natural price. The market would only start to move if additional large foreign suppliers wanted to penetrate the domestic market. However, under the conditions of a globalized world market, this possibility has already been taken into account. But then often not more supply and demand regulate the price.

Sales market research involves gaining all information about potential customers and their needs, regardless of whether they are won on schedule or incidentally. Especially the unplanned information should be recorded in a structured way.

4.2.4. Customer Relations (3)

Starting from the recognition that it is often costly to recruit a new customer, the customer once gained should be motivated to buy more frequently and thus turned into repeat customers. Maintaining relationships with regular customers and potential key accounts is an important task in this context. This requires gathering information about this group of people, especially from previous purchases. But every other customer loyalty is desired. Even if companies can bring much about their customers experience today, so there will still be no close relationship between them and the seller, which goes beyond the granting of comps.

For an ERP system, the distinction must first be organized into customer groups. At least between regular customers (according to frequency of the purchases). Large customers (by sales volume) and other customers. Threshold

values can be formulated for this, e.g. Number of purchases or sales in the last 12 months. For the Customer Relations function, the goods and customer master data can then be linked with previous sales, thus creating an automatic demand profile for important customers. (Arrow 38) It must be possible to do a comparison of sales and cost of goods delivered, thus the gross profit from the business with such customers can be quickly retrieved. With such an automatic system, important customers can be reported to sellers automatically.

If special costs are incurred with regard to the importance of the customer, this should also be registered. This could also be the working hours of salespeople who care for the important customers particularly intensively. This could be technically organized by introducing a fourth data field for the allocation of costs in addition to the account, cost center and cost unit. This could also be used several times, e.g. for an inventory number, at application for machines for the customer number for special customer or project number for spontaneous reports when there are no cost center is to be established. With this information, exaggerations can be prevented. The company wants to make a lot of money with important customers; Too intensive care and excessive discounts may jeopardize this goal. The customer relations function must receive the necessary balance.

4.2.5. incoming inquiries (4)

Advertising has invited the masses of potential customers to find out more. In sales, it is important to convince these interested parties of their own products and win them over as customers. In order to check advertising success, the number of inquiries received should be recorded in order to be able to identify temporal relationships with advertising in the longer term. From a concrete inquiry also not expressly mentioned interests and needs of the prospective customers should be recognized. These can be recorded in customer master data.

Requests received from potential customers should be stored and evaluated, even if they did not come to an order. You can tell from them what articles they need and you can try to get orders from them in the future. With the goods master data, the wishes of the (potential) customer in particular with the assignment of an article no. translated into the language of your own company. Next is searched for a previous relationship and a customer no. assigned or a new customer master created. (Arrow 39) For this, a license plate as a prospective customer in contrast to customers already supplied would make sense. If there are no orders after a long time, this customer no. also be deleted again. The customers that meet these criteria could be reported by the software.

4.3. procurement

4.3.1. Construction (5)

The technical design of a product implements the specifications of the product policy, and is actually a function in the organization of a customer benefit. In terms of color, this rectangle was assigned to production. However, this also defines which repetition factors must be included in the product and procured. Likewise, the required potential factors must be procured. The design was assigned to procurement in this outline for practical reasons. Other classifications would also be possible.

To realize a benefit for the customers, concrete products are planned. In particular, it is noted from which number of which materials the product is built and how much work must be used for this. These BOMs link the article numbers of the goods master data with those of the material master data. (Arrow 4) The technical documentation should be archived under the article number. For technical reasons, it would make sense for the BOM administration to have an independent system next to the article numbers; However, a partial agreement between the article number in the goods master data and the parts list number would make sense.

The design is very busy before a market launch of the product. It is still not a one-time process. Every product should be checked for improvement on a regular basis. The parts lists must be updated if other parts are to be used, e.g.

to use the same materials in different products and then be able to shop more flexibly.

4.3.2. Material master data (6)

This data is the mirror image of the product master data from the sales. They are the same. The price here, however, is a standard cost rate recorded as the average purchase price. The actual purchase prices can fluctuate and be different for different suppliers. The procurement market must be monitored and the standard cost rates adjusted if necessary. Services can also be defined as material type. Storage is not possible here. For the definition as material type or input article, it is also not of central importance whether the input article is needed directly for the products or indirectly for the company. Also, the purchase of regularly required physical goods and services for general areas of the company can be better controlled by the registration as a kind of material.

In the material master data, you should be able to define with which suppliers (Vendor No.) this material can be procured. On the other hand, pricing is not very useful here because they can change frequently and the update would cause a lot of work. However, the master data allow evaluations regarding materials of great importance, for which the current prices can then be obtained at regular intervals. Here, the change to another supplier could make sense, while in a small volume of the cost of the conversion to another supplier of the savings would not be justified. Those would be the prices of other providers

but arguments for price negotiations. Then price comparison files can also make sense here.

A price comparison file could be created for each data record from the fields "date", "vendor", "own material no.", "Material no. Vendor, unit of measure, price and comment. In the comments it could be noted that e.g. a price only applies from a minimum quantity. Sorting by vendor would allow you to update your data. The sorting according to the own material no. would perform the price comparison.

4.3.3. Supplier master data (7)

The vendor master records contact data from current and potential suppliers. In procurement market research, supplier no. and input article no. linked (arrow 5). For orientation, it would make sense to use a label for the industry and the supplier's offer. The supplier number is also the vendor no. for the personal account in accounting. If it is only a potential supplier for whom contact data and prices have already been entered, there is still no vendor account in accounting.

In the context of the supplier base, comment fields should also be provided for evaluations. Here positive and negative experiences can be deposited. If the quality of the material should be commented, a link to the article no. getting produced. Nevertheless, the connection to the supplier base makes sense, because a quality assessment is formed in comparison to other suppliers. If the quality of a material was badly rated by all manufacturers, the design (5) would

have to look for an alternative. The material would then not be bad overall, it just would not have the necessary properties.

4.3.4. Procurement Market Research (8)

In procurement market research, information about possible sources of supply is collected on a mirror image basis for sales market research in a systematic and random manner. In addition to supplier no. and input article no. Data about prices, quality and possible quantities are stored. In the first stage, however, one does not want to contact the potential suppliers.

In order to move away from categorizing randomized information on how to proceed according to plan, it is first necessary to define the amount of information that one wishes to learn. In addition, it is necessary to record the suppliers who work in the catchment area. It then searches for sources from which to populate the data. Finally, one would define the distances in which the procurement market research should be updated. This does not preclude that randomly obtained information is recorded at any time. For each information you should also record the date and source.

In the inquiry file the under the supplier no. stored contact data and the under the input article no. stored descriptions of the material linked (arrow 6). The evaluation of a price comparison file or the collection of assessments of individual suppliers is therefore also part of the procurement market research.

4.3.5. outgoing request (9)

From the data of the procurement market research individual potential suppliers can be selected, with which concrete supply relations are to be initiated. (Arrow 9) It should be noted with which suppliers one asked when for which products. If you have refusals or no answers, you do not need to ask again. Inquiries can be sent in writing, by e-mail, by phone or orally. For telephone and oral inquiries, a note should be created, which can be saved in a file. Each record should have an identification number to which an inbound quote (the supplier in its reply and its own offer file) may refer. This file should also contain notes on the written and electronic inquiries. There should still be a flag for the reason of the request and the external circumstances, e.g. only in general the file should be updated, or whether concrete negotiations were conducted. This file delimits the procurement market research file. Suppliers whose products are considered unsuitable are normally not requested.

4.3.6. incoming offer (10)

Requests requested as well as unsolicited offers can be confirmed with supplier no. and input article no. be recorded. (Arrow 7)

The records from the request file that receive qualified responses are copied to a quote file and marked accordingly in the request file. In the offer file the own article numbers are compared with the article numbers of the suppliers. At the time of the request, they usually could not be known. When ordering, the item

no. immediately be used by the supplier. Unsolicited offers can also be included in this file, but the own request no. must remain open.

The collection of unsolicited offers and responses to inquiries can also be a guide to future purchases. One knows the sources of supply and the price level. For offers in response to a request, the data of outgoing requests is completed. If complex catalogs and price lists have been sent especially for unsolicited offers, only the existence of the information with the date of receipt will be noted. If necessary, if e.g. If you want to create an offer comparison for different articles, this data can be evaluated purposefully. In case of a response, the offer no. saved to the request. (Arrow 10)

4.3.7. outgoing order (11)

Orders are placed based on current or past offers. If delivered later, you should check the adherence to the appointment. For this, a file with assigned jobs must exist, which is differentiated from completed and still running jobs. All orders, whether on the basis of a received offer or from existing supply relationships, are here recorded with quantity, price and the announced delivery dates. In doing so, it must be recorded whether the appointment was bindingly committed or estimated to be non-binding. For this, the supplier then usually sends an order confirmation with which a legally binding contract is concluded. If delivery dates are exceeded, inquire.

In Fig. 23 on page 86, the color of the rectangles was differentiated between purchasing and procurement. Existing supplier relationships do not always include offers. (Arrow 8) The prices are valid until the supplier informs about a price change. Therefore, skilled labor can be saved on such regular purchases. Experienced shoppers engage in procurement market research and bargaining with buyers, while regular purchases are made by less skilled workers or increasingly even by software.

The outbound request file is the basis for collecting responses. If a supplier does not answer, it can be concluded that he does not offer the articles or has no interest. Incoming offers from which, if necessary, an order is placed after negotiations are transferred as a record in the order file and the order no. deposited with the request. (Arrow 11) The issued orders are provided as expected deliveries. (Arrow 12) Most of the time in the order file, the answer to the later questions is what? (Account) where? (Cost center) and if necessary for what? (Insurance provider) are deposited. After transferring the data set to the accounting department, this information no longer has to be requested.

4.3.8. received delivery (12)

When purchasing, it has to be distinguished whether goods and services have been purchased for consumption in current production, for the general area or whether investment goods for use in production or in the general area. With the delivery a given order is done. In a less narrow definition, the tasks of inquiry, offer and order are also assigned to purchasing. It is checked here

whether the delivery is complete and whether the goods are in the contracted condition or damaged. In the case of services, it should be noted whether the task has been completed, how long work has been done, and which spare parts were installed during a repair. These findings are necessary to check the supplier's invoice. The data from the fulfilled orders and the orders placed for them are forwarded for the examination of the supplier's invoice. (Arrow 13)

Discovered errors and deviations between ordered and delivered quantity are noted in the file. The purchaser can then contact the supplier.

The purchases for the production must reach the place of consumption. This can be done by the supplier delivering directly to the place of consumption or by organizing this transport internally. It is also possible that the goods must be collected from the seller. For several different consumption types, intermediate storage in a material store is common. In inbound logistics, it must be known when and which transport must be carried out and which goods are to be stored where.

Goods for the general area can be picked up by the consignees upon receipt of the goods.

In the file of the issued orders, the incoming deliveries are marked and from the data records a file of the fulfilled orders is created. This also happens, the delivery was not faultless. The errors can be noted in both files. Upon receipt of the invoices, the payment can then be temporarily stopped.

4.3.9. Received invoice / outgoing payment (13 + 14)

From the incoming invoices an invoice receipt file with the supplier number, amount and due date is created. Thus, the fulfilled orders for the examination of the factual correctness are adjusted. The supplier invoice is factually correct, if the goods were delivered and was faultless, and if quantity and price match the order. The amounts and amounts are to be booked accordingly, ie to be factually assigned. The questions are what? (Account) where? (Cost center) and if necessary for what? (Payers) to answer. If the assignment is possible at an early stage, this data can already have been deposited when the order was placed.

Purchased goods and services are invoiced by the suppliers if they have not been paid immediately. The due date of the invoices must be recorded and the timely payment must be organized. Checked invoices must be transferred in the invoice file with the due dates to a file from which the payments are made. (Arrow 14)

Outgoing bank transfers can be generated automatically in Electronic Banking from the transfer file. Outgoing cash payments are mostly spontaneous purchases and there are no orders placed. The data that is read from the order file during invoice verification must still be recorded as far as necessary.

Incoming invoices and outgoing payments are the central work contents of the people still working in Accounting 2.0. However, this work is increasingly being dropped. he contents of the incoming invoices and in most cases also the

resulting bookings are known from the file of fulfilled orders. Only the invoice receipt file must be created, in which a consecutive invoice number is assigned. It is still the due date for the organization of payments to note. If the check is not complete, individual data fields must be added.

It would be useful to have a text file with the history of the transaction and the respective document numbers with the date (requirement message, inquiry, quotation, order, delivery, invoice, payment), the accounts used in the accounting department and, if necessary, with deposited comments under the invoice number with one or two leading letters to create and under the same name to create a graphic file with the bill. Also the other documents of the history could be digitized under their document number in the same way. This would not only fulfill the retention requirements; for a test e.g. For the release of the payment all information would be available immediately.

4.4. production

4.4.1. Types of added value

Production is to be understood not only as industrial production, but generally as the company's output. It can also be a combination of manufacturing, trade and service. This is another reason why it is hardly possible to develop universally valid concepts for production. More generally, it is about making the creation of operational performance more efficient and effective. This is measured by the measure of productivity.

It can be mentioned the following, most important groups of different value added:

Industry and crafts

The production in the industry and in the craft consists in the production of material products. In industrial production one can distinguish between serial production and one-off production. The series production mainly produces for an anonymous market. The customers decide on existing products and are not in a position to communicate their own wishes to the producer and to have them considered in the design of the products.

Here are the stations construction, work preparation, material procurement and manufacturing process arranged one behind the other. Only material procurement and production are partially juxtaposed. Series production can be differentiated into small and large series. The larger the series, the smaller the relative share of design and work preparation. An increase in mass production would be mass production.

By contrast, these stages largely overlap in the single-item production. Prior to placing the order, there is a plan in which a large part of the design takes place in order to negotiate prices with the customer. This results in part of the work preparation, which is the basis of planning a delivery date. The individual production requires negotiations between client and contractor. The product is tailored to the needs of the client. This is not contradicted by the fact that the contractor may have already produced a variety of similar products for other

clients and he can fall back in particular in the design on a fund of plans, which are then adapted only to the specifics of the contract.

With a high level of automation, the industry has a high share of fixed costs from depreciation and interest. At a low level of automation, e.g. In the craft, the fixed costs come from the personnel employment. In craftsmanship, the labor input is the central element of pricing. For very high quality products, variable material costs and sometimes variable energy costs can play a role.

