made pursuant to a prospecting and offer selection phase, on the basis of some criteria presented in the detailed activity description. The negotiation of the installation purchase conditions will be made by the company` s lawyer within a two months` period.

The installations` receipt will be made in four distinct phases, simultaneously with the personnel` s training period, with a view to their employment. As, through the present project, S.C. ABC S.A aims at reaching some medium- and long-term results, both quantitative (new productive investments, a raise in the turnover) and qualitative (labor productivity improvement, the building up of the personnel, a raise in the efficiency), personnel will be trained and specialized for the adequate employment of the new installations.

Also, for verifying the good administration and use of the funds received for the project, an activity of financial and accounting audit, created by AUDIT INTERNATIONAL GROUP S.A., will be initiated. On its basis, final assessment reports will be made for the Contracting Authority (the project` s financer) and for the clients.

This project continues other smaller-scale actions, undertaken by S.C. ABC S.A from 2006 up to the present, with the purpose to raise the company` s material basis and to improve its activity.

The proposed team for the implementation of this project is made up of eight persons, experienced in undertaking similar actions in this field of activity.

The projects` accounting is kept apart from that of the company` s activities, by the company` s woman accountant.

In the context of project resource allocation generalization, project-oriented accounting is a flexible and useful instrument at the disposal of project

managers, being another way of organization at analytical level of information. In the case when activities, resources and funds are structured at the financer` s level, in total accordance to the general requests, the project-oriented accounting will take over the accounts from the general accounting and the records to be made will bring about, as a paramount criterion, the affiliation to a project, the audits being related to the nature of the operations, to the phenomenon. Accounting information systems include functions that take over this breakdown level and then fulfill the aggregation appropriate to the known typologies. Project-oriented accounting has the advantages of reaching the planned levels and of taking into consideration the temporal factor, two essential coordinates in decision making.

Project-oriented accounting corresponds to a new vision, according to which, departing from financing, the finality of the activities will be pursued, either by using the possibilities offered by financial accounting (monistic accounting), or by using the possibilities granted by financial accounting, together with the financial administration accounting (dualist accounting).

The further developments have the role of underlining complex situations regarding the actualization of allocations made through this project , as well as value interchanges with level unleashing and level exceeding effects.

Moreover, the correspondence between the accounting formulas in general accounting and the accounting formulas to be defined by project-oriented accounting will be strengthened (in fact, there will be a simultaneous operation record in the company` s accountancy and in the project-oriented accounting).

The project will be exclusively carried out by the solicitor. For assessing the level of the Expected results and to correct the digressions in due time, the project team will be constantly monitoring the target fulfillment stage, acting accordingly.

Within the special installation prospecting activity, punctuality related to the settled terms, the finding of potential installation providers as well as the information about their prices will count.

During installations` purchase condition negotiation, we shall pursue the purchase of a competitive installation, at a reasonable price.

During the installations` receipt and the verifications, we shall aim at the quality of installation assembling activities. Also, we shall monitor the activities` time-framing.

During the personnel` s training for the installation employment, we shall aim at the selection of the best workers who will effectively work with these installation, their skills being tested at the work place.

During the editing activity of some promotional materials, we pursue the drawing up of some leaflets and booklets, that would present, as accurate as possible, the activities of the company.

The internal control methodology is centered on the operative tracking of financial rates the project includes. This thing allows: the project management performance assessment, the assessment of the project` s financial health, the issuance of some prognoses regarding the project` s situation and its financial performances.

The employed rates are the following:

- financial balance rates, to demonstrate the fact that through the project` s implementation the company` s financial situation would improve:
- immobilized assets` financing rate = permanent capitals/immobilized assets;
- financial autonomy rate = personal capitals/long-term obligations;
- profitability rates, for the activities` and investments` efficiency and profitability assessment;
- economic profitability rate = the gross exploitation outcome/total assets;
- own capital financial profitability rate = (the economic result/own capital) x 100;
- permanent capital financial profitability rate = (the economic result/own capital) x 100;

3.2 DETAILED DESCRIPTION OF THE ACTIVITIES AND THEIR SCHEDULING

The project will be carried on for a period of 24 months, beginning with January 1, 2009. For the project's good implementation and for reaching the Expected results the fulfillment of the activities below will be necessary.

The activities of the project and the duration:

Run. No.	The name of the activity	The abbreviation of the activity	The duration (months)
1	The making up of the project team	A01	1
2	Prospecting the installation market	A02	3
3	Negotiation of machinery purchase contract and its signing up	A03	2
4	Receipt of the installation	A04	4
5	The grained foraging line installation	A05	3
6	The making of working tests	A06	3
7	Personnel training for the employment of the new installations	A07	5
8	The fulfillment of the financial and accounting audit for the project` s first year	A08	2
9	Editing some booklets, promotional leaflets and newspaper events	A09	1
10	The accomplishment of the project` s financial and accounting audit	A10	5
11	The drawing up of final evaluation report	A11	1

ACTIVITY A01: **The making up of the project team** *(the activity begins on January 1, 2009 and the deadline is January 31, 2009)*

Approaches to the activity: the feasibility study, the company` s organization chart and the CV-s of the company` s employees.

Presentation of the activity: With a view to a more operative and efficient management of the activities included in the project, a special project team will be created within the company, consisting of 8 persons under the direct coordination of the general manager. She is bound to deal, on the whole duration of the project, with the specific tasks within the project, in parallel with the daily tasks required by the company` s activity.

Expected results: Up to January 31, 2009, the team will be created and operational.

In charge with the progress of the activity A01 is: P1.

ACTIVITY A02: Prospecting the installations market **(the activity begins on February 1, 2009 and the deadline is April 30, 2009).**

Approaches to the activity: Leaflets and booklets of grained fodder distribution installation providers and information about the period of when fares and exhibitions will take place.

Presentation of the activity: Market research is absolutely necessary, in order to choose the best machinery versions, according to the quality-price ratio. In this sense, a direct and indirect prospecting will be carried out by companies producing machinery necessary to the pig feeding grained foraging line installation, both in our country and by the agencies/the importers from foreign companies in Romania. Some offers have already been received, whereas others are to be received up to the end of November. The marketing process will include the following phases:

- the establishment of the potential machinery delivering companies;
- telephone of fax contacting of the companies to request the quality and price offers;
- going to fares and exhibitions taking place in Bucharest and Hanover to better know the offer;
- selecting the best equipment and installation versions among the received offers, on the basis of technical specifications, of quality and price.

In charge with marketing and the offer selection will be: P2.

After the selection, the versions most convenient to S.C. ABC S.A will be chosen, both from the viewpoint of quality level and technical specifications and of the price. The main selection criteria are: the easiness of exploitation, the output obtained, the installation` s performance, the celebrity of the manufacturing company, the price.

Expected results: Up to April 30, 2009, two alternative versions for each machinery will be chosen, on the basis of the above-mentioned criteria, prior to the purchase negotiations.