Wholesale and Foreign Trade

The production of the trade exists in particular in the logistics achievement as a link between producers and consumers. In the case of imports and exports, a greater distance is overcome and customs formalities are possibly completed - but this task could also be taken over by the transporter as a service.

Wholesaling may also include warehousing if the wholesaler intends to guarantee the availability of specialty products (such as books or pharmacies). If a customer wants a specific drug or book, the retailer can check the availability at the wholesale site via the Internet and obtain it from the wholesaler's daily delivery service. The retailers will then save their own storage costs and for wholesalers it would be acceptable for many affiliated retailers to stock a wide assortment.

In the wholesale cost structure, the high variable costs of goods sold are noticeable. Noticeable fixed costs arise when the wholesaler takes over warehousing for the retail trade and offers a flexible delivery service.

retail trade

The stationary retail sector needs sales rooms in which the goods are offered to customers, and sales personnel. This causes considerable fixed costs. Most retail stores rely on bulk business with a manageable number of popular items. A deep assortment, in which the customers find also unusual products, could be organized only with high prices. However, this is counteracted by intense competition in retail, even if there are individual high-priced shops for customers with unusual wishes.

The sales function is very short in retail. The customers come to the shop and pay for the goods immediately. Negotiations are not taking place. With the presentation of the goods all important information about the product must be conveyed.

agencies

Unlike retailers, who buy and sell goods on their own account, agencies act only as intermediaries. In doing so, they act outward like retailers or wholesalers. The most important example is the petrol station tenants, who sell the petrol in the name and on behalf of the oil companies and receive a commission for it. In doing so, they are obliged to comply with the price specifications of the company.

transport industry

In the transport business, a distinction must be made between the freight forwarder and the carrier. Freight forwarders organize goods transports and use them as a subcontractor for the physical execution of the carriers. Under

normal circumstances, the freight forwarder also rents containers for the customer, which if necessary can also be transported combined on ships, trains and trucks. Of course, a freight forwarder can also have their own vehicles and then be carriers at the same time. Through this division of goods transport organization, each subcontractor specializes in very specific tasks and receives only small shares from the freight rate.

The forwarder therefore has high variable costs because he uses the subcontractors only for the specific orders. The carriers have high fixed costs for the maintenance of the means of transport and the drivers.

service

The production in the industry and in the craft consists in the production of material products. Service companies produce intangible assets. They differ, inter alia. by the fact that there can be no stocks of finished goods at service providers. A service can therefore not be produced for an anonymous market and sold through the trade. Standardized services can be provided, but the customer must contact the service provider directly. Very different services can be provided, so that no general statements can be made about the business and its cost structure.

Rental

The production of a landlord consists in the allocation of a space use. They are often made for this purpose. The buyer of a property secures itself very long-term, while the tenant is flexible within the notice periods. Providing this flexibility is formally a service, but it is not really services provided by people.

Not only real estate but also movable property can be rented. Leasing is to be separated from leasing, in which the lessee is bound by the contracts on a long-term basis and, as a result, an investment is financed here.

The cost structure of landlords is almost exclusively characterized by fixed costs, mainly depreciation and interest.

hotel and gastronomy

The services of restaurants were long attributed to retail. But because the experience is increasingly the focus of the restaurant service and less the delivery of specific food and drinks, the assignment to the service sector is more useful. Likewise, the renting of rooms with hotels is only a part of the achievement, which must take care of the experience value as in the catering trade. In both branches very similar products are produced, even if the nature of their production is different. Both branches are characterized by high fixed costs.

Financial Services

Financial services are mainly provided by banks and insurance companies. Here are mainly three product groups can be called:

financial transactions

This is about the maintenance of bank accounts, cash supply, processing of card payments and the like.

Cash investments and loans

Supply and demand of chapters need to meet. If the providers themselves do not enter into a contractual relationship with the buyers and do not want to assume the associated risks, banks will be involved as intermediaries. They guarantee repayment to investors and take on the risks for which they receive compensation.

risk coverage

The institutionalized assumption of risks and their balancing over the mass of the customers is the core business of the insurance companies. However, some insurance companies have at least partially the character of an investment. On the other hand, banks also sell derivatives derivatives.

In this book, industrial production is used as a template. Nevertheless, the functions outside this section 4.4 are largely transferable to the other types of value added.

4.4.2. Place of consumption (15)

Consumption can be made from a direct delivery or a withdrawal from stock. In trade, the resale to the customer is considered consumption of the purchased goods. Services are always bought directly. Withdrawals for the production of goods can be specifically recorded or calculated retrograde with bills of material from the output. The result of the production over a period of time may be finished or unfinished products. Bills are unnecessary in the trade,

because each sold product was previously purchased and it was not changed afterwards.

Incoming delivery can be provided for immediate consumption in production. Then it can be recorded in the warehouse system as access and simultaneous exit. Then it would be ensured that all material inputs were also recorded as warehouse receipts. There still has to be physically organized a transfer to the place of consumption. (Arrow 15)

The physical transfer to the place of consumption is a logistics task, which is why the rectangle in Fig. 23 on page 86 has been marked accordingly. The place of consumption is the place where the work is done using the material. This can be a construction site, but also a just-in-time delivery for an industrial production. In a restaurant, the place of consumption would be the kitchen, in retail the rule in the salesrooms.

When passing to the place of consumption, the cost center is defined by this location. It only has to be recorded. In most cases, the cost bearer for whom work is being done at this place can also be determined. This collection would also take place at the latest with the passing on.

4.4.3. Material store (16)

Purchases that are directly related to the company's performance and that are not consumed immediately or resold are temporarily stored. (Arrow 16) The

storage is associated with administrative costs for entry and removal and for the day-to-day operation of the warehouse. In this task, up-to-date data on the size of the stocks and on the turnover frequency must be generated.

The warehouse must be organized so that the stored material can be recovered quickly. There are different systematics and software solutions. In Fig. 24 on page 87 this was noted in the ERP system with "inventories" and the letter "C". The inventory should be recognizable from files. In Fig. 23 on page 66, the material store was therefore marked in color as a logistics task.

4.4.4. Removal (17)

When unloading from the material store (arrow 17), data collection in addition to the quantity according to the pattern "what? Where? for what? perform. "What?" Is the article no. covered. This involves updating the current inventory and controlling the optimal order quantities and times. "Where?" Specifies the area of responsibility in which the material is used and "for what?" The manufactured product or the completed order. Withdrawals can not be registered individually. For low value goods, bureaucratization should be avoided. Recording this material on cost objects would only be based on the target consumption according to the parts lists from the design.

In Fig. 23 on page 86 the removal was assigned in color to the production as a task. In the trade with the replenishment of shelves a removal from the stock

exists. This is usually preceded by a transport from a central warehouse in the store.

Also in-house and in production plants with the removal would be the internal transport to the place of consumption - pick up or bring - to clarify. (Arrow 18)

4.4.5. Demand Report (18)

A message has to be generated that stocks must be replenished. These reports should be able to be calculated flexibly taking into account the orders already issued. A requirement message from the current production process always refers to articles that are constantly procured. A header from the request and quotation can usually be waived and ordered from the previous supplier at the previous conditions. (Arrow 20) Here, Fig. 23 on page 86 shows the complexity of this process, which, in addition to the current stocks and the current consumption, must also take into account the future consumption due to orders already received. At the same time, to reduce costs, it is not necessary to undertake adequately large procurement transactions. In the figure, the requirement message with the color of the rectangle of the procurement was assigned as a task. These are routines that can also be automated.

Nevertheless, it can be concluded from the frequency of the requirement notifications whether a search for alternative sources of supply makes sense for cost reduction. Then, exceptionally, the whole sequence of purchasing activities would be triggered.

4.4.6. Production (19)

The material used at the place of consumption enters the product. (Arrow 21) In production, the combination of the factors of production capital and labor takes place to a new commodity. This does not just have to be a physical production in industry or craft. Trade also creates value with its mediation between the producer and the buyer. The production can also consist in a service. Capital distinguishes between potential factors that are slow to wear off and repetitive factors that are constantly being replaced.

For the organization of the operational achievement there are the most different industry solutions. In Fig. 24 on page 87, the production in the graphic of the ERP system was designated with the letter "B".

4.4.7. Disposal (20)

Mostly waste also arises from production. (Arrow 22) For their disposal service providers can be commissioned, which are found through the procurement process. (Arrow 20) Separation of hazardous waste and compliance with environmental requirements must be ensured. This function would also require recycling of waste or recovery as a waste product.

In a world where environmental awareness is on the rise, companies must also view environmental protection as a factor for success. The violation of

environmental regulations threatens not only fines, but also a loss of reputation. Waste recycling avoids disposal costs, avoiding waste also saves material and energy and thus reduces costs.

In Fig. 23 on page 86, disposal was marked with the color of the rectangle as a logistics task. The task is more complex. In an environmental controlling, an inventory of environmental pollution is to be made, then ideas for the reduction must be developed and their implementation monitored.

4.4.8. Warehouse (21)

Finished goods are first stored and kept ready for sale (arrow 23), unless they are individually made for this customer on his order and then shipped immediately. The inventory must be constantly kept up-to-date with stock information and the next additions from ongoing production in order to be able to provide accurate information on customer inquiries about deliverability.

The goods master data (1) are also used by the warehouse. The article no. The goods constitute a classification criterion. Another is the storage locations. Here, as with the material warehouse, it must be possible to read which goods can be found at which location. The goods master data can be found next to Art. and designation specifications, e.g. to the temperature, humidity or other conditions. (Arrow 35)

4.4.9. Work in progress (22) and its completion (23)

Part of the production can be unfinished. (Arrow 24) Work in progress is already consuming resources. They are therefore output of the current and input of the next period. Only the finished products are available for sale. A central task of the valuation of work in progress is to compare the costs of manufacturing and distributing the products, as well as the proportionate administrative costs to the sales and thus to assess the different profitability of the different products. The measurement and evaluation of unfinished products is fraught with difficulties, because not only their number but also the degree of completion should be determined. Here is to look for suitable simplifications.

The products can also be produced in several stages, whereby initially individual parts are built and assembled at the end. In other cases, there is always something "in the pipeline". There are no unfinished products in the trade. For services, work in progress may be in the pipeline.

In the case of multi-level production, the unfinished products are listed in the material master data under their own article no. detected. At the same time, they are also defined as a product to be produced. For this, a bill of materials is also created, from which parts they consist. This means that the unfinished products are in production planning, but the quantity produced is included in the material stock and not in the inventory. A double definition is possible if these parts are sold at the same time as spare parts to customers.

In order to record the products "in the pipeline", the difference method can be used between inventory delays (see W. Müller, Cost Accounting, Norderstedt 2012, pp. 142 ff.). The direct costs (material and work) are determined directly and at the same time derived retrogradely from the output. If then the damaged products are deducted, the difference between input and output can only be explained by fluctuations in work in progress. This method can be applied automatically.

Work in progress, apart from construction of buildings or ships, will normally be completed in the next period. (Arrow 25) After completion of the previously unfinished products, these are also available for sale. (Arrow 26) In the case of a multi-stage, final assembly, the chain from arrow 24 to 26 replaces the arrow 23. In cases of "pipeline", this chain is a variation variable, the smaller the longer the accounting period lasts.

4.5. Work and machines

4.5.1. Division of workers (24)

In addition to the use of materials, labor is also used for the company's performance. The worker flows into the production and should be recorded in quantity. (Arrow 27) The manpower can be counted among the potential factors because the recruitment took place a long time before and the workers also had to be trained or trained. Thereafter, the company has a time-limited amount of manpower of certain qualifications available.

The labor force can be either individual or overhead. The classification does not depend on the quality. Working hours paid directly by customers (for example, for repairs) are direct costs. The same applies if the product is paid, but there is a direct relationship between the labor input and the quantity produced, e.g. for factory deliveries. In both case groups a recording of the labor input is to be organized by cost unit. In other cases, you will classify labor as overheads and record them only by cost center.

In times of minimum wages, increasing work density and cost pressure, but also in the overhead costs better cost control is desired. The job descriptions of the employees list the tasks that have to be fulfilled here. It should be recorded, how much time a task requires and how often it is incurred. A good documentation offers starting points to check a more effective organization of the processes or an automation and thus also to save personnel costs.

4.5.2. Employee Master Data (25)

The master data contain beside a personnel no. and other data, in particular the hourly rate at which the work is evaluated. The master data also contains the necessary payroll data that is transferred. (Arrow 29) The employee master data will be supplemented by data on the hours worked.

The employee master data must be treated confidentially. Only the part of the data needed for the division of work and the payslips may be accessible at all. For the division of the work it must be known which tasks the worker in

question can fulfill with his qualifications and experience and for what he is well suited. Often a simple database helps as feedback from the work results. With these observations, it can be seen which employee can do which tasks better than his colleagues - in other tasks colleagues may be better. If these data are determined and constantly updated, gaps can also be identified for which qualification measures should be planned. But they are not part of the ongoing processes.

4.5.3. Payroll (26)

The production factor of work is evaluated by wages. The hourly rate can be multiplied by the working hours used and what the personnel costs result. (Arrow 28) Staffing in value added as well as overhead costs is recorded, evaluated and recorded as the basis for payroll accounting. Here, the salary and deductions for taxes and social security are calculated and later disbursed. These processes take place in the personnel administration.

4.5.4. Personnel planning (27)

The utilization of the personnel is an important basis for the personnel planning. (Arrow 31) Employee master data are also used for this purpose. (Arrow 32)

Personnel planning is primarily understood as quantitative planning, while qualitative planning is defined as personnel development. Personnel planning is a system of individual plans that consolidates into personnel requirements

planning. Staffing requirements can be read mainly as summarization from resource planning, if more frequent bottlenecks are detected or it is noticeable that some of the employees are underutilized.

In addition to the quantitative, there is also the qualitative personnel planning, which is also referred to as personnel development. Its core is education and training. However, special training (eg training on new technologies) should be used very purposefully to fill in gaps between target and actual competence, e.g. but not just found in the staff assessment to close.

On the other hand, general training (for example, preparation for the master's examination) tends to strengthen the motivation of employees who want to earn the employer's support in making career moves with above-average performance.

4.5.5. Division of Machines (28)

"Machine" is far to define here. In a restaurant, the layout of the cooking plates in the kitchen would be appropriate, even if it is not longer-term, but must be planned very spontaneously.

Analogous to the working time potential [(division of workers (24)], the available machine working time must also be planned and allocated to the products The procedure corresponds to arrow 27. (arrow 33) The classification of the machines shows their utilization and information Time-critical orders

are given priority if capacities are available shortly thereafter.There should be as continuous a capacity utilization as possible.Neither capacity bottlenecks nor overcapacities are in the interests of the companies. This goal must be supported by the information systems.

4.5.6. Machine master data (29)

The machines also have master data that includes capacity, energy consumption and other attributable costs. The machine master data is intended to achieve the most cost-effective machine utilization possible. (Arrow 34)

For the effective use of operational resources, it has to be determined which machines are suitable for the production of which products and how effective and efficient they are. In order to do this, it has to be observed over time and then also recorded, whether and how much the output of a product on different machines fluctuates, as well as whether and how much the input differs. From this rankings and relative distances to the next best machine occupancy can be calculated. The division according to the size of the distances leads to the highest efficiency.

4.6. Sales and invoicing

A sale in the strict sense is the immediate delivery of the goods to the customer, often against immediate payment. Here is the sales record and issue the

customer an invoice or receipt. The sales function in the broader sense also includes the stages of inquiry, offer, order and delivery.

In Fig. 23 on page 86 a distinction is made between the color marking of the rectangles in sales and sales. As with procurement, acquiring new customers and servicing key accounts requires more attention, while routine order processing is easier to automate and requires less skilled labor. In Fig. 24 on page 87, however, both tasks are assigned to the sales module, which is identified by the letter "F". This module supports sales and sales alike.

4.6.1. Customer master data (30)

Similar to the vendor master data (7), the customer master data is also recorded. This includes every address, under which interest was registered for their own products. The goods and customer master data are linked to the initiation of sales. (Arrows 36 + 37)

Customer master data can not be entered in anonymous markets. For stores, the chain is very short. The customer comes into the business, decides, pays the goods and takes them with them. Thus, the entrepreneur can recognize any regular customers, they do not ask for their wishes and they do not inform about new offers. The communication between supplier and buyer takes place via price tags and information about the product characteristics. In addition, the provider can inform unilaterally with his advertising.

4.6.2. incoming inquiries (4)

The incoming requests from potential customers have already been addressed in the context of marketing in response to the promotional activities. But they are also a starting point for the sale. The customers are interested, but do not immediately place an order. In the ERP system, an offer is prepared after a request has been received. For this purpose, customer requirements that are often not formulated concretely need to be assigned to the goods master data. At the same time, the potential customer is created in the customer base as an address, but here marked as an interested party (= potential customer).

Even if there is no order, there are important findings with requests received. It is now known which products the potential customer needs and more can be learned about him. He can later - without bothering him - continue to be informed about current prices or new products. Alternatively, it could also turn out that this prospective customer is not considered as a customer. This would then be noted in the customer master data and also in the future to waste no working hours for him.

4.6.3. outgoing offer (31)

In the specific offers to specific interested parties - regardless of whether collected or unsolicited offers - the interests and needs of interested parties should be addressed. Even from the care of regular customers can come a request, which was then but compared to the seller often verbally formulated

in conversation. (Arrow 40) The sales should make a note about this. In addition to text modules (individual or standardized for customer groups or periods), product names, brief descriptions and prices are taken from the goods master data. Different prices can be formulated for different customer groups. The affiliation to the respective customer group results from the customer master data. (Arrow 41) For offers as replies to inquiries, the data is taken from the recorded customer requests. (Arrow 42)

Outgoing offers are the basis for negotiations with customers. It can be expected that some of the products offered will be taken out later and / or other products added later. There will be several versions of an offer that should be available later. Internal versions that the customer has not received can be deleted. Simulated scenarios of the order to be kept are marked as an internal version of the offer.

4.6.4. incoming order (32)

In Fig. 23 on page 86, this function, as well as the following, is assigned to the paragraph by the color of the rectangles, that is to say a rather executable and automatable function.

Orders may be made on the basis of an inquiry and offer, or from an existing business relationship based on previous offers or catalogs and price lists. For larger quantities or special materials, a purchase can be triggered via a requirement message (arrow 20). In the case of spontaneous orders, goods and

customer master data must be assigned if they were not named by the customer. (Arrow 43) For orders from accepted offers, the data of the offer are under a new order no. to copy. (Arrow 44)

The final version of the offer, which is agreed upon with the customer, represents the content of the purchase contract concluded with the customer. If it is fulfilled later, a contract document or an order confirmation with the contract content and the completion date should be created here. This is especially true for a spontaneously incoming order. Here, the customer needs an assumption because there were no previous discussions.

4.6.5. Goods delivery (33)

With the delivery of goods, the order received is executed. As proof, the customer will be provided with a delivery note, on the copy of which he confirms the receipt or notifies quantity deviations or damage. The data from the order will be sent under a delivery note no. copied into the data of the delivery. (Arrow 45) The products produced are assigned to the order and deducted from the inventory of the items concerned. (Arrow 46)

This function includes the outbound logistics from the finished product warehouse to the customer. In this case, a good planning to avoid unnecessary transport and thus costs. It is also necessary to confirm that the customer has received the goods, e.g. by acknowledging the receipt on a delivery note. A delivery in this logic is also the pickup by the customer.

4.6.6. outgoing bill (34)

The data of the delivery is transferred to the billing for billing the order. (Arrow 47) After delivery, the customer will be issued with an invoice with a due date for payment. The data comes from order and delivery. For documentation in the event of complaints, cross-references to inquiries, quotations, orders and deliveries should be saved with the respective document numbers. For this purpose, a separate text document can be created, in which all editing comments should be included.

When selling for cash, the bill is usually created only in short form. The following function (incoming payment) will be canceled. With the short form of the invoice, the customer receives proof that he has bought the goods in this shop. This may be important in the complaint of defective items.

4.6.7. incoming payment (35)

If the services are not paid immediately, they must be settled with data from the sale. The receipt of payment is to be checked and the customers may be reminded. (Arrow 48) When the payment is received, the invoice is marked as cleared and the transaction is completed. The bank document forms the last cross-reference to the invoice.

In Fig. 23 on page 86, these and the previous function have been defined by the color marking of the rectangles as accounting tasks. However, these are

largely automatable functions, so that this definition is more likely to be justified historically.

4.7. Investment and general items

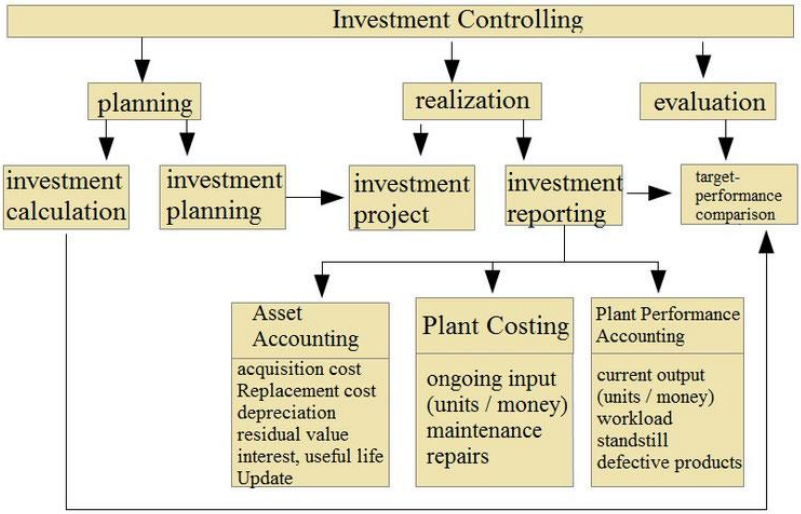
4.7.1. Investment (36)

The procurement of repeat factors is not directly incorporated in the value added. Because about 80% of the future costs are determined by the investment, a careful decision and selection with the help of the investment calculation is very important. An investment controlling to create a better database for optimizing investment decisions is recommended. With replacement investments and expansion investments, the future, in which an investment should have an impact, can be derived relatively reliably from the past. In rationalization investments, where new technologies are often to be used, this is less the case. Nevertheless, you will not want to give up experience in these decision situations. Even in accounting 2.0, the asset reporting serves as a database for this purpose.

From the machine master data the age and the condition of the machines can be read. (Arrow 50) These data provide an assessment of the need for expansion or replacement investment. In this function, investment controlling should also collect data on the condition of equipment, probable replacement costs, and on their ongoing costs and services. Procurement market research should also gather up-to-date information for capital goods. (Arrow 51) When

deciding on an investment, the supply chain (request => offer => order) is triggered. (Arrow 52) The chain would be completed with the delivery of the capital goods and their start-up. (Arrow 53)

Fig. 29: Investment controlling



(Source: https://mueller-consulting.jimdo.com/ research/building-site/technology/)

In Accounting 3.0, asset accounting can thus be expanded into a complex investment controlling that would not be feasible with the 1494 technology. In Fig. 23 on page 86 investment activity has been described as having the color of the rectangle as an organizational task.

4.7.2. Depreciation (37)

The ongoing wear and tear must be recorded as depreciation. On the one hand, a periodization of the acquisition costs should take place for the accounting. On the other hand, substance conservation is to be organized via the sales process, which is why the current replacement costs are a more appropriate basis here. The estimation of the remaining useful life may also change in the last third of the useful life estimated at acquisition due to new findings. Depreciation can also be based on investment controlling.

Capital goods wear off through use, which must be recorded through depreciation. (Arrow 54) A depreciation plan simulates the depreciation for the future useful life. Tax depreciation may deviate from your own assessment. After about two thirds of the scheduled useful life, a reassessment of the remaining useful life makes sense. Depreciation is included in the cost of goods sold. (Arrow 55)

In Fig. 23 on page 86 depreciation has been described as having the color of the rectangle as an accounting task. In Fig. 24 on page 87 these and the previous task were assigned to the module "Investment and Financing" with the letter "J". been assigned. Here, investment controlling (see Fig. 29 on page 131) is extended to include an overview of longer-term financing, which is also "worn down" by current repayments.

4.7.3. Overhead costs (38)

The consumption of resources is not limited to the value added stages in the narrower sense. There is also a general area that is not directly related to value creation, but still consumes resources. The goods required here are also procured in purchasing. These general area costs are called overheads. With the identification as overhead, the relevant cost center is defined. A cost unit assignment is normally not possible. (Arrow 56) Only in exceptional cases can one imagine that typical overhead costs can be attributed to individual orders. More often, there are typical direct costs that are not recorded individually for reasons of efficiency. Then one speaks of unreal overhead costs. However, technical progress now allows more frequent data acquisition.

A differentiated outsourcing of the cost centers in the overhead cost area can be useful to allocate the costs to the processes running there. There may be products that more or less use these processes. If some costs arise for only a limited number of products, then they must also be covered from the sales of these products. If this were not possible, the task of the corresponding products and the reduction of the costs could make sense. Even outside such extreme situations, austerity measures in overheads are popular measures to improve profitability. Accurate documentation of costs incurred in the overhead cost centers and the tasks they perform may streamline the discussion and promote continuous improvement in profitability, often more effectively than spectacular austerity programs that are often only intended to reassure investors.

4.7.4. Personnel Administration (39)

The personnel administration fulfills a task in the creation of value through the coordination of the production factor work. Here payroll is performed and the updating of the processes, e.g. due to changes in legislation. (Arrow 57) The personnel administration also maintains the employee master data. (Arrow 58) For leave and sick leave, a representation is organized in the personnel administration, so that the operational functions are not seriously disturbed. The coordination of personnel planning is carried out here, even if the influencing factors come from the value added process.

The personnel administration function is closely linked to the other functions of the HR department, which are located in the frame of Fig. 23 on page 86. However, human resource management is linked to the ongoing functions of the value-added process so that it is already mentioned here.

4.8. Customer benefits and staff

In addition to the functions attributable to the value added, there are tasks which can be assigned to the framework, which with the combination of capital (finance) and work (personnel) as well as the dispositive factor (organization and communication) organize and sell a benefit for the customers. Some of the framework functions relating to the benefit for the customer are already starting before the value added process. The functions discussed here are not directly linked to the functions already discussed in Sections 4.2 to 4.7.

In the task of coordinating the factors of production, capital and labor, to create added value, this section first considers the factor labor. These include tasks to ensure the effectiveness of the work.

4.8.1. Research and Development (40 + 41)

Research is the search for insights that do not immediately lead to a new or improved product or a new or improved process. Product development and process optimization build on this. These functions already include the search for ideas. Therefore, structures should be created in which employees can present their suggestions for improvement in an uncomplicated way. Also suggestions made by customers should be passed on by the sellers. Subsequently, these ideas would be evaluated by technicians and the results recorded. Even negative reviews could be picked up on later ideas.

The development of new or improved existing products should offer the customers a new or better benefit, so that the company can earn more money with new sales. But only the construction with the preparation of the individual work steps leads to a networking with the functions of the value creation process. Research Development, on the other hand, can be the buyer of data and services of the other agencies.

Nevertheless, research and development do not take place without any connection to value creation. The research subjects are influenced by the

market research (2) and the marketing policy (0). Priority existing products are modernized and gaps are closed in the offer. Also, the necessary investment in a market launch should be limited. Research and development projects that could be produced with the existing equipment are more likely to be approved. To check this, the machine master data (29) must be used.

Without research and development, there is a latent risk of being surprised by innovations from the competition. With outdated products you would not be able to survive in the competition then.

4.8.2. Process optimization (42)

With new or better methods, the quality can be increased or the costs can be reduced. This is not about improving the products. In the procedures, employee suggestions can often be very helpful. Technical and organizational improvements can be differentiated.

Technical improvements are often based on new technologies being offered on the market. Most of the companies are waiting for experiences of other entrepreneurs. During this time, the providers advertise and inform very intensively and the companies can form an opinion. If they wait and then decide to introduce a new technology, the implementation must go very fast to catch up with the competition. Now you have to know very well which organizational changes will follow from the technical improvement.

Of course it is possible that small technical improvements are also developed by our own experts. But often you improve organizational processes. However, organizational improvements should only be made in coordination with the organizational structure (63). It has to be taken into account that changes can have a sequential effect on other processes elsewhere, which also have to be regulated.

4.8.3. Logistics (43)

Logistics is particularly important in the procurement and delivery of goods. Therefore, it can not be clearly assigned to a function group. A separate fleet of vehicles would serve not only trucks but also cars from salesmen and executives. Here, however, it would also be necessary to coordinate orders with carriers on the road, rail, water and in the air.