ACTIVITY A03: Negotiation of machinery purchase conditions and the signing of the contract (the activity begins on May 1, 2009 and the deadline is June 30, 2009).

Approaches to the activity: The result in A02 is the contract model established by P3.

Presentation of the activity: After the selection of the most convenient offers, the project manager shall contact the chosen providers in order to firmly establish the machinery purchase conditions. We shall especially insist on the following points:

- the conditions regarding the machinery transport, especially if this one is imported;
- the machinery receipt deadline;
- the guarantee and the service offered by the provider;
- payment conditions and the elements included in the machinery total price;

Following the negotiations, the main elements lying at the bottom of the provision and installation contract for the mechanized grained foraging system will come out.

Expected results: Up to June 30, 2009, all grained foraging line purchase conditions will be accepted by the parties and the contracts for sale and purchase will be signed.

The persons in charge with carrying out this activity are P2 and P3.

ACTIVITY A04: Installations` take over (the activity begins on July 1, 2009 and the deadline is October 31, 2009).

Approaches to the activity: The provision and installation contract and the relevant receipt.

Presentation of the activity: Pursuant to signing the contracts with the providers, S.C. ABC S.A will take over the purchased grained foraging line.

Expected result: Up to October 31, 2009, the installations will be taken over.

The persons in charge with carrying out this activity properly are P2, P3 and P4.

ACTIVITY A05: Machinery installation (the activity begins on November 1, 2009 and the deadline: January 31, 2010).

Approaches to the activity: The provision and installation contract.

Presentation of the activity: Pursuant to the installations` take over, these will be mounted and tested, with a view to the validity of respecting contractual conditions regarding quality.

Expected result: Up to January 31, 2010, the grained foraging line will be installed, being commissioned according to the contractual provisions.

The person in charge with carrying out this activity properly is P2.

ACTIVITY A06: Making the working tests (the activity begins on February 1, 2010 and the deadline is April 30, 2010).

Approaches to the activity: The technical documentation attached to the provision and installation contract.

Presentation of the activity: The working tests will begin at the same time with the installation of the mechanized system.

Expected result: Up to April 30, 2010, all working tests will be done.

The persons in charge are: P2.

ACTIVITY A07: Training the personnel for using the new installations (this activity begins on February 1, 2010 and will end on June 30, 2010).

Approaches to the activity: The technical documentation attached to the provision and installation contract.

Presentation of the activity: During the working installation testing period, P2 will train the personnel with a view to using the new installations. It is necessary that we both pursue a theoretical instruction, focused on the detailed presentation of

technical specifications and of safe employment and a practical instruction by actually working with the machinery.

During the training process, a major stress will be laid upon learning the labour protection rules and norms, by the employees which will use the machinery.

Expected result: Up to June 30, 2010, all the employees of S.C. ABC S.A, in production activity will be able to use the new installations in conditions of maximal efficiency and safety.

The persons in charge with this activity are: P2 and P6.

ACTIVITY A08: The accomplishment of financial and accounting audit for the project` s first year (the activity begins on November 1, 2009 and the deadline December 31, 2009).

Approaches to the activity: The accounting documents of the project and the reports drawn up in course of the project.

Presentation of the activity: After the project` s first year, it is necessary that the project is audited. The objectives of such an audit are relatively simple and they refer to:

- project situation analysis after the project` s first year;
- identification of the risks typical of the present phase of the project;
- determining the modifications that should be made to the project` s management or plan.

The company` s financial and accounting audit activity will be assigned to a Y1 specialist.

Expected results: Carrying on a financial and accounting audit activity, by a field expert, up to December 31, 2009.

The persons in charge with this activity are: P3, P4, P5 and P7.

ACTIVITY A09: Editing some booklets, promotional leaflets and press appearances (the activity begins on May 1, 2010 and the deadline is: May 31, 2010).

Approaches to the activity: The grained foraging mechanized system employment performances.

Presentation of the activity: With a view to a good promotion of the company` s image, 1000 leaflets and booklets for the presentation of S.C. ABC S.A and its offer will be printed. These leaflets and booklets will be given to the potential company clients both when contacting them directly and at the fares and exhibitions the company will take place in. A partnership contract will be signed up with Y2, both for the printing of leaflets and booklets and for press appearances.

Expected results: Up to May 31, 2010, all the 1000 leaflets and booklets will be printed, as well as all newspaper articles on a one-year period.

The persons in charge with this activity are: P3 and P8.

ACTIVITY 10 (A10): Fulfilling the project` s financial and accounting audit (the activity begins on July 1, 2010 and will end on November 30, 2010).

Approaches to the activity: The project` s accounting documents and the report filled out in the course of the project.

Presentation of the activity: The internal audit activity is absolutely necessary for verifying, assessing and measuring the efficiency of the internal control system and of the quality of its performances. Before drawing up the final report, S.C. ABC S.A aims at organizing an audit by Y1 and especially of a financial and accounting audit. It mainly aims at acknowledging the documents and of the accounts, of the accounting system used in the project. The audit of the company` s financial and accounting activity will be assigned to a specialist from a company favored by the competent specialized authority. Departing from the results obtained in the audit report, a report to the project` s financers will be drawn up.

Expected results: The drawing up of the financial and accounting, audit report, by Y1 up to November 30, 2010.

The persons in charge with this activity are: P3, P4, P5 and P7.

ACTIVITY A011: The working out and editing of the final assessment report (the activity begins on December 1, 2010 and the deadline is December 31, 2010).

Approaches to the activity: All the situations and documents of the project.

Presentation of the activity: The final evaluation report, following the pattern required by the financer, is based on the data provided by the financial and accounting internal audit report previously drawn up. The final evaluation report will be worked out and edited by the project manager together with his team and will be presented to the financer. Apart from presenting the financial data related to the way the received money have been used, the report also contains information related to the way in which the implementation of this project led to the improvement of the Petition company` s activity, to a raise in the employment of production capacity, at the improvement of distribution methods etc. The final evaluation report is put at the disposal of everyone concerned with the activity of S.C. ABC S.A.

Expected results: The final evaluation report will be drawn up and presented to the financer and to everyone concerned up to December 31, 2010.

The persons in charge with this activity are: P1, P4, P6, P7 and P8.

The matrix of the activities and of the persons fulfilling them:

Persoane / Activități	P1	P2	P3	P4	P5	P6	P7	P8
A01	X							
A02	X	X						
A03	X	X	X					
A04		X	X	X				
A05		X						
A06		X		X				
A07		X				X		
A08			X	X	X		X	
A09			X					X
A10			X	X	X		X	

A11	X			X		X	X	X

3.5 THE PROJECT RESOURCES

3.5.1 ESTABLISHING THE PROJECT RESOURCES

The office of S.C. ABC S.A. is in Constantza County, Negru Vodă Commune. The farm lies on a surface of 17 ha and has a position corresponding to the veterinary and sanitary norms for pig breeding and fattening.