Own vehicles are worthwhile only if they are also used appropriately or if the type of activity requires a high degree of flexibility of transport. The size of the vehicles must be appropriate. Logistics planning requires an overview of the regular shipments and their dates. The task is to carry out the transports at the right time on the one hand, but also to bundle them on the other hand so as not to undertake unnecessary journeys with semi-empty vehicles and, if possible, to have no empty trips on a return journey.

If you decide against your own vehicles, you must have a good overview of the range of transport services. It should be established in advance contacts

with carriers, which can be commissioned at short notice. If they receive more orders, they will also give priority to the entrepreneur. This avoids the risk that urgent transports could not be carried out in the short term. But it must also be dispensed with short-term price advantages. This does not preclude a market observation, with the result of which then price negotiations are conducted and in the longer term also new contacts can be established.

4.8.4. internal service and company building (44 + 45)

In-house services for which auxiliary cost centers are usually set up in cost accounting can be complex. They represent overheads (38).

In trade and in many services, especially hotels and restaurants, the condition of -the premises is part of the customer's benefit. In the manufacturing industry, it is a basis of the ongoing processes. If janitors today are referred to as a "facility manager", e.g. the waste disposal to be a management task. For rental companies, this area is more important. Auxiliary cost centers are often set up for the company buildings. Then all costs including personnel would be converted to the area used and redistributed to other cost centers after the use of space. In this case, weighting factors can be used, with which the intensity of the roughness is taken into account. This would e.g. Storage rooms have to bear a significantly lower proportion of the cost of space than e.g. Office space.

Also in the building services should there be a cost control and clear responsibilities. Some small repairs could also do a home improvement and a

job to a craftsman would be almost as time-consuming, as if they themselves would be carried out. So it makes sense to name someone for janitorial tasks, but they can also have a different function. In addition to minor repairs, this area of responsibility would include winter maintenance, consideration of waste schedules, care of the front garden and control of the heating system. For cleaning buildings, however, most mini-jobbers are employed or a cleaning company is commissioned. But the facility manager would take care of the quality control.

It is also important to deal with safety issues such as fire safety or hazardous substances (such as asbestos). The regulations issued to make mostly sense, but cause trouble and cost for many companies. Specialist companies use their knowledge advantages to sell expensive luxury refurbishments as an alternative. As with legal issues, a person is needed who can read the problem and then have a say.

However, there are also other service units whose costs can be distributed by reference quantities to other organizational units. The procedure would be comparable to the company building. Differences in settlement can be that the benchmarks can also fluctuate and then be billed monthly. Multi-level structures can also exist if service units themselves receive services. There are various billing techniques for this.

4.8.5. Education and training (46)

Employees must be able to provide the required service not only quantitatively but also qualitatively. For this they must be trained or at least trained. Management needs to gain an overview of the knowledge and skills required for operations and the level of training of its employees. This means that a suitable person can be found quickly even in future requirements. Possible gaps should be closed by training. The foreseeable retirement of older employees is to be addressed by the training of young people.

The level of knowledge of the employees could be available in a file in Human Resources (39). The necessary knowledge should be recorded in an organizational manual in the process organization (63). They must be requested when creating in the departments and updated about once a year. This documentation of the organizational processes also helps with the adaptation of the processes as part of process optimization (42) in other organizational units.

On-the-job training can also be anticipatory in order to prepare for expected future requirements at an early stage.

4.8.6. Recruitment (47)

Greater qualitative or quantitative gaps are closed with recruitment. For this purpose, employees are hired who have already acquired the required

qualifications elsewhere. A prerequisite for recruiting is that there is a need that can not be covered by education and training.

A cost-benefit analysis is needed to decide whether to recruit personnel. The benefit of a worker is the profit on the orders that could not be done without this worker, minus the costs of recruiting and training. For workers in the overheads sector, determining the benefits is not easy. If staff can be recruited from the competition and bring along knowledge that does not exist in their own company, the benefits would be very great. In other cases, education and training in your own company is usually cheaper, because good practice must be offered for the recruitment, which may not be offered to one's own employees.

Other costs of recruitment are the material costs for advertising and personnel costs for personnel selection. There is also a training period in which the new employee is not yet very productive, but already gets the full wage. In order to make the right decisions, information about these factors needs to be collected.

4.8.7. Leadership (48)

The effectiveness of the work should also be promoted with motivation, leadership styles and leadership techniques. This is where the limits to psychology are reached. An observation in a system of numbers is not possible. One can only observe the results of the company and assume that the personnel management has an influence on it. The thought follows u.a. Responsibility

reporting as reporting by areas of responsibility. Similarly, one can observe productivity ratios. But there are never any monocausal explanations for good or bad results.

A measurement of good or bad leadership needs to include further observations. This also includes feedback from employees, but they should not be overstated. A laissez-faire style could produce good employee ratings, but the measurable performance would suffer. Even if one finds further measurable quantities and can form a mosaic out of many individual parts and can evaluate the leadership behavior, no optimization is achieved. A good atmosphere in a team that promotes successful work is not only influenced by the leaders, but by the personality of the simple employees. Sometimes there is a good mix of equal and dissimilar characters that complement each other harmoniously, while in other teams of a different composition conflicts are more likely to be encouraged. Even an accounting 3.0 is overwhelmed here.

4.8.8. Social (49)

The effectiveness of the work can be disturbed if the performance of the employee is affected by personal problems. It might make sense in individual cases to support the employee with reasonable effort in overcoming such problems and thus to eliminate the disruption of the effectiveness. The amount of the expense or the repayment of a salary advance would be visible in the bookkeeping.

If the employees have a reasonable expectation that the employer would help them in an emergency situation, this will create loyalty. The inhibition threshold for insincerity and a bad work ethic increases. Social responsibility can therefore be seen as an investment in this loyalty. As with an intangible investment, an attempt can be made to measure the cost of this social responsibility and to assess the value of loyalty. Here, too, an appropriate level of care should be sought. Excessive generosity creates habituation effects and no longer promotes the solidarity of employees with the company.

4.8.9. Internal communication (50)

Meaningful communication channels between employees as well as between supervisors and employees also serve the effectiveness of work performance. They, too, evade observation in the context of the system presented here and a valuation in monetary units. However, the contents of the EPR system may be subject to internal communication.

For this formal communication, a determination must be made as to which information should be accessible to which employee. The necessary and helpful information should be accessible in principle. Confidential information should in principle be blocked unless it is necessary for the task being performed. It is further to distinguish between visible and sent information that is created for the addressee. This can be done with monthly reports. Many companies are also moving to store such reports on an intranet, where they can be viewed after completion. Because not every evaluation should be accessible

to every employee, this communication requires a sophisticated system of authorization codes.

Informal communication can hardly be influenced by the company. One can only try to prevent with the necessary openness of the formation of rumors.

4.9. Finance, organization and communication

The use of capital as a factor of production first converts money capital and physical capital by buying capital goods and consumer goods. This takes place in the value creation process. The functions on the frame are mainly used to model the value creation process. For this purpose, monetary units are used as a general equivalent, making different goods comparable. ("Since all other commodities are only special equivalents of money, and money their universal equivalent, they behave as special commodities to money as commodities." Karl Marx, Das Kapital, Vol. 1, Hamburg, 1867, quoted from the Institute for Marxism Leninism at the Central Committee of the SED [ed.], Marx-Engels-Werke, vol. 23, Berlin / GDR 1962, p. 104). Although Fig. 23 on page 86 does not show intensive networking of the finance area with the functions in the value chain, it is already a general equivalent because of the ubiquitous valuation in monetary units.

In the part "organization and communication" of the framework is predominantly the dispositive factor of the enterprise management settled. It

relies on data in the value creation process and rather creates presets instead of data.

4.9.1. Cost accounting and data acquisition (51 + 52)

Traditional accounting is initially a data collection point. Meanwhile, this task has been largely automated. This task is therefore increasingly decentralized fulfilled by the data collected at the place of their creation and transmitted via an interface in the accounting software. There remains a coordination task and a collection of the remaining data, which have not been entered elsewhere.

The benefits for the customers can only be offered in the long term if the returns are greater than the costs. This condition applies to every single product. In individual cases, cross-subsidies can be justified. The evaluation of the costs of each individual service and the comparison with the revenues are the central tasks of the accounting system from the point of view of customer benefit.

According to the management approach, according to which the bookkeeping should follow the view of the company management, the accounting with the data collection should actually be settled in the internal accounting.

4.9.2. Controlling and Planning (53 + 54)

Cost accounting and controlling are assigned to internal accounting. While the cost accounting object-oriented, the payers (= products) has in view, the

controlling wants to orient a target control. The formulation of goals and the observation of their implementation is specified within the hierarchy according to tasks (= persons) and within the financial year by periods (= months). Controlling is therefore predominantly period-oriented, even if in concrete applications (for example investment controlling) objects instead of task areas can be the subject of consideration.

With the approach of capturing data in quantity and monetary units for the past and the future, part of the planning task is opened up for a machine settlement. There are still different expectations for future volume development and price development. The then mechanically created plans must still be checked by people for their plausibility. It is also human decisions as to whether the projected data of the future is also intended, or whether the probable development should be intervened. This is especially true when early warning systems are developed that are intended to alert in time to undesirable developments.

4.9.3. Financing and Taxes (55 + 56)

The task of the financing is to keep the goods-money cycle out of the company's added value. Financial planning is required in order to be able to use financial instruments in a targeted manner. Funding by feel and estimated size would require greater liquidity reserves and, hence, financing. On the basis of financial planning, financial instruments are used to cover financial requirements and to meaningfully invest financial surpluses. The company

must also have an overview of the current financings, their terms and the rates to be paid. Bookkeeping 3.0 keeps this data available - assuming that the user has access authorization.

Companies are subject to different taxes. The fulfillment of various tax obligations must be organized. These include the filing of tax returns and tax returns as well as proof of the amounts entered there from accounts and receipts. It is also possible to arrange tax audits in which accountability is required.

The filing of tax returns can be automated today. Tax returns require a prepared annual statement. The data to be entered in the tax forms can be calculated automatically according to the model of previous years. At a minimum, a list generator (see section 3.4.5.) Could be set up accordingly. However, it should always be checked whether the tax forms have changed and perhaps asked for additional information, or whether a tax-relevant issue has re-emerged in the company.

4.9.4. Financial Reporting and Investor Relations (57 + 58)

Bookkeeping companies have to draw up annual financial statements and publish them if necessary. The figures reported there must be able to be proven from the bookkeeping of accounts and supporting documents. For listed companies there are further information obligations to the stock exchange supervisory authority.

The addition of accounts to balance sheet and P & L items has long been a completely automated task. Currently it's about checking the correct rating of all items and updating them. For this, checklists should be created and processed.

Significant shareholders and lenders, in addition to the data subject to disclosure, want more information about the company and its economic situation. Here, the information available to the management must be summarized and passed on regularly or on request. It is always selected which data should not be forwarded. Therefore, a balance sheet analysis must be performed in this function. It must be recognized, which conclusions in investor can draw from the communicated data. If possible negative conclusions are recognized early, one can mitigate these reactions in accompanying explanations.

4.9.5. Public Relations (59)

A company that has a bad reputation will find it hard enough to find customers. That's why it makes sense to look for a good reputation with public relations and not only to promote the products. There may also be exceptions. Who e.g. As a telecom company, it is primarily for fraudulent providers that it has to be publicly identified with these dubious businesses.

Henry Ford is credited with the sentence: "Half of my ad spend is thrown out. I just do not know which half. "In public relations activities, there are always

many ideas on how money can be spent. Since it is not expected that they will have a direct impact on business development anyway, it is almost impossible to control performance. The quota of thrown out money can therefore be well above the estimated by Henry Ford 50%.

In addition to the inclusion of image promoting content on the corporate website and the delivery of press releases to newspaper editors occasionally events (events) are carried out, which can be perceived by the public as a positive. This could be open days or the celebration of a company anniversary, which should then be perceived positively by the public. Positive effects are also expected, e.g. a sports club is supported (sponsoring). How big such effects can be and whether costs and benefits are appropriate is a matter of individual case.

Public relations directed at the general public must be distinguished from lobby work, which aims to establish contact with politicians and influence political decisions. An important company, with good links to local politics, can sometimes achieve that e.g. a development plan is adapted to the needs of the company. In federal politics, a comparable influence is often exercised through associations. So far can go so far that an association makes the relevant employees of a ministry for a legislative procedure formulation suggestions, which are then also in the bill of the government.

4.9.6. Legal issues (60)

Only larger companies have their own legal department with at least one permanent lawyer. You do not have to be a full-time lawyer and you can also represent a company in court, unless you are a lawyer. This includes a distinction between lawyers who work alongside their law firm and conclude blanket service contracts. They then advise or represent the companies without having to settle these activities separately.

Even if smaller companies do not choose either option, the availability of current laws and the ability to identify and read legal questions are important. It is now possible to download a wealth of legal texts and other legislation from the internet or to view it online. It is recommended to update the texts stored in a library on your own computer and available offline at the latest every 3 years. For legal issues, someone should be responsible for making an initial assessment and, if necessary, seeking help in a targeted manner.

4.9.7. Philosophy (61)

The values and objectives pursued in addition to the business profit making should be formulated in particular as a guideline for the employees. They then provide an orientation as to when, in individual cases, the company's economic interests may also be acted upon. The corporate philosophy is essentially influenced by ethical ideas of leadership. For a successful company, it is easier for intangibles than economic problems for a company. Apart from this

realization, the bookkeeping can contribute nothing to the corporate philosophy.

4.9.8. Structure and process organization (62 + 63)

The organizational structure determines the hierarchical structure of the company. Here the following terms must be distinguished:

Task:	A recurrent part of the operational performance.
Job:	A set of tasks that a person (job holder) should complete.
Cost center:	A sum of tasks to be assigned to the same function in the operational service creation. A position holder can be assigned to different cost centers.
Department:	A group of bodies that form a common organizational unit.

The organizational structure is also mapped in Reponsibility Reporting. It can follow the principle of action (distinction according to the type of activity) or the object principle. The object principle can in turn be based on products or sales areas. When the object and the principle of performance are combined, we speak of a matrix organization. This means that a department manager has two supervisors. The responsibilities must be clearly defined. Possible competitions, e.g. which products should be primarily produced in the event of bottlenecks require clear patterns of behavior.

The documentation of work processes is the basis for rationalization measures, which is why the participation of the employees concerned is usually limited. They also want the freedom to organize their work in a meaningful way. If health and safety requirements or quality requirements are to be met, specifications will be accepted sooner. If the cooperation of colleagues is needed and the scope is kept within limits, the small service route is often chosen - past the hierarchy. Often there is an asymmetrical distribution of information: the boss knows the least!