The knowledge and experience in the field, both of the company managers and of the team make up an important resource for the company. We also mention that the company is connected to INTERNET, this being an important means of advertising and finding new providers.

Resource planning is made by first representing the tasks` structure in a the form of a matrix, including columns where executor-related data and data related to the necessary material resources will be written. This method has the advantage of allowing the immediate substitution and the correlation of resources with the activities.

Human resources

The work force is the most important category of resources, as the consequences related to unavoidable variations involve large additional expenses. In the same time, manpower is an adverse resource and severe restrictions should be imposed, regarding the consumption on time unit.

Run. No.	**HUMAN RESOURCES**	**THE POSITION**
1	**HOLBAN IONICA**	**PROJECT MANAGER**
2	**ANDRONIC NICOLAE**	**ZOOTECHNICAL ENGINEER**
3	**COSMEANU IONELA**	**LAWYER**
4	**NEGRU IULIAN**	**CONTROLLING SPECIALIST**
5	**DOBÂRLEANU ADRIAN**	**ECONOMIC ANALYST**
6	**UDRESCU MARGARETA**	**RESOURCE EXPERT**

		ECONOMIST
7	**COMĂNESCU ANCA**	**ECONOMIC ENGINEER**
8	**PÂRVU IOANA**	**MARKETING SPECIALIST**

For the accomplishment of the financial and accounting audit, a contract will be signed up with Audit International Grup S.A. (Y1). For publishing the promotional materials and booklets, a contract will be signed up with Compress Advertising (Y2).

Financial resources

The funds assigned for the fulfillment of the complex actions have a certain time-framing. Financial resources have a very high elasticity, their replanting having no consequences comparable to the ones of human resources.

The personal assessment regarding the installation of the grained foraging line for pig feeding is 987,700 Euro. This line includes: FNC (Combined grain factory); 3 bunkers; elevators; command computers.

S.C. ABC S.A. disposes of safe resources for covering the necessary amounts of the activity carried on, these sources being part of the integral property of the company. Within the last two financial exercises, the total income of S.C. ABC S.A. recorded raises in the turnover, both in their nominal value, as well as in their real value. The structure of the company` s incomes, in the years 2007 and 2008, on categories of income, is presented below:

Under these conditions, the gross profit of the two exercises was, also according to the Profit and Loss Account, of 44,697 € in 2007 and of 119,489 € in 2008. As implied by the situation above, the main source of income is the selling of own products. The above-mentioned turnovers were made for a total number of 77 orders in 2007 and of 67 orders in 2008. The main clients were CAMPOFRIO (orders totalizing 60,780 €), SC MARION SA Constantza (52,558 €), S.C. CARNIPROD SA Tulcea (155,100 €), S.C. SUINPROD SA Babadag (220,550 €) and diverse physical persons (25% of the total turnover).

Material resources

Material resources have a more reduced importance than human ones, as their stocking leads to sufficiently elastic restrictions.

Apart from the financial and human resources it disposes of, S.C. ABC S.A. estimates technological equipments and other fixed means, as follows:

	SIMBOLIZATION
Inventory objects	
1. Prenotching FCTI device	R01
2. particle suction apparatus AP 3000	R02
3. Belt sander machine	R03
4. Electric drill press	R04
5. Punching machine with accumulator	R05
6. 200/400 M HP3 Compressor	R06
7. TE 5-201300 pick-hammer	R07
8. VITAP punching machine	R08
9. GRIGGIO circular	R09
Endowments	
10. mobile phone	R10
11. Minolta HF500Af fax machine	R11
12. Canon FC 224 Xerox machine	R12
13. P4 computers (8 pieces)	R13
14. HP 660 C Printer	R14
Fixed means	
Aro automobile	R15
Krane	R16
Articulated Volvo	R17

The endowments (R10-R14) have been allotted since the beginning of the project.

The material resources R01-R09 have been assigned once with the beginning of A05, and the fixed means included in the presentation above (R15, R16, R17) after the end of the project` s duration are included in its residual value.

3.5.2. THE CORRELATION OF RESOURCES WITH THE ACTIVITIES

The correlation of resources with activities represents the repartition of resources so that the execution of complex action is possible in the shortest term and in case of limited resources. The case of human resources correlation with the project activities is presented in **Appendix 3**.

Resource leveling by critical route analysis aims at elaborating calendar programs with a maximally uniform resource repartition. The resources` leveling objective is profile uniformity minimization (or profile uniformity maximization).

For calculating the expenses with the persons taking part in the project, we departed from a gross salary total of 129,600 euro, to which we add the other taxes and fees, according to the law in force, as follows:

GROSS SALARIES	Health Insurance Tax 25%	Dole Tax 3,5%	Health tax 7%	WORK RECORD COMMISSION 0.75%	TOTAL WAGE EXPENSES
129,600	**32,400**	**4,536**	**9,072**	**972**	**176,580**

OTHER PERSONNEL EXPENSES (the estimated value of **5,880 euro**).

Internal travels include expenses with accommodation, daily fees, the transport of persons participating in the project for its entire duration, amounting to 2,880 euro. The sum was estimated on the basis of the market prices.

External travels point to traveling with the purpose of taking part in the Stock Raising Mechanization Machinery Fare in Hanover. The 3000-estimation is based on the experience of the previous years, when our company took part in this manifestation.

MATERIAL EXPENSES AND SERVICES (the estimated value of **Euro 115,024**)

ADMINISTRATIVE EXPENSES: amounting to **Euro 31,992** include

- telephone subscription of 131 Euro/month x 24 months = Euro 3,144 (including fax)
- mobile phone subscription: 40 Euro/month x 24 months = Euro 960;

TOTAL = Euro 4,104

- Electric energy expenses: according to the calculi, the installed power of mechanization system, of the office endowments` consumption and of external and internal lighting is 70 kW/h. At a consumption for 6.000 hours and a cost of Euro 0,06 /kw, we have:

  70 kw x 6,000 hours x Euro 0,06 /kwh = Euro 25,200
- Water and heating expenses: for thermal energy consumed only during winter, the estimated value is of Euro 200 /month, that means:

  144 cm/year x Euro 0,10 x 2 years = Euro 288

EXPENDABLE MATERIALS EXPENSES: the value of **Euro 6,312** includes Xerox paper, printer cartridges, stationery articles and others

POWER FUEL AND CAR INSURANCES EXPENSES: the estimated value is **Euro 23,630**, being based on the estimative calculus resulting from the vehicle ` s logbook and from a car insurance for the automobile ARO, included among the necessary endowments for the implementation of the project.

INVENTORY OBJCTS EXPENSES, amounting to **Euro 7,735**, include the following:

SPARE PARTS EXPENSES, including the pieces necessary to the grained foraging line installation as well as the ones necessary to the optimal use of the ARO car.

EXPENSES FOR THE SERVICES OF THIRD PARTIES (estimated value of **Euro 32,760**)

These expenses are made on the basis of partnership contracts for two of the project activities, namely:

- Financial and accounting audit fulfillment: Euro 27,200 (for a period of 7 months)
- the editing of some booklets, promotional leaflets: Euro 5,560

OTHER EXPENSES PERTAINING TO THE PROJECT (estimated value of **€ 10.719,00**)

Throughout the project, expenses such as bank commissions, foreign exchange rate differences, inflation and others also arise.

INDEPENDENT EQUIPMENTS AND INVESTMENTS (estimated value of **€ 1.053.687,00**)

THE GRANULATED FODDERING LINE: subsequent to the financial possibilities analysis of the capacity of investment recovery, the company ABC SA wishes to acquire this line for the price of € 987.700,00 for the granulated foddering mechanization of the fattening, gestation and maternity halls.

EXPENSES ON DEVICES AND OFFICE SUPPLIES: for a good implementation of project activities it is planned the acquisition of:

Run no.	EQUIPMENT	Amount €
1	Nokia 5110 Mobile phone	346
2	Minolta HF 500A Fax	115
3	Canon FC 224 Copier	241
	Total	702

EXPENSES ON COMPUTERS AND PERIPHERALS in the amount of € 13.280,00 include the cost of 8 Pentium IV computers, 8 monitors and one HP printer.

EXPENSES ON FIXED ASSETS NECESSARY FOR PROJECT IMPLEMENTATION includes:

Run no.	FIXED ASSETS NECESSARY FOR PROJECT IMPLEMENTATION	Amount €
1	Aro Jeep with Toyota engine	18.579
2	Crane	18.426
3	Articulated IFRON	15.000
	Total	52.005

CHAPTER IV
ECONOMIC AND FINANCIAL EVALUATION OF THE PROJECT

The project value is € 1.360.000,00. Own resources in the amount of € 561.328,00 and outside financial resources in the amount of € 798.672,00 are used, amount calculated on an exchange rate of 3,8 Lei/Euro. In establishing this exchange rate, the evolution on the financial market and the project implementation period were considered.

The granulated fodder manufacturing line cost for animals is € 987.700,00.

4.1. The calculation of payment obligation, reimbursement rate and annual interest

The payment obligation, reimbursement rate and annual interest have been calculated based on the patterns presented in [STOI 02], observing the following conditions: annual interest 9%, period of grace 2 years, fitting the implementation timeframe and interest capitalization and reimbursement period 8 years.

The reimbursement obligation at the end of warranty period is € 911.704,00.

$$\text{Ob}=\sum_{h=1}^{c} C_h (1+rd)^{g+1-h} = 419.491(1+0.09)^2 + 379.181(1+0.09)^1 = € 911.704,00.$$

The calculation shows a constant annual annuity of € 164.722,00/year.

$$Ah = Ob\frac{rd(1+rd)^n}{(1+rd)^n - 1} = =911.705\frac{0.09 \cdot 1.09^8}{1.09^8 - 1} = 911.705 \text{x} 0.180675 = € 164.722,00/\text{year}.$$

The following symbols have been used: rd – interest rate, C_h – annual credit installment, g – period of grace, c – credit period, n – credit reimbursement period.

The annual payment obligation during reimbursement period, with the interest spreading on credit receiving and reimbursement period are calculated in the next table:

Table: annual payment obligation

Years	**Euro credit**	**Obligation at the beginning**	**Annual interest**	**Obligation +interest**	**Annuity (interest+ reimburseme**	**Remaining obligation at the end**

		of year			nt rate)	of year
1	419.491	0	37.754	37.754	0	457.245
2	379.181	457.245	75.278	532.523	0	911.704
3	0	911.704	82,053	993.758	164.722	829.037
4	0	829.037	74.613	903.650	164.722	738.928
5	0	738.929	66.503	805.432	164.722	640.710
6	0	640.710	57.664	698.374	164.722	533.652
7	0	533.652	48.028	581.681	164.722	416.959
8	0	416.959	37.526	454.485	164.722	289.764
9	0	289.764	26.078	315.842	164.722	151.120
10	0	151.120	13.602	164.722	164.722	0
Total	798.672		530.008		1.317.776	

The interest and reimbursement rates during credit reimbursement period are as follows:

Table: the interest and reimbursement rates

Year	Annuity	Interest	Reimbursement rate
1	164.722	82.053	82.669
2	164.722	74.613	90.109
3	164.722	66.503	98.219
4	164.722	57.664	107.058
5	164.722	48.028	116.694
6	164.722	37.526	127.196
7	164.722	26.078	138.644
8	164.722	13.602	151.120

4.2 Calculation of cash-flows

The evaluation of cash-flow calculated by the cumulation of net profit and the depreciation is presented in **Appendix 4**. We observe that every year, the self-financing

capacity exceeds the reimbursement rate. The investment is thus profitable, without problems with the full and on time credit payment during the 8-year reimbursement period. The obtained profit and the self-financing capacity express the investment potential to generate financial flows.

The investment potential to generate financial flows is also emphasized by the economic efficiency coefficient, calculated based on the model presented in [STOI 02].

e=Ph/I; where Ph – net profit; I – total investment.

The economic efficiency coefficient, thus calculated, is 10,3% which demonstrates the project profitability.

4.3. The financial analysis of the project

In the process of discounting the values we used a discount rate of 12%.

Benefit/cost ratio (BCR)

$$\text{Benefit/cost ratio} = \frac{\sum_{h=1}^{d+De} V_h \cdot \frac{1}{(1+a)^h}}{\sum_{h=1}^{d+De} (I_h + C_h) \cdot \frac{1}{(1+a)^h}} = \frac{2.956.876}{2.789.529} = 1{,}06 \text{ €}$$

where: Vh – annual sales revenues; Ih – annual investment; Ch – annual operating expenses; d – construction period; De – operative period;

Since the BCR is grater than 1 therefore the revenues cover expenses and also generate profit.

Net present value (VAN)

$$\text{VAN} = \sum_{h=1}^{d+De} V_h \cdot \frac{1}{(1+a)^h} - \sum_{h=1}^{d+De} (I_h + C_h) \cdot \frac{1}{(1+a)^h} = \sum_{h=1}^{d+De} [V_h - (I_h + C_h)] \cdot \frac{1}{(1+a)^h} = 16734€$$

where: Vh – annual sales revenues; Ih – annual investment; Ch – annual operating expenses; d – construction period; De – operative period;

The net present value of € 167.347,00 shows that the project is profitable.