A formal process organization is necessary if someone relies to a considerable extent on the work of other agencies and this can no longer be organized informally. Content of such regulations is: Who delivers what by the latest when!

Therefore, there can not be a comprehensive process organization for entire companies. Rather, processes are organized, and the more complex they are, the more important it is to have a good organization of processes. However, it is recommended to document the documented processes in an organizational handbook in the form of a loose-leaf collection, which in the meantime can also be digitally structured.

If the company management wants to counteract the asymmetrical distribution of information, an overview of the most important processes can be created from the job descriptions with the tasks fixed there (if necessary, they would have to be prepared). This should then be followed by division of labor (from whom comes what, to whom goes what?). Possibly. this has to be asked of the

employees. The result can be recorded in an organization manual. It is not an end in itself, but serves as a basis for recognizing rationalization potentials.

4.9.9. EDP and archiving (64 + 65)

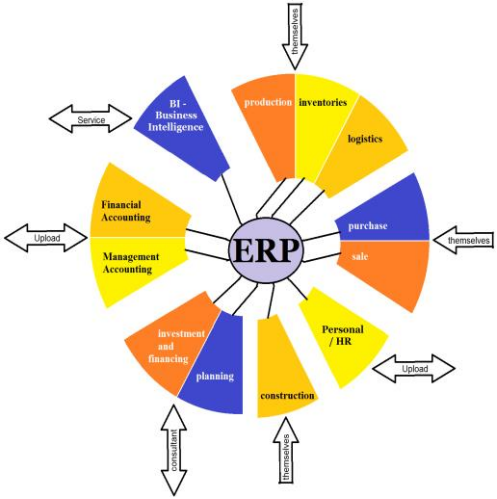
Electronic data processing is actually a tool and not a function. However, it has now become independent and in large companies are usually maintained their own departments to keep this tool operational. Even small and medium-sized companies have to face these tasks.

Archiving offers many opportunities through digitization. The former storage in paper form had to observe storage regulations and to maintain a system according to which the document can be found again using a combination of document type and document number. With digital archiving, document type and no. with one or two initial letters and a subsequent digit sequence of the file. The latter can begin with the final digit of the year. Scanned original documents in graphic format (.jpg) and associated processing notes can be saved under the same name in text format (.txt).

The digitization can already be done with the opening of the post office. The former mail distribution could be replaced by a message that mail stored under certain document numbers has been received and is to be processed by these employees. The original mail or other documents should be kept for some time. For outgoing mail, the file itself can be generated by the author. In order to

safeguard the retention obligations, it is also necessary to organize the archiving of incoming and outgoing e-mails.

5. ERP for small enterprises



5.1. concept

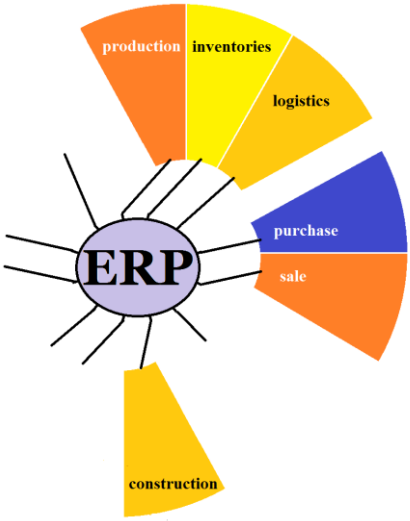
In the ERP systems of large companies, most internal and external accounting data is generated from the operational processes by data transfer. That should also be possible for small businesses. On the cover of this chapter, fig. 24 on page 87 has been pulled apart to symbolize ERP in small businesses without breaking the links. The capital letters behind the functions in Fig. 23 on page 86 identify software solutions which can cover this task, e.g. as modules in an ERP software:

A = Business Intelligence	B = Production	C = inventories
D = logistics	E = purchasing	F = sales
G = Personnel / HR	H = Construction	I = Planning
J = investment and financing	K = controlling	L = accounting

There are 4 groups of modules:

1) Production, Supplies, Logistics, Construction, Purchasing and Sales:
They form the core of the operative activity and must be firmly anchored in the company. The modules production, logistics and design have to be very much geared to the industry and the specific functions, while the stocks, purchasing and sales modules in the various industries are very similar. The parts of the ERP systems to be controlled by the small businesses are thus:

Fig. 30: ERP in small companies (internal)



(Source: own illustration)

2) Accounting, Controlling and HR / HR:

They are standardizable. If the large companies get the data to be processed here from the group 1 of the modules by data transmission, then these data can be uploaded also over the Internet to another computer. There, the data can be processed in client-capable programs. The evaluations to be created would be returned to the client in the same way. With automatically calculated key figures, the management can be offered an aid to quickly recognize improvements and deteriorations in individual points.

3) Planning, investment and financing

The operational and strategic success and financial planning can be automated in technical terms. But there should be a coach, especially for the management of small companies, who asks the right questions in this process. The right answers can then only be given out of the company. But it would not answer a question that is not asked. Therefore, the involvement of consultants in the planning process would be highly recommended.

The same applies to large investment decisions. The computing technique for preparation can be automated, and the formulas can be easily applied using spreadsheets and free templates from the Internet (e.g., from https: // mueller-consulting.jimdo.com/finanzen/investition/investitionsentscheidung/).

However, because of the long-term effects, the clarification of the facts is of central importance. Again, the right questions must be asked, which must be answered in the company.

The banks advise on financing decisions. However, they mainly want to sell their products. That's why companies also have to worry about independent information.

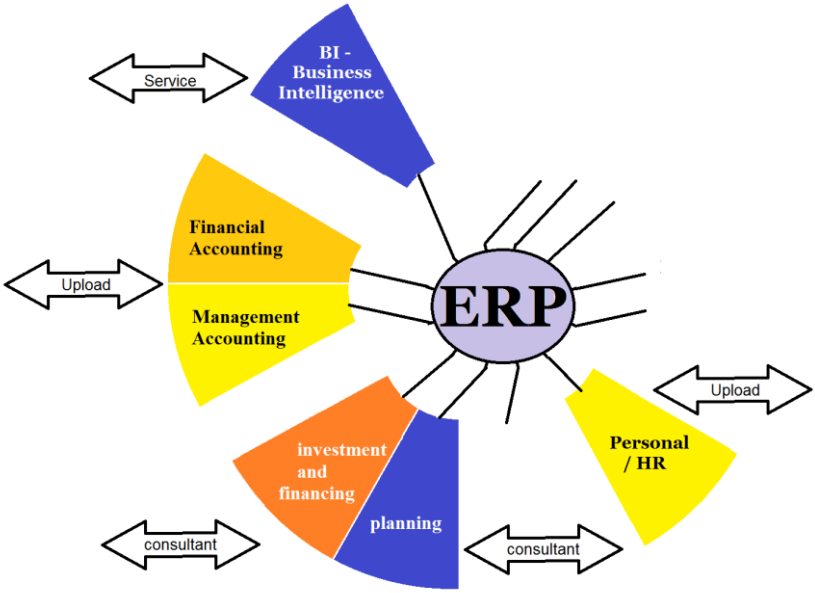
4) Business Intelligence

Business Intelligence (BI) basically describes a set of methods for obtaining business-relevant data. First use in the management found IT systems already in the 1960-ies in the form of management information systems (MIS). Small companies need the support of experts who can professionally and

mechanically evaluate the data generated in modules B to L. The provider of such services could also take care of the entire information technology.

The externally covered parts of the ERP system of small businesses are thus:

Fig. 31: ERP in small businesses (external)



(Source: own illustration)

In Fig. 10 on page 59, the triangular logic of posting records was addressed. In section 3.6. The mathematical derivation of cash flows from the accounting data, from which balance sheets and profit and loss accounts are prepared, was dealt with. Data collection by small businesses will be closer to cash flows.

The development of a small business concept should therefore examine whether the reverse approach can be used to derive data for the profit and loss account from cash flow and balance sheet data.

5.2. evaluations

It has already been formulated as the goal that monthly data of a balance sheet, income statement and cash flow statement, as well as a simple cost and activity accounting with cost type accounting (especially with the entry of imputed costs), cost center accounting (for cost control) and cost unit accounting (for the Price and product policy) should be generated. It must first be checked which contents are specifically required for this.

5.2.1. balance sheet

In Section 266 of the German Commercial Code (HGB), the content of the balance sheet for Germany is defined as a sample structure for large corporations. For medium and small corporations a reduced scope applies. For private companies there is no legally prescribed structure. Nevertheless, they are expected to be able to answer questions about content from the Deep Subdivision. Under the system of 1494 a distinction is made between the asset side with the representation of the assets and the liability side with the representation of the capital. The rough classification for small chapter companies has the following scope:

Fig. 32: Balance sheet according to § 266 HGB

	Assets		**Equity and Liabilities**
A.	fixed assets	A.	equity
B.	current assets	B.	provisions
C.	prepaid expenses	C.	liabilities
D.	deferred tax assets	D.	deferred income
E.	difference from asset allocation	E.	deferred tax liabilities

(Source: own illustration)

The positions C to E of the asset side and D and E of the liability side are not further broken down; only one of the deferred items is required (including discount according to § 250 (3) HGB). These positions do not arise from the current business activity but from valuations during the financial statement. Deferred items can also be updated during the course of the year. For example, for the preparation of monthly and quarterly financial statements. Provided that the relevant facts are identified, an automatic booking is also possible. On the other hand, taking account of deferred taxes during the year makes little sense, because the taxes are annual amounts. One would fictitiously assume a monthly tax assessment.

The complete version of the fixed assets has the following scope:

Fig. 33: Fixed assets in accordance with § 266 (2) HGB

A. fixed assets

I. intangible assets

1. self-created industrial property rights and similar rights and values
2. licenses acquired for a consideration, industrial property rights and similar rights and assets as well as licenses to such rights; and values
3. goodwill
4. advance payments

II. property, plant and equipment

1. land, land rights and buildings including buildings on strange land
2. technical equipment and machinery
3. other equipment, fixtures and fittings
4. advance payments and assets under construction

III. Investments

1. shares in affiliated companies
2. loans to affiliated companies
3. shares in other companies
4. loans to companies with which shares are held
5. securities of fixed assets
6. other loans

(Source: own illustration)

The complete version of the current assets has the following scope:

Fig. 34: Current assets pursuant to § 266 (2) HGB

B. current assets

I. supplies
1. Raw materials and supplies
2. work in progress
3. finished products and goods
4. advance payments

II. Receivables and other assets
1. Trade receivables
2. receivables against affiliated companies
3. receivables against companies with participating interest
4. other assets

III. Securities
1. shares in affiliated companies
2. other securities

IV. Cash on hand, Central Bank balances, credit balances with banks and checks

In the case of receivables (II), the note "thereof with a remaining term of more than one year" must be made.

(Source: own illustration)

The complete version of the debt capital has the following scope:

Fig. 35: Liabilities according to § 266 (3) HGB

B. Provisions

1. Provisions for pensions and similar liabilities
2. Tax provisions
3. other provisions

C. Liabilities

1. bonds
   of which convertible
2. liabilities to banks
3. advance payments received on orders
4. trade payables
5. liabilities arising from the acceptance of commercial bills and the issuance of own bills
6. liabilities to affiliated companies
7. liabilities to companies with participating interest
8. other liabilities
   thereof taxes
   thereof in the context of social security

For all liabilities (C) are in addition the notes

- of which with a residual maturity of up to one year
- thereof with a remaining term of more than one year

under the position.

(Source: own illustration)

Provisions are insecure liabilities that have been calculated by themselves.

The small businesses must align their data collection to the extent relevant to them. Irrelevant positions can be omitted. Bonds can not exist in small businesses. Affiliated companies and participations exist only if the operational functions were split over several companies. Commercial are only common in international trade.

The full version of the equity capital has the following scope:

Fig. 36: Equity pursuant to § 266 (3) HGB

A. Equity

I. drawn capital
less pending deposits
less own shares

II. capital reserve

III. retained earnings

1. legal reserve
2. reserve for shares in a ruling company involved
3. statutory reserves
4. other reserves

IV. profit carried forward / loss carried forward

V. net profit or loss

(Source: own illustration)

It should be clearly separated between deposits and retained profits. In the case of private companies, the equity is allocated to the persons. Again, there is the separation between deposit and retained profits.

5.2.2. Income statement

The full version of the profit and loss account according to the total cost method has the following scope:

Fig. 37: Profit and loss account according to § 275 Abs. 2 HGB

1. Sales
2. increase or decrease of stock of finished and unfinished products
3. other own work capitalized
4. other operating income
5. material expenditure
   a) expenses for raw materials and supplies and for related goods
   b) expenses for purchased services
6. personnel expenses
   a) wages and salaries
   b) social charges and expenses for pensions and for assistance
      of that for pensions
7. Depreciation
   a) on intangible assets and property, plant and equipment
   b) on assets held as current assets; as far as these exceed the
      customary depreciation in the capital company
8. other operating expense
9. income from investments
   thereof from affiliated companies
10. income from other securities and loans of financial assets
    thereof from affiliated companies
11. other interest and similar income
    thereof from affiliated companies
12. depreciation on financial assets and on securities

	held as current assets
13.	Interest and similar expense
	thereof from affiliated companies
14.	Taxes on income
15.	Earnings after taxes
16.	other taxes
17.	net profit or loss

(Source: own illustration)

Again, there will be some irrelevant positions.

Position 8 also includes overheads. They can be very different. The company is likely to be interested in a breakdown. The specific positions are also dependent on the industry.

5.2.3. Cash Flow Statement

For many small businesses, cash flows are closer and easier to understand than the income statement or balance sheet items. The direct method, which is also recommended by IAS 7.19, meets this need. Reference is made to the comments in section 3.6.