The internal rate of return (IRR)

The IRR has been calculated through trials for different values of cash flows, different discount rates according to **Appendix 5.**

$$IRR = = 0.15 + (0.20 - 0.15) \cdot \frac{84.655}{84.655 + |-13.598|} = 19{,}17\%.$$

Because IRR is situated above the level of discount rates (12%), it is estimated that the expenses shall be recovered and additional profit shall be also obtained. Also, the IRR is higher that the interest rate (9%).

All these elements prove the investment capacity to generate cash flows, which can finance future economic activity.

4.4. The Sensitivity Analysis

Among the elements with decisive influence on the level of efficiency indicators, the most significant is the halls' populating degree. In this sense, the stability of financial analysis indicators has been tested at the alterations for this factor, hypothetically taking into consideration the situation of partial halls' populating (70% - year 1, 80% - year 2, 90% - year 3, 95% - year 4).(**Appendix 6**).

The results obtained in this case are:

Benefit/cost ratio (BCR) = 1,00 € income/spent Euro;

Net present value (VAN) (12%)= 7.475,00€;

The internal rate of return (IRR)=12,2%.

Failure to populate the halls 100%, would produce significant alterations and the internal profitability rate drops to a value near 12%. The net present value remains positive (€ 7.475,00) and the benefit/cost ratio reaches value 1.

These values demonstrate the project high sensitivity to the alterations of entrance data, but since the income was estimated to the minimal value and the expenses to the maximum, this conclusion softens.

CHAPTER V
PROJECT MANAGEMENT

The project management embraces the matrix organizational form due to its advantages, such as:

- both the project manager and the project team are responsible for project results;
- project team members may be used flexibly and the reintegration in the company ABC SA is simple;
- the coordination according to project under-objectives and interests of ABC SA is easily attainable;
- the project team is formed of members who have relations that allow conflict management;

The project members' team list is as follows:

Name	Indicative	Position	Age	Experience
HOLBAN IONICA	P1	PROJECT MANAGER	36	9 years
ANDRONIC NICOLAE	P2	ZOOTECHNICIAN ENGINEER	24	5 years
COSMEANU IONELA	P3	LEGAL ADVISER	29	5 years
NEGRU IULIAN	P4	CONTROLLING SPECIALIST	29	6 years
DOBARLEANU ADRIAN	P5	ECONOMIC ANALYSIS SPECIALIST	23	5 years
UDRESCU MARGARETA	P6	ECONOMIST RESOURCES SPECIALIST	24	5 years
COMANESCU ANCA	P7	ECONOMIC ENGINEER	24	5 years
PARVU IOANA	P8	MARKETING SPECIALIST	28	6 years

The relations between project team members are of subordination to the project manager, also as resulted from the organogram. This aims the removal of the tendency not to take seriously the responsibility of fulfilling tasks imposed by project manager.

5.1 PROJECT PLANNING

Among planning techniques presented in specialty literature, the granulated foddering line installation project management for swine feeding uses the following:

- bar diagrams (GANT);
- key moments diagrams;
- the PERT network;

The bar diagrams consist of a bi-dimensional coordinate system, with a time axis and another for the loads in correlation with a loads' matrix. We draw lines whose length shows planned time span and whose position reflects the beginning and the end of activity respectively. These diagrams are completed by a second bar, which represents the project true progress that is the existing situation. The resulted deviations by comparing realized planning are written at the end of the diagram in supplementary columns **(Appendix 7)**.

The key moments diagram aims submission terms or relation established by the project; submission stages are payment stages with high importance for the project implementer.

Graphically, the terms appear in a table where only key moments showed in GANT and in project diagram thus:

Term	**January 01, 2009**	**November 30, 2009**	**April 30, 2010**	**November 30, 2010**	**December 31, 2010**
Project beginning	X				
Receiving the installations		X			
Installing the			X		

machines					
Realizing financial audit				X	
Final evaluation report drawing					X

Comparing current and predicted achievements is made as such:

Project		**Current stage**		**Date**
No.	Activity/Key point	Planned	Completed	Observations
1	A01			
2	A02			
3	A03			
4	A04			
5	A05			
6	A06			
7	A07			
8	A08			
9	A09			
10	A10			
11	A11			

In the column “planned”, only the prescribed date for activity completion shall be entered, while in the column “completed” only yes or no shall be entered. In case the activity is delayed at the planned moment, the degree of completion and cause of delay shall be entered in the column “observations”. The column “observations” shall also be used in case the activity is carried out according to plan or even ahead of it, to enter occurred events or to signal certain identified risks.

5.2 COMMUNICATION MANAGEMENT WITHIN THE PROJECT

In specialty literature according to [PROJ 04], communication management within the project includes the processes necessary for the collection, dissemination, stocking and final use of project information adequately and at the right time.

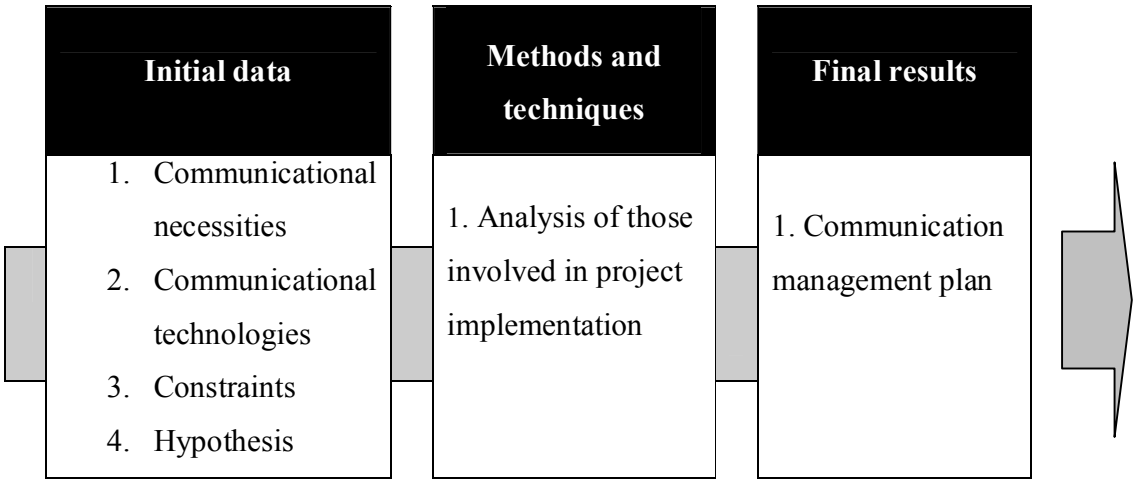
Communication management ensures the basic connection between the persons, ideas and information necessary to achieve success.

Appendix 8 represents a general view over the following major processes:

- Communication planning – establishing the need for information and communication of those involved in project implementation: who needs what information, when is it necessary and the manner in which it is provided;
- Distributing the information – ensuring access to the information on time;
- Performance reports – collecting and disseminating information regarding project implementation. They include project progress reports, progress measurement and predictions regarding future evolution;
- Administrative finishing – generating, collecting and disseminating information that formalize the finishing of a stage or the project;

Communication planning entails the establishment of the need for information and communication of those involved in the project implementation, the moment when they are necessary to them and the manner in which it is provided.

Communication planning is often closely connected to the organizational planning since the project organizational structure has a major impact on the communication necessities connected to it.

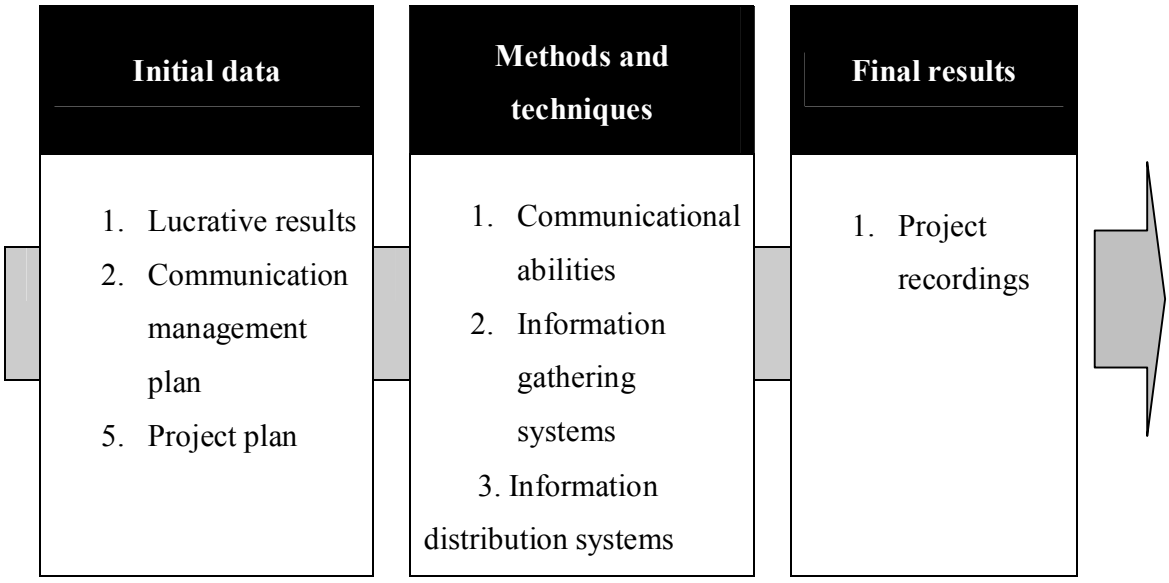


The project manager determines communicational needs within the above project, thus:

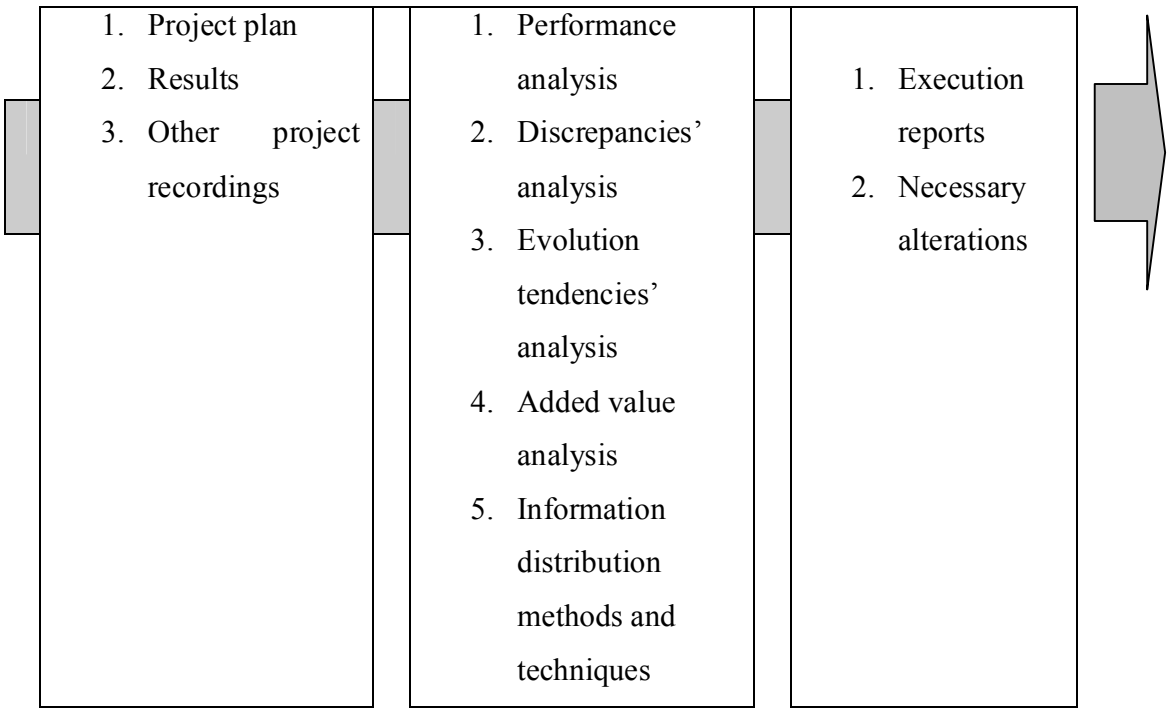
- the project implementation scheme and the responsibilities of those involved in its implementation;
- departments and specializations of those involved in project implementation;
- detailed planning of the number of persons to be involved in the project and their location;
- external information sources (example: communication with the press).

Communicational technologies used to implement the project of installing the granulated foddering line for swine feeding varies from short communications to extended meetings, from simple written documents to temporal planning and on-line password data bases.

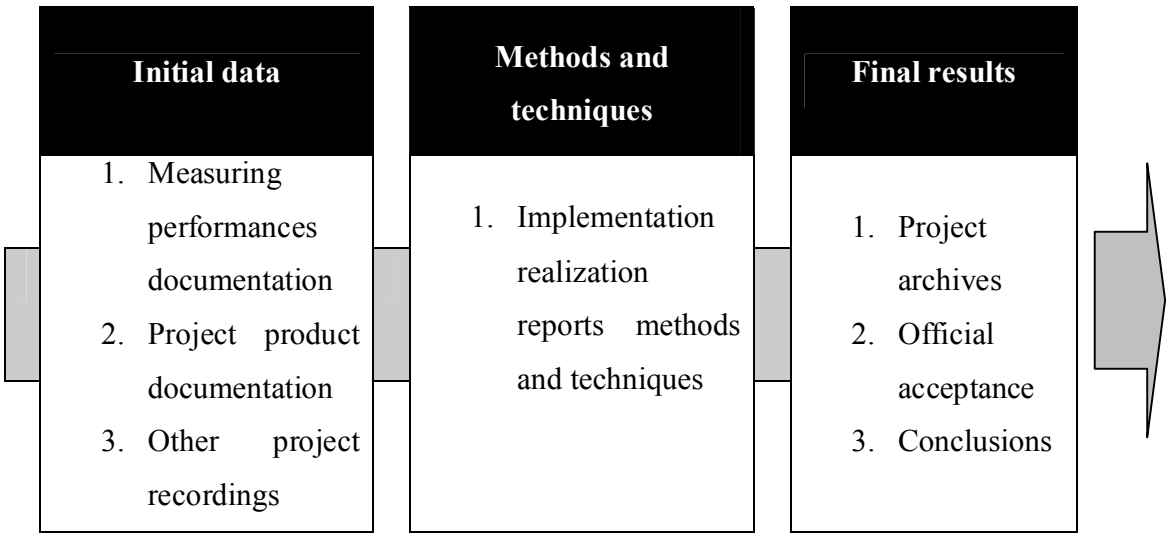
Information distribution to and from project team members refers to the communication management plan, as well as to the manner of approaching the unforeseen informational needs. It is subordinated to the chart below:



. If we drawing the implementation reports shall be done by following:



The administrative project completion consists in verifying and recording project results. It includes gathering project recordings, success analysis and project efficiency, archiving this information and drawing conclusions. This stage is the result of following the scheme below:



CONCLUSIONS AND RECOMMENDATION

i. By used technology, better conditions of swine raising are ensured, the costs per meet kilogram are reduced, waste and specific fodder consumption are reduced by around 10%, up to 95% from the toxins' producing mildew colonies are destroyed.

ii. By realizing the activities produced for project implementation, the attainment of the swine granulated foddering line installation objective is ensured.

iii. By correlating resources with project activities, its implementation within the prescribed 24 month-deadline is possible.

iv. SC ABC SA has the capacity to ensure its own resources that it undertook within the project, as well as the financing credit reimbursement and its interest.

v. Through this investment, SC ABC SA obtained the following results:

- Turnover increase;
- Output increase;
- Number of orders increase;
- Reduction of foddering period;
- Shortening of the delivery period;
- Widening the market;

vii. The project ensures an internal profitability rate of 19,17% which is higher than the interest rate, fact that guarantees investment recovery.

viii. The project economic efficiency of 10,3% proves its viability, its capacity to generate profit.

Appendix 1

THE MAIN INDICATORS OF THE WEIGHT GAIN RATIO FOR PIGS

Specification	The results without project	The results with project
Daily gain of weigth growth in grams	500	650
Weight growth duration per day	160	123
Fodder consumption in kg	448	272
Specific fodder consumption in kg	5,6	3,4
Nutriment cost in lei/kg	3,85	3,13
Total production expenses in lei	5,40	4,15
Cost price per 1 kg weight growth in lei	6,75	5,19

Appendix 3

THE MATRIX OF THE ACTIVITIES AND THE PERSONS

Activities	Period (Month)	P1	P2	P3	P4	P5	P6	P7	P8
A01	1	X							
A02	3	X	X						
A03	2	X	X	X					
A04	4	X	X	X	X				
A05	3	X	X						
A06	3	X	X		X				
A07	5	X	X				X		
A08	2	X		X	X	X		X	
A09	1	X		X					X
A10	5	X		X	X	X		X	
A11	1	X			X		X	X	X

Appendix 4

OPERATING CASH –FLOW WITHOUT PROJECT

Specification	Operating period									
	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Sales	340,538	404,411	459,512	489,891	500,509	505,514	510,569	515,675	525,988	536,508
Operating costs (exclusively depreciation)	191.439	195.267	199.173	203.156	207.219	211.364	215.591	219.903	224.301	228.787
Depreciation	125.808	125.808	125.808	125.808	125.808	125.808	85.900	85.900	46.809	46.809
Interests	82.053	74.613	66.503	57.664	37.221	37.526	26.078	13.600	0	0
Total costs	399.300	395.689	391.484	386.628	370.248	374.698	327.570	319.404	271.110	275.596
Gross result	-58762	8722	68028	103263	130261	130816	182999	196271	254878	260912
Tax on profit	-14691	2181	17007	25816	32565	32704	45750	49068	63720	65228
Net result	-44072	6542	51021	77447	97696	98112	137249	147203	191159	195684
Depreciation	125.808	125.808	125.808	125.808	125.808	125.808	85.900	85.900	46.809	104.946
Cash flow	81737	132350	176829	203255	223504	223920	223149	233103	237968	300630
Repayment rates	82.669	90.108	98.218	107.058	116.693	127.195	138.643	151.121	0	0

Appendix 5

FINACIAL ANALYSIS FOR 10 YEARS OF EXPLOITATION WITH PROJECT *

HALLS' CAPACITY (70% - YEAR 1, 80% - YEAR 2, 90% - YEAR 3, 95% - YEAR 4)

	Specification	Operating period												TOTAL
		2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	
1	Investment :	701,722	658,278											
	1.1.Own founds	281,781	279,097											
	1.2. Loan	419,491	379,181											
2	Operating costs (exclusively depreciation)			191,439	195,267	203,156	207,219	211,364	215,591	219,903	224,301	228,787	223,544	
3	Depreciation			125,808	125,808	125,808	125,808	125,808	125,808	85,900	85,900	46,809	46,809	
4	Interests			82,053	74,613	66,504	57,664	48,029	37,526	26,079	13,601	0	0	
5	Repayment			82,668	90,108	98,218	107,058	116,693	127,195	138,643	151,121	0	0	
6	Production costs			481,968	485,797	493,686	497,749	501,893	506,121	470,524	474,923	275,596	280,172	
8	Sales revenues			500,509	505,514	510,569	515,675	525,988	536,508	547,239	552,711	552,711	552,711	
9	Gross result			18,541	19,717	16,883	17,926	24,095	30,387	76,691	77,785	277,115	272,539	
10	Tax on profit			4,635	4,929	4,221	4,481	6,024	7,597	19,179	19,447	69,279	43,606	
11	Net profit			13,906	14,788	12,662	13,445	18,071	22,790	57,512	58,338	207,836	228,933	
12	Total expenses (with taxes without depreciation) (6+10-3)	701,722	658,278	360,796	364,918	372,099	376,423	382,109	387,909	403,803	408,469	298,065	244,083	
13	Total revenues (with loan)	419,491	379,182	500,509	505,514	510,569	515,675	525,988	536,508	547,239	552,711	552,711	552.711	
14	Cash Flow (13-12)	-281,781	-279,096	139,713	140,596	138,471	139,253	143,879	148,599	143,436	134,423	254,645	308.628	
15	a=12%	0.893	0.797	0.712	0.636	0.567	0.507	0.452	0.404	0.361	0.322	0.287	0.257	
16	NPV (a=12%)	-249,697	-222,494	99,445	89,351	78,572	70,550	65,084	60,017	51,724	46,442	73,204	5,149	167,347
17	Discounted expenses	624,243	524,775	256,807	231,912	211,139	190,707	172,847	156,670	145,615	131,516	85,687	57,610	2,789,529
18	Discounted revenues	374,545	302,281	356,252	321,263	289,711	261,257	237,931	216,687	190,794	177,958	158,891	62,759	2,956,876
19	a=15%	0.870	0.756	0.658	0.572	0.479	0.432	0.376	0.327	0.284	0.247	0.215	0.187	
20	NPV (a=15%)	-243,183	-211,037	91,864	80,386	68,844	60,203	54,089	48,577	40,773	35,654	54,734	3,750	84,655
21	a=20%	0.833	0.694	0.579	0.482	0.402	0.335	0.279	0.233	0.194	0.162	0.135	0.112	
22	NPV (a=20%)	-233,051	-193,817	80,853	67,803	55,648	46,635	40,154	34,559	27,799	23,296	34,272	2,250	-13,598