IAS 7 does not contain a sample structure. According to German Accounting Standard No. 21 (DRS 21), however, the following structure may be proposed, which may also contain irrelevant items:

Fig. 38: Cash flow statement according to DRS 21.39, 46, 50

Cash flow from operating activities

1. Received payments from customers for the sale of products, goods and services
2. – payments to suppliers
3. – payments for employees
4. – Payments for VAT and other taxes
5. + Other deposits, other than investment or financing activities
6. – Other payments, other than investment or financing activities
7. –/+ income tax payments
8. = cash flow from operating activities

Cash flow from investing activities

1. deposits from the disposal of objects of the intangible assets
2. – payments for investments in the intangible fixed assets
3. + deposits from disposals of objects of the rixed assets
4. – payments for investments in property, plant and equipment
5. + Deposits from the disposal of objects of the financial assets
6. – payments from the repayment of bonds and (Financial) loans
7. + deposits due to financial assets as short-term fin. management
8. – payments due to financial investments as short-term financial management
9. + interest received
10. + dividends received
11. = cash flow from investing activities

Cash flow from financing activities

1. deposits from equity contributions
2. + deposits from the issue of bonds and bonds the admission of (financial) credits
3. – payments from the repayment of bonds and (Financial) loans
4. + deposits from grants / grants received
5. – paid interest
6. – paid dividends
7. = cash flow from financing activities

total cash flow
+ opening balance of cash and cash equivalents
= ending balance of cash and cash equivalents

(Source: own illustration)

5.2.4. Cost element calculation with imputed costs

The cost element number transfers the accounting data to the cost accounting module, whereby several G / L accounts are added up under this number. Thus, a completely independent structure can be created. To avoid processing errors, all G / L accounts should be assigned cost types. This also includes cost types for neutral expenditure, assets and capital.

In a research project in the winter semester 2014/15, the author has developed and proposed the following cost plan:

Fig. 39: Cost element plan from research project

1st digit		2nd digit at 4-8	
1	assets	0	material costs + subcontractors
2	capital	1	bought goods + services
3	income	2	personnel costs
4	proportional	3	personnel-related costs
5	variable	4	operating costs
6	partially fixed costs	5	room costs
7	interval fixed costs	6	vehicle- / travel costs
8	fixed cost	7	administrative costs
9	neutral costs	8	typical cost of sales

1? Assets	2? capital
10 intangible assets	20 Equity
11 real estate + ass. under construction	21 Provisions
12 technical equipment + machines	22 Bonds
13 other plants, operational equipment	23 bank liabilities
14 vehicles + office equipment	
15 financial assets + neutral assets	25 trade payables
16 Inventories	26 group liabilities
17 Receivables	27 other liabilities
18 securities + liquidity	28 liabilities from tax and levies
19 Delimitation	29 delimitation

3rd digit at 4-8		4th digit at 4-8	
0	direct costs	0 – 6	expenses equal
1	special direct costs	7	normalized
2 - 9	Overheads	8	imputed
		9	secondary

2.+3. digit at class 4-8

No.	designation	No.	Designation
0	production materials	52	rent + utilities
1	subcontractors use	53	occupancy costs
2	indirect material	54	cosmetic repairs
3	consumption auxiliaries	55	repairs
4	consumption of consumables	58	property taxes
5	machine power	59	depreciation on buildings
10	expenses for purchased goods	61	travel costs settled with customers
11	spec. direct costs in production	62	variable vehicle costs
13	disposal costs	63	fixed vehicle costs
17	hall energy	65	mileage allowance employees
20	direct costs wages	66	train + plane tickets
21	salesmen commissions	67	lumpsum travel expense
22	overheads wages	72	legal and consulting fees
23	wages	73	office expenses
24	pensions	74	postage, telephone
25	legal social expenditure	75	IT costs
26	voluntary social effort	76	leasing business equipment
32	workwear	76	fees
39	various staff costs	78	membership in organisations
40	effort for waste products	79	deprec. on prop, plant and equipment
41	special tools	81	special expenses of distribution
42	small tools	82	packing material
44	repairs	83	write-downs on claims
45	wear parts	85	catering + Representation
46	maintenance	86	Giveaways
47	machine leasing	87	Advertising
48	various commercial costs	88	Gifts
49	deprec. o. prop., plant + equipm.	89	other typical distribution costs

93 risks	95 interest	97 taxes	99 offsetting

Source: own illustration)

Calculated costs must also be recorded in the accounting department. Here, a separate account group is maintained, in which bookings and offsetting postings cancel each other out. In cost accounting, the clearing accounts for the offsetting postings are assigned to a neutral cost element. For other costs, which are to be supplemented by imputed cost types, the effort can be treated as a neutral expense and the cost element can be calculated independently.

5.2.5. cost center accounting for cost control purpose

For cost centers as part of internal accounting, there are no requirements and only a few generally applicable recommendations, such as the Federal Association of German Industry. In Fig. 15 on page 67, a system for cost center numbers has already been discussed. The BDI proposal would look like this according to this system:

Fig. 40: BDI proposal for cost center plan

0. non-operating activities
01 Rental
03 utilization of rights
05 Securities Trading

1. Material cost centers
10 Material Management in general
11 ordering

quotation processing, ordering, scheduling, material groups,

13 Goods acceptance and inspection
receiving, incoming goods inspection, warehouse overhaul, permanent inventory

15 Material Management
Stock accounting, material planning

17 Material storage and issue
Raw material storage, parts storage, tool storage, tool dispensing, external store, scrapyard

19 transport
lorries, electric carts, railway tracks, petrol stations

2. Research and Development / indirect manufacturing Cost Centers

20 technique, general

22 Research and Development
Research, development, process experiments

23 construction
Standardization, subscription registration

24 trials, testing
Testing laboratories, test fields, material testing

25 prototype construction and testing
functional patterns, exhibition patterns

27 production preparation
production and equipment planning, work and time studies, quality control

28 production control
production technology, company office, equipment manufacturing, interim storage, tool storage

3 to 6. main production cost centers

30 prefabrication

40 main manufacturing

50 installation

60 Special Production

7. Distribution Cost Centers

70 Sales in general

71 sales preparation

Market research, product information, sales planning, advertising
72 acquisition / sale
field service, branches
73 order processing
Order processing, invoicing
74 finished goods warehouse, packaging and shipping
Packing, shipping
75 Customer Service

8. General and Administrative Costs
80 General Administration
81 Management
management, press office
82 personnel administration
Payroll, suggestion system, Training, social affairs
83 Finance and Accounting
General Ledger, Current Account, Finance, asset accounting, cost accounting, costing, evaluation and controlling
84 special administrative services
law, taxes, organization, audit, corporate planning, EDP, patents
85 General Administration
telephone switchboard, in-house mail, registry, translation agency, office supplies, duplication
86 General factory service
plant protection, fire department
87 social services (company doctor, sports facilities, library, canteen, Recreation Center, workers council)

9. Auxiliary cost centers of the general items
91 land and buildings
land, factory buildings, commercial buildings, warehouse buildings, residential buildings, barracks
92 power supply (water supply, steam supply, heating system, power station, gas supply)
93 maintenance
maintenance machinery and tools, building maintenance, maintenance electrical systems

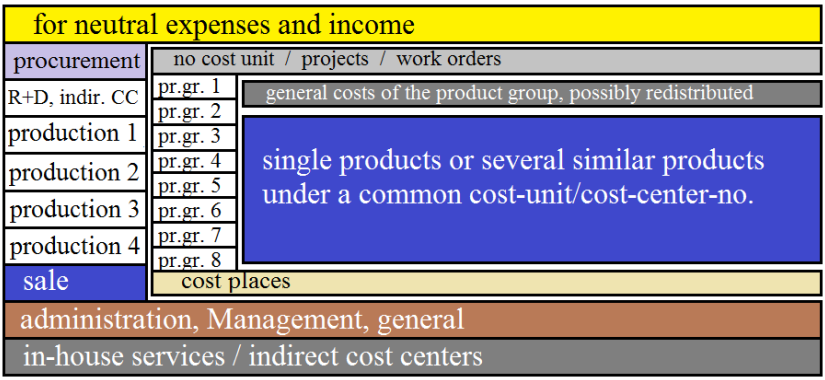
(Source: own illustration)

This plan can be adapted to the individual conditions. Thus, as an alternative to the BDI proposal, human resources management (82) could be run as an auxiliary cost center (for example 94), the costs of which would be distributed among the employed workers. Accordingly, the data processing could be charged according to the devices used.

Small businesses will reduce the scope.

Following the suggestion from Fig. 15 on page 67, the cost centers between 10 and 79 in the last 3 digits of the five-digit cost center no. awarded with a cost object identifier. The cost center numbers beginning with 0, 8 and 9 can be assigned with 5 digits.

Fig. 41: Cost Center Number



(Source: own illustration)

An exception to the limitation to 2 digits are the cost places, which should have a 9 in the 3rd position. The cost center no. 22903 would be in the research for the machine (= cost place) 3 (question where? - cost center). On the other hand, No. 22803 would be a research project for product 3 of product group 8 (question for what? - cost object).

The projects and work orders are treated as payers. Would e.g. Defining a party for a company anniversary as a project, one wants to determine the costs of this celebration. However, they are not paid by the visitors but are overhead costs through the cost center of the company management.

5.2.6. Cost unit accounting for the price and product policy

The cost center numbers can only cover individual costs of the different products. If individual items can also be assigned to cost objects that would otherwise be allocated to overhead costs, these amounts would be special costs.

The website https://mueller-consulting.jimdo.com/finances/costs/ branches to the download file BAB-Muster.ods from the website https://www.noteninflation.de/downloads, where with the allocation of costs Types of Cost Center Groups (Columns in a BAB - Operating Statement Sheet), the relationships between overhead costs and direct costs are calculated.

Fig. 42: Operating statement sheet I

erweiterter BAB I	Summe	Beschaff.	Prod. 1	Prod. 2	Prod. 3	Verwaltung	Vertrieb
Statistik							
Einzelkosten	20.400,00	15.000,00	1.300,00	1.700,00	2.400,00		
Herstellungskosten						36.530,82	36.530,82
Gemeinkosten							
übr. Personalko.	10.000,00	200,00	2.000,00	2.000,00	2.000,00	2.600,00	1.200,00
Abschreibungen	6.000,00	500,00	1.900,00	1.500,00	1.200,00	600,00	300,00
Energie	500,00	50,00	160,00	130,00	100,00	40,00	20,00
Reparaturen	90,00	0,00	20,00	35,00	25,00	10,00	0,00
übrige Sachkosten	519,00	75,00	10,00	67,00	73,00	208,00	86,00
Zinsen	5.000,00	300,00	1.500,00	1.300,00	1.100,00	500,00	300,00
	22.109,00	1.125,00	5.590,00	5.032,00	4.498,00	3.958,00	1.906,00
Verrechnung							
Ist-Gemein-kostensatz in %		7,50%	430,00%	296,00%	187,42%	10,83%	5,22%

(Source: Download file BAB-Muster.ods - There is only a German version.)

With the direct costs per product and the actual overhead rates, the production costs of the period, broken down into finished goods and work in progress, are calculated in an Operating Statement Sheet II.

Fig. 43: Operating statement sheet II

	EK-Mat	Mat-GK	Fert-EK 1	Fert-GK 1	Fert-EK 2	Fert-GK 2	Fert-EK 3	Fert-GK 3	HeKo-Per
Prod. A	3.800,00	285,00	300,00	1.290,00	400	1.184,00	650	1.218,21	9.127,21
davon FE	3.773,00	282,98	294,00	1.264,20	408	1.207,68	633	1.186,35	9.049,20
davon UE	27,00	2,03	6,00	25,80	-8,00	-23,68	17,00	31,86	78,01
Prod. B	5.200,00	390,00	600,00	2.580,00	700	2.072,00	900	1.686,75	14.128,75
davon FE	5.264,00	394,80	612,00	2.631,60	686	2.030,56	929	1.741,10	14.289,06
davon UE	-64,00	-4,80	-12,00	-51,60	14,00	41,44	-29,00	-54,35	-160,31
Prod. C	6.000,00	450,00	400,00	1.720,00	600	1.776,00	850	1.593,04	13.389,04
davon FE	5.888,00	441,60	384,00	1.651,20	614	1.817,44	816	1.529,32	13.141,56
davon UE	112,00	8,40	16,00	68,80	-14,00	-41,44	34,00	63,72	247,48
	15.000,00	1.125,00	1.300,00	5.590,00	1.700,00	5.032,00	2.400,00	4.498,00	36.645,00

(Source: Download file BAB-Muster.ods - There is only a German version.)

Subsequently, the production costs of production are determined, taking into account the changes in inventories of work in progress, and the manufacturing costs of sales are taken into account after taking into account changes in inventories of finished goods. In a product profit and loss account according to the cost of sales method, the profit after deducting the production costs, administrative and selling overhead costs is then calculated.

Fig. 44: Changes in inventories and product income statement

Best.veränd.	HeKo-Per	BV UE	HeKo-Pro	AB FE	EB FE	HeKo-Ums
Produkt A	9.127,21	-78,01	9.049,20	459,08	406,37	9.101,91
Produkt B	14.128,75	160,31	14.289,06	702,72	779,00	14.212,78
Produkt C	13.389,04	-247,48	13.141,56	658,90	584,33	13.216,13
	36.645,00	-165,18	36.479,82	1.820,70	1.769,70	36.530,82

Produkt-GuV	Umsatz	HeKo	Verw.-GK	Vertr.-GK	Gewinn	Ums.Rent.
Produkt A	11.100,00	9.101,91	986,16	474,89	537,03	4,84%
Produkt B	17.500,00	14.212,78	1.539,91	741,55	1.005,75	5,75%
Produkt C	16.000,00	13.216,13	1.431,93	689,55	662,40	4,14%
	44.600,00	36.530,82	3.958,00	1.906,00	2.205,18	4,94%

(Source: Download file BAB-Muster.ods - There is only a German version.)

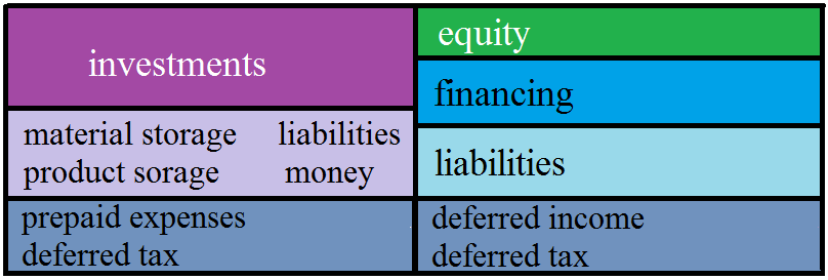
With a determination of the profit up to the level of the individual products the central question for the success of an enterprise is answered. The company management wants to concentrate on the profitable products, which must be identified first.

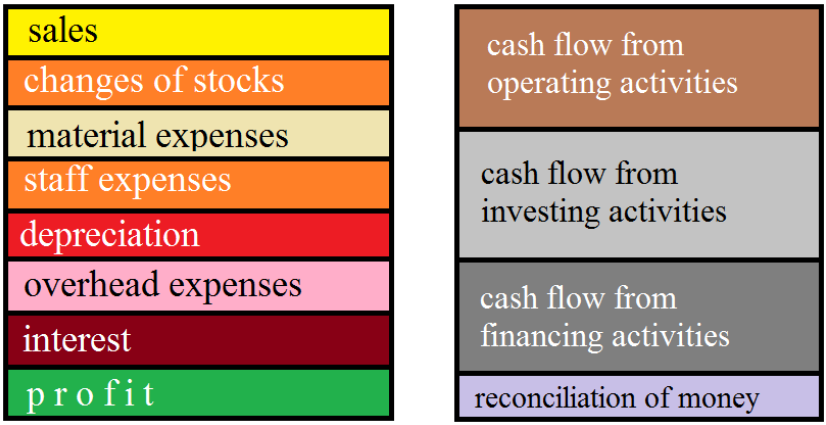
5.3. Data acquisition and data transmission

5.3.1. Annual financial positions

The data collection regarding profit and loss account as well as cost type accounting overlaps. It's almost the same data, only processed differently. We will first ask for the data from the balance sheet, income statement and cash flow statement. Data collection is rarely done in the accounting department. It is common practice to collect the information accumulated in various places in the day-to-day tasks and to transfer it via interface to the accounting software. The structures presented in sections 5.2.1-3 can be summarized as follows:

Fig. 45: Financial Statements



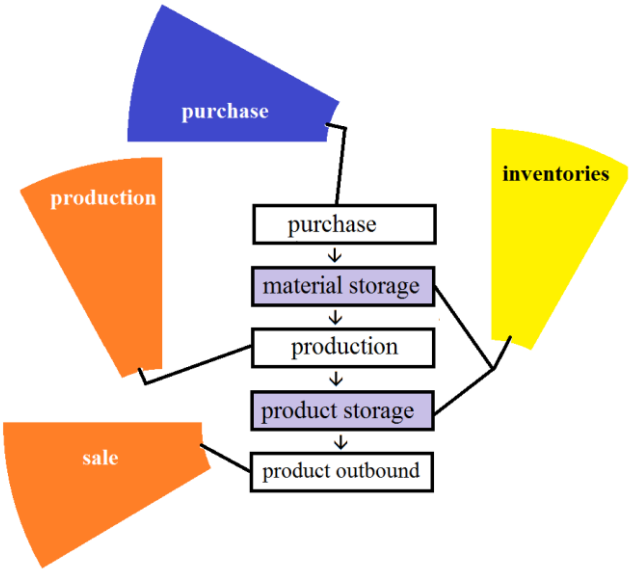


(Source: own illustration)

Neutral income and expenses, other assets and other liabilities have not been included in the figure for the sake of simplicity.

The data from the value chain of goods purchasing - material storage - production - product storage - goods issue is available without gaps in those parts of the ERP system that can not be outsourced from the company (see Fig. 30 on page 157). With them, the day-to-day business is handled and these data are up-to-date and complete because of the motive for earning money. The information can also be generated with a spreadsheet and transmitted via an interface. Section 3.3 details this path. In a research project in the winter semester 2014/15, the author simulated a fictitious company in multi-client financial accounting software in which all accounting data was imported from spreadsheet files via an interface.

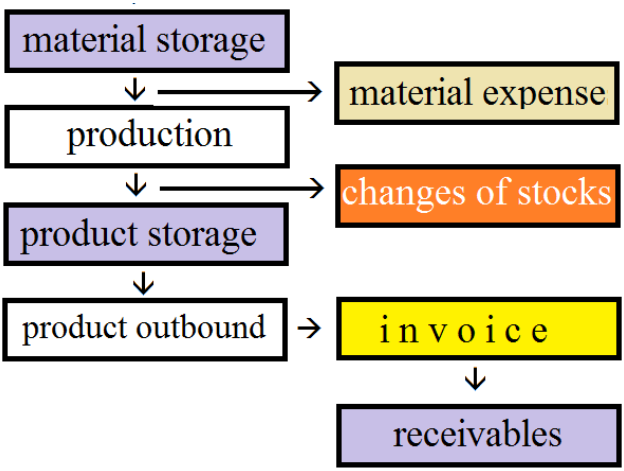
Fig. 46: ERP modules and value chain



(Source: own illustration)

This value chain results in the data of some balance sheet and income statement items. All withdrawals from the material storage trigger the posting record "debit Material Expense, credit Inventories". The completion of products is recorded using the posting record "debit inventories, credit inventory changes". The sale and delivery of products is accounted for by the changes in inventories and sales receivables. This is shown in the following figure.

Fig. 47: Value chain and final positions

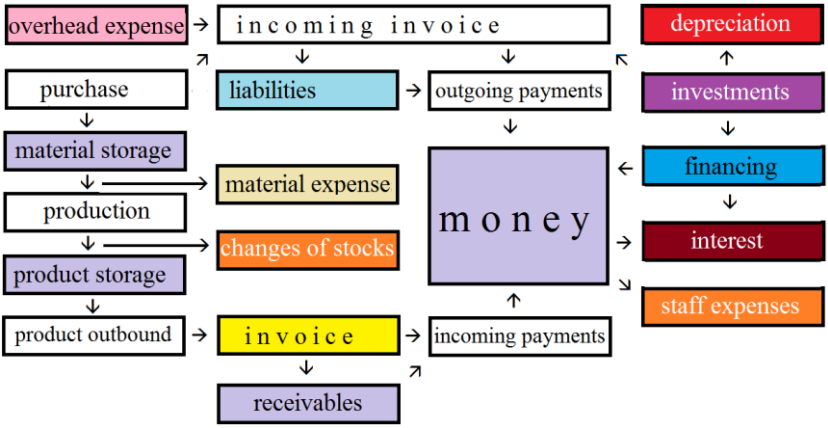


(Source: own illustration)

This value-added process causes deposits from the receivables. For the purchases of the material, the labor and other goods but also payments are effected. Purchases of goods, capital goods and overheads are initially recorded as a liability and then the incoming invoices are paid. Investments lead to depreciation and their financing is paid and repaid. The same posting record can be stored for all similar transactions.

There is a goods-money cycle that can be described with the following figure:

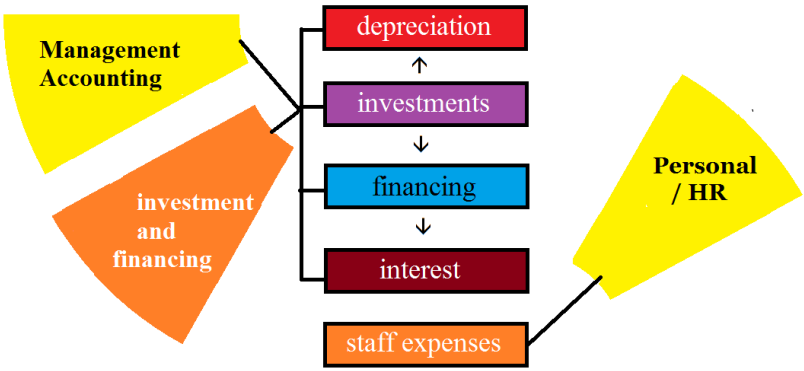
Fig. 48: Goods-money cycle and closing positions



(Source: own illustration)

With the depreciation, interest and personnel expenses, the rectangles on the right contain the items that were previously missing in the income statement according to Fig. 45 on page 179. Your data does not arise directly from the value creation process. The balance sheet items, with the exception of equity, deferred income and deferred taxes, which can be measured at the end of the preparation of the annual financial statements, are also complete. The rectangles at the right end of the figure result from investment controlling, payroll and a finance database, which are present in modules of the ERP system that are externally managed and updated by data that the entrepreneur has in them Upload modules.

Fig. 49: ERP system and closing items

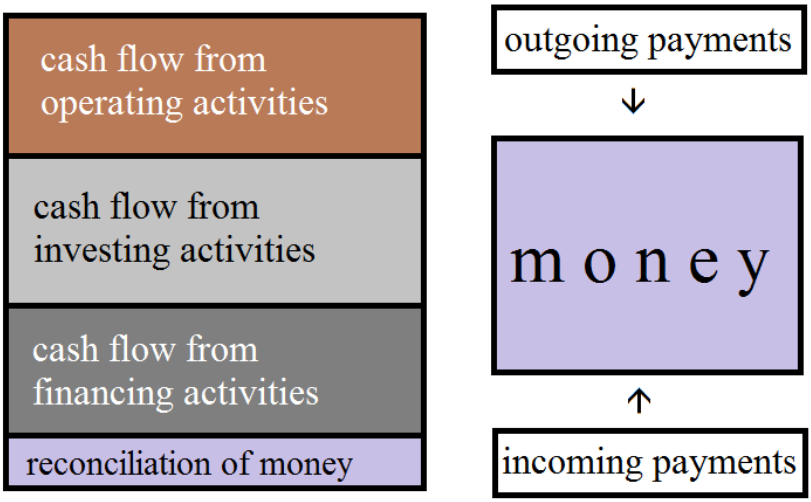


(Source: own illustration)

For personnel and salary payments, professional solutions should be sought from specialized providers. The data for the hours worked can be recorded by the entrepreneur himself and transmitted electronically. For investment and depreciation, investment controlling can provide the necessary data. Just as there is a depreciation plan for investments, there is a repayment plan for financing, from which the interest and repayment installments can be automatically transferred to accounting records.

It has already been shown in section 3.6 that the cash flows can be calculated derivatively from accounting with the cumulative offsetting postings. However, they can also be generated originally from the data of electronic banking. This can be particularly important for a very short-term consideration, if not wait until the booking of all business transactions. Then, links between the cash flow statement items and the bank account transactions must be established.

Fig. 50: Cash flow and payment transactions



(Source: own illustration)

Thus, e.g. Incoming payments with indication of a customer no. or bill no. Deposits from customers. Sales of fixed assets would have to be adjusted. Self-generated payments can be assigned to the flows for "to suppliers" and "for employees" using the offsetting entries for the import into the booking. With regard to investment activity, it is assumed on a simplified basis that the investments made were paid. Unpaid invoices are allocated to operational activities. Tax payments are also initiated and are also assigned to the tax codes via the counter accounts. Not automatically defined:

Cash flow from operating activities

5. + other deposits, other than investment or financing activities
6. – other payments, other than investment or financing activities

Cash flow from investing activities

7. + Deposits due to financial investments in the context of short-term financial management
8. – Disbursements due to financial investments in the context of short-term financial management
9. + Interest received
10. + Dividends received

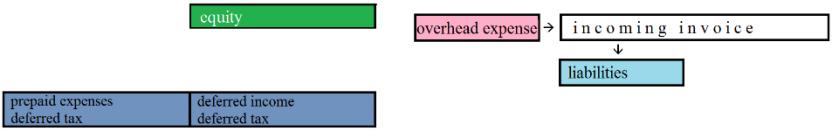
Cash flow from financing activities

1. Deposits from equity contributions
2. + Deposits from issuing bonds and raising (financial) loans
4. + Deposits from grants / grants received
6. – Paid dividends

If there are payment transactions that are not automatically assigned according to the criteria mentioned in electronic banking, a manual assignment would probably be made to one of these items.

Thus, the following rectangles are still open from Fig. 45 on page 179 and 48 on page 183:

Fig. 51: remaining items



(Source: own illustration)

Equity, prepaid expenses and deferred taxes result from the preparation of quarterly and annual financial statements. For the capture of incoming invoices, an invoice receipt file must be created. The processes generated from the purchase of goods are to be read in there. Invoices from overheads that were not included in the purchase of goods should be added.

5.3.2. Cost accounting positions

For cost accounting, it is necessary to enter the account that controls the cost element as well as the cost center and, if necessary, the cost object. In Fig. 41 on page 175, the possibility of a combination of cost center and cost unit no. treated. For the entry of this additional information, there are the following case groups:

material withdrawal

With the article no. of the material that is also required for the stock update, the expense account would be defined. At cost centers here only the production with the cost centers 30 to 69 comes into consideration, if one considers the revised BDI proposal from Fig. 40 on page 172 ff.; or cost center 24 for

research and development consumption. The worker who removes the material would know which cost center he belongs to. The last three digits of the cost center no. would be for the cost unit, which is currently being worked on. Automated capture could be organized with bar code readers.

Payroll and billing

In payroll accounting, employees would be assigned to a cost center to which wages and salaries would be automatically posted. In addition, a quantity recording of the hours worked should be organized, which defines the fulfilled tasks more closely. It would also be recorded if one employee helped out in another cost center. Likewise, the individual wage costs would be recorded for the working hours that would be worked directly on the cost unit. The transfers would be made via separate G / L accounts; the bookings would cancel each other out. Only the cost center transfer would remain. In the case of direct costs, "debit production wages, credit overhead costs" would be posted. Quantity entry could be done in spreadsheet. The file could also generate the record for the transfers via a flexible interface.

invoices

Incoming invoices can relate to material purchases, investments and material expenses. For material purchases, the cost center and cost unit would only be known if it were purchased directly for a specific order. Otherwise, the definition would be made only with the material removal. In order to avoid coverage gaps, the cost center would initially use 10000 lt. Of revised BDI proposal (Fig. 40 on page 172 ff.), Which would then also be addressed in the offsetting entry of material withdrawal. For investments, a cost center and

possibly also a cost center would be entered so that the depreciation from investment controlling (asset accounting) can later be assigned to the right cost center.

For all invoices should immediately a record with assignment of a bill no. and recording the vendor no., amount and due date are generated in an invoice receipt file. The substantive examination would be carried out afterwards; Account and cost centers can be added. A variable interface transfer file can be created from a spreadsheet file to account for material purchases, investments, and overhead. For the payment the electronic banking function of the accounting program (module in the ERP system) would be used.

cash purchases

Cash purchases are comparable to invoices, except that no payment has to be made. The factual accuracy was already checked by the initiator with the payment and he would have to know the facts for the definition of account and cost center. In contrast to the past, cash receipts can be paid with a credit card or bank card. The file of the spreadsheet with which the cash book is kept must therefore distinguish these 3 possibilities. Otherwise, the procedure is the same as for incoming invoices. One could also organize that the cash bookings are attached to the transfer file of the incoming invoices.

regular payments

There are other expenses for which contracts exist but no invoices. For example, rents, magazine subscriptions, insurance policies or contributions to associations are recorded on the basis of the payments. For the update, a file

should be maintained with these expenses, in addition to the amounts with due dates and the account and cost center definition is stored. During payment, this prepared data record can then be transferred to the records to be posted by "copy-and-paste". It could also be arranged that the bookings for regular payments be attached to the transfer file of the incoming invoices.

imputed costs

imputed costs are recognized in addition to the expenses. But also the accounting department must be used, because the cost type is over the account number. controlled. Therefore, a separate account area must be created, in which the booking and offsetting entries cancel each other out. To avoid error messages, they can then be pro forma assigned to a balance sheet item with little movement (for example, in equity).