*According to the methodology approved by EU for the projects with European funds

Appendix 6

ECONOMICAL ANALISIS FOR 10 YEARS OF EXPLOITATION

	Specification	Operative period												TOTAL
		1	2	3	4	5	6	7	8	9	10	11	12	
1	Investment:	701,722	658,278											
	1.1.Own founds	281,781	279,097											
	1.2.Loan	419,491	379,181											
2	Exploitation expenses			191,439	195,267	199,173	203,156	217,765	211,364	215,591	219,903	224,301	228,787	
3	Loan interests			82,053	74,617	66,504	57,664	37,221	37,526	26,079	13,601	0	0	
4	Aother expenses	34,957	32,914	9,572	9,763	9,959	10,158	10,361	10,568	10,780	10,995	11	11,439	
5	**Total expenses**	736,679	691,192	283,064	279,644	275,635	270,978	254,801	259,458	252,449	244,499	235,516	240,226	
6	Incomes			500,509	505,514	510,569	515,675	525,988	536,508	547,239	552,711	552,711	552,711	
7	Residual value												-308,202	
8	Other incomes			75,076	75,827	76,585	77,351	78,898	80,476	82,086	82,907	82,907	82,907	
9	**Total incomes**			575,585	581,341	587,155	593,026	604,887	616,984	629,324	635,617	635,617	327,416	
10	Cash flow	-736,679	-691,192	292,521	301,697	311,520	322,048	350,085	357,527	376,875	391,119	400,102	87,189	
11	a=12%	0.893	0.797	0.712	0.636	0.567	0.507	0.452	0.404	0.361	0.322	0.287	0.257	
12	**Total set to date expenses**	655,455	551,014	201,479	177,719	156,403	137,286	115,259	104,791	91,036	78,722	67,705	61,660	2,398,528
13	**Total set to date incomes**			409,690	369,453	333,167	300,445	273,620	249,190	226,941	204,652	182,725	84,039	2,633,923
14	**VAN (a=12%)**	-655,455	-551,014	208,211	191,734	176,765	163,160	158,361	144,399	122,814	125,930	115,020	22,379	235,394
15	a=15%	0.870	0.756	0.658	0.572	0.479	0.432	0.376	0.327	0.284	0.247	0.215	0.187	
16	**VAN (a=15%)**	-638,356	-522,640	192,338	172,496	154,880	139,231	131,610	116,876	107,131	96,679	85,999	16,296	52,540
17	a=20%	0.833	0.694	0.579	0.482	0.402	0.335	0.279	0.233	0.194	0.162	0.135	0.112	
18	**VAN (a=20%)**	-611,758	-479,995	169,283	145,495	125,193	98,035	97,703	83,149	73,041	63,168	53,849	9,779	-163,240

THE SENZITIVITY ANALYSIS OF EFFICIENCY INDICATORS IN THE SITUATION OF PARTIAL HALLS' CAPACITY (70% - YEAR 1, 80% - YEAR 2, 90% - YEAR 3, 95% - YEAR 4)

	Specification	Durata de exploatare a obiectivului de investiții												TOTAL
		1	2	3	4	5	6	7	8	9	10	11	12	
1	Investment:	701,722	658,278											
	1.1.Own founds	281,781	279,097											
	1.2.Loan	419,491	379,182											
2	Exploitation expenses (exclusively amortization)			191,439	195,267	203,156	207,219	211,364	215,591	219,903	224,301	228,787	233,363	
3	Amortization			125,808	125,808	125,808	125,808	125,808	125,808	85,900	85,900	46,809	46,809	
4	Interests			82,053	74,613	66,504	57,664	48,029	37,526	26,079	13,601			
5	Repayment rates			82,668	90,108	98,218	107,058	116,693	127,195	138,643	151,121			
6	**Anual expenses**			481,968	485,797	493,686	497,749	501,893	506,121	470,524	474,923	275,596	280,172	
7	Residual value												-308,202	
8	Incomes			340,538	404,411	459,512	489,891	525,988	536,508	547,239	552,711	552,711	552,711	
9	**Anual incomes**			350,356	404,411	459,512	489,891	525,988	536,508	547,239	552,711	552,711	244,509	
10	**Gross result**			-131,612	-81,386	-34,174	-7,858	24,095	30,387	76,714	77,788	277,115	-35,663	
11	Tax on profit			-32,903	-20,347	-8,543	-1,964	6,024	7,597	19,179	19,447	69,279	-8,916	
12	Total expenses (exclusively amortization)	701,722	658,278	323,257	339,643	359,335	369,976	382,109	387,909	403,803	408,469	298,065	224,447	
13	**Total incomes (with loan)**	419,491	379,182	350,356	404,411	459,512	489,891	525,988	536,508	547,239	552,711	552,711	244,509	
14	**Cash Flow**	-281,781	-279,097	27,110	64,769	100,178	119,915	143,879	148,599	143,436	144,241	254,645	20,062	
15	a=12%	0.893	0.797	0.712	0.636	0.567	0.507	0.452	0.404	0.361	0.322	0.287	0.257	
16	**VAN (a=12%)**	-249,697	-222,494	19,289	41,162	56,844	60,752	65,084	60,017	51,724	46,442	73,204	5,149	7,476
17	**Set to date expenses**	624,243	524,775	230,088	215,849	203,896	187,441	172,847	156,670	145,615	131,516	85,687	57,610	2,736,238
18	**Set to date incomes**	374,545	302,281	249,377	257,011	260,740	248,194	237,931	216,687	197,340	177,958	158,891	62,759	2,743,713
19	a=15%	0.870	0.756	0.658	0.572	0.497	0.432	0.376	0.327	0.284	0.247	0.215	0.187	
20	**VAN (a=15%)**	-243,183	-211,037	17,818	37,032	49,806	51,853	54,089	48,577	40,773	35,654	54,734	3,750	-60,144