For imputed costs, a distinction is made between additional costs and other costs. Other costs change expenses, while there are no additional costs for additional costs. Practically, however, both subspecies are processed the same, except that the corresponding effort in the other costs treated as neutral effort and with a cost type no. between 9000 and 9999 (see Fig. 39 on page 170 ff.) is passed on to cost accounting. Despite the credit balance, the clearing account for the offsetting postings is also part of the neutral expenses.

The usual imputed cost types are:

imputed interest:
Other costs to take account of the capital tied up by the cost centers instead of bank rates in general cost centers.

imputed depreciation:
Other costs for consideration of replacement costs and a different useful life compared to tax depreciation.

imputed rents:
Other costs compared to space costs to take account of lost profits from an alternative use of space (rent instead of use).

imputed entrepreneurial wage:
Additional costs to take into account the labor of the co-entrepreneurs.

imputed risks:
Additional costs to take into account calculable risks - at the same time other costs compared to expenses of an unusual amount, which is deferred as a neutral expense when the risk occurs.

For settlement, the imputed costs are calculated once and updated at longer intervals. It is a good idea to include them in the file for regular payments, to define the dummy account and the cost center there, and then execute them once a month.

5.3.3. Quarterly and annual financial statements

After ensuring that all facts and documents of the quarter or year to be closed have been recorded, there are some additional tasks. These transactions are then recorded in the 13th period so as not to distort the data of the regular business activity. It is a matter of:

depreciation

Property, plant and equipment and intangible assets are depreciated. They are already recorded monthly. Because tax depreciation is an annual amount, depreciation has to be recalculated on an annualized basis. The monthly depreciations in periods 01 to 12 are then adjusted in period 13. These operations can automate asset accounting. It only needs to be checked if the items are still there. If there were indications that the current value of fixed assets could be lower than the book value, unscheduled depreciation would also have to be examined.

stocktaking

Inventories should be checked once a year to see if stocks are really there. Deviations have to be corrected. At the balance sheet date - the deadline can also be brought forward - the deviation would be a process of the 13th period. However, there is also the alternative of permanent inventory, where the check is distributed throughout the year and part of the inventory is checked every month or every week. Then the adaptation would be a process of the current period.

When checking, it must also be considered whether the condition of the goods is still flawless or impaired. In a further step, the book values would have to be compared with current prices in order to determine whether there could be an economic impairment. Inventory inventory checks include templates that allow you to calculate the corrective entries in the spreadsheet and to create the adjustment postings via an interface.

years delimitation

Accruals are not to be equated with accrual items in the balance sheet. It concerns all processes, where the achievement is effected not at times, but in periods. If the periods of the services do not coincide with the financial year, they must be delimited. With the typical settlement (first the achievement, then the money), the demarcation takes place over the demands and liabilities. Only in the atypical settlement with prepayment a deferred entry must be formed. In practice, it will always be about the same facts, which then only need to be updated. For calculating the time distribution and the amounts, there are also spreadsheet tools with which the adjustment postings can be created.

update of provisions

Provisions are uncertain liabilities that are often estimated in amount. When updating the accruals, you determine which transactions have been further clarified or settled since the last update. If the liability has been fully or partially fulfilled, it is called the consumption of the provision. For this, the expense is offset by the provision (= minus expense). If, according to recent findings, there is no obligation, the provision is to be released. This creates a yield. It is also necessary to check whether new risks are identifiable, for which

additional provisions need to be posted to the provision. Provisions for calculation and posting are also available for the provisions.

tax calculation

Based on the profit and loss account and possible adjustments to the taxable profit determination (for example non-eligible expenses), the tax assessment for the financial year can be simulated. However, the tax return can be submitted later. The tax to be paid can then only be posted as a tax provision.

In addition, the tax provisions of the last due date must be updated. Tax payments have their offsetting entries in the tax provision. For incoming tax assessments, it must also be checked whether these correspond to the simulation of the last financial statements. Also for the tax calculation there are templates for the spreadsheet.

5.3.4. Technology of data transmission

The mass of data for the current business transactions, the cost accounting and the final work can be generated with the spreadsheet and imported into an accounting software as part of an ERP system. The data collection then gets a strong similarity to the simple accounting, which is described in section 2.9.1. was addressed. If a service provider offers accounting in a multi-tenant software, the data collected in journals can be uploaded there and at the same time be a double entry bookkeeping.

6. ERP in developing countries

Small companies in developing countries using the example of the Cuban Cuentapropistas (trabajadores en cuenta propria = workers on their own account) and based on their own contacts and observations in the city of Guantánamo

6.1. concept

Who cannot see well should not drive a car! Who has no accounting should not lead a company! Both would drive the cart to the wall!

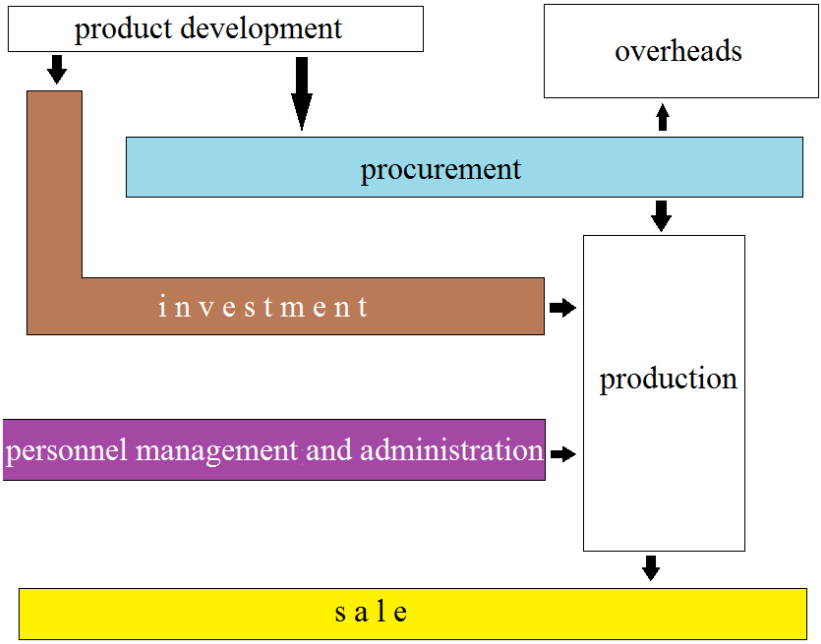
But in developing countries, the average microenterprises do not have accounting and they cannot be expected to be bureaucracy. But well-functioning small businesses are an important factor in the emergence of small and medium-sized businesses. However, a broader middle class is an important factor in the development of a local economy that could make these countries more independent of world markets. A stable local economy is the most effective way to fight the causes of flight.

The necessary information for good corporate governance is the monthly data of a balance sheet, income statement and cash flow statement, as well as a simple cost and activity accounting with cost element accounting (especially with the calculation of imputed costs), cost center accounting (for cost control) and cost unit accounting (for the price policy and product policy). From this it should be possible to develop a plan for the future.

It is estimated that small businesses need business support. A local or regional cooperative could use multitenant ERP software that reads simple data entry from members into a spreadsheet, processes it automatically, and provides professional analysis to its members. An economically trained employee of the

cooperative would have to look at the evaluations and draw the members' attention to opportunities and risks.

Fig. 52: Value added and ERP (core area)



(Source: own illustration)

The target group is very strongly oriented to the cash flows. A book keeping in German tradition, which creates a balance sheet and P & L account from a complex bookkeeping and derivatively determines the cash flow, comes from acceptance problems. The reverse method is to be used to derive a profit and

loss statement from cash flows in connection with a balance sheet. However, the inventory of fixed assets, inventories, receivables and cash and cash equivalents as well as liabilities from operating activities and financing must always be legible. It would be very close to simple accounting. Nevertheless, a simple cost calculation should be possible.

The analysis of the value added processes from Fig. 22 on page 85 and their refinement in Fig. 23 on page 86 must first be reduced to the core area, for which work aids with spreadsheets should then be offered.

This should produce the necessary data overall.

6.2. Data collection from sale

The data collection for the sale is aimed at the industry. Various solutions have been developed. They are presented here. Cuba does not know of the European value added tax. Instead, according to Law No. 113 on the Taxation Act of 21.11.2012), there are the sales tax under Articles 132 to 139, the special tax on products and services under Articles 140 to 145 and the tax on services under Articles 146 to 151 The tax charges the provider; According to Art. 139, sentence 2, it may not be added to the price of the goods. The retail rate (Art 138) and services (Art 149 + 150) is 10%. There is no deduction of input tax, which is why the tax card on the bill is unnecessary. Nevertheless, the entrepreneurs have to generate the tax and thus take into account their price demands.

With a strong division of labor, this leads to higher taxation, which hinders small business owners, who limit themselves to small sections of value added. According to Karl Marx (Das Kapital, p. 81), the price of a commodity is determined by the labor power objectified in it. If this amount were 100 and if it were only provided on one production level, the price of the goods would have to be 111.11 so that 100 remains after deduction of the tax. The tax rate would be 11.1 instead of 10%. If two entrepreneurs split this amount equally, then the first entrepreneur would have to offer his services for 55.56. The second entrepreneur would have to offer his product for 117.28, leaving him with 50 after deducting the tax of 17.73 and the advance payment of 55.56. The tax rate would have increased by 55.6%. For 7 entrepreneurs in the value chain, all other things being equal, the tax burden would have been 55.8%. This tax disadvantage over large (state) enterprises must compensate the Cuentapropistas with higher effectiveness.

6.2.1. Order management of craftsmen

Craftsmen take over jobs, most repairs, to households or other businesses. For larger orders, the scope of the work, the estimated price and the date of completion are set first. The order management of craftsmen (artesanos) is facilitated with the file ventasA19.

Order management is listed in the worksheets. In a journal, only the document numbers are managed and data is summarized from the worksheets. There are

20 processes per file. After that, a follow-up file must be used. The document is released when a document number is assigned. Before that, only drafts are created. The journal assigns the quotation, the order, the delivery note and the invoice to a transaction. If an offer is created without an order, the remaining documents remain empty. For partial deliveries two delivery notes can be filled out. Then this offer, order and invoice would remain empty.

In the "productos" workbench, the craftsman can list his material, which he regularly uses and has to buy. He can mark the columns for the article number, the name and the individual price and copy it into his offer. On the right, he notes his purchase price and calculates the margin of this type of material.

Fig. 53: article master data for material

			Ø =	19,47%
codigo	designación	precio	precio de compra	margen
123	XYZ	10,00	8,00	20,00%
234	ABC	12,00	10,00	16,67%
345	DEF	15,00	12,00	20,00%
456	GHI	18,00	15,00	16,67%
567	JKL	21,00	17,00	19,05%
678	MNO	24,00	19,00	20,83%
789	PQR	27,00	22,00	18,52%
890	STU	30,00	24,00	20,00%
901	VWX	33,00	26,00	21,21%
				-100,00%
				-100,00%
				-100,00%
				-100,00%
				-100,00%
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				-100,00%
				-100,00%

diario | factura | entrega | orden | oferta | **productos** | calculación

(Source: download file - There is only a Spanish version.)

In the worksheet "oferta" he prepares the offer for the customer. As a small businessman, he will work out this in conversation. Then he should insert some empty columns in the "productos" worksheet between the selling price and the purchase price of the material, so that the customer can not recognize the margin. He could also delete these columns for the conversation and copy them back later.

In an area for the address of the customer, the salutation, name, street, zip code and city are entered. Next the date of the offer is entered. Under the heading "oferta" the entrepreneur fills in how many days he can fulfill the task. From this, the delivery date is calculated.

Fig. 54: Offer

				oferta		4001
		fecha de entrega:	12.01.17	10	dias	
codigo	producto / servicio			precio	cantidad	importe
						0,00
123	XYZ			10,00	21,00	210,00
234	ABC			12,00	22,00	264,00
345	DEF			15,00	23,00	345,00
456	GHI			18,00	24,00	432,00
567	JKL			21,00	25,00	525,00
678	MNO			24,00	26,00	624,00
789	PQR			27,00	27,00	729,00
890	STU			30,00	28,00	840,00
901	VWX			33,00	29,00	957,00
						0,00
						0,00
						0,00
	trabajo					
	experto			80,00	10,00	800,00
	cualificado			60,00	12,00	720,00
	facil			40,00	13,00	520,00
	a pagar hasta el dia del		20.01.17	total	neto	6.966,00
	con una deducción de descuento de		-2,00%	6.826,68		
	o, a más tardar, sin deducción hasta el dia del			11.02.17		

(Source: download file - There is only a Spanish version.)

There are 22 lines available to list the required material that the entrepreneur can copy from the productos worksheet. After that he has to enter the amount. He can change the unit price. At the end, 3 lines are planned for the work to be done. There are three qualification levels. The hourly wages are specified in the worksheet "diario". Also this price can be changed in the negotiations. The terms of payment at the end of the offer are also taken from the worksheet "diario". The worksheet "calculación" allows the entrepreneur to evaluate the profit prospects of the possible contract.

Fig. 55: Calculation

(Source: download file - There is only a Spanish version.)

Fig. 56: Order confirmation

Señor
Mario Gomez
Avenida Ché Guevara 68
Jamaica
Prov. Guantánamo

oferta	del	su signo:	Guantánamo el
4001	02.01.17		02.02.17

confirmación de la orden 3001

fecha de entrega: 12.02.17 10 dias

codigo	producto / servicio	precio	cantidad	importe
				0,00
123	XYZ	10,00	21,00	210,00
234	ABC	12,00	22,00	264,00
345	DEF	15,00	23,00	345,00
456	GHI	18,00	24,00	432,00
567	JKL	21,00	25,00	525,00
678	MNO	24,00	26,00	624,00
789	PQR	27,00	27,00	729,00
890	STU	30,00	28,00	840,00
901	VWX	33,00	29,00	957,00
				0,00
				0,00
				0,00
				0,00
				0,00
				0,00
				0,00
				0,00
				0,00
				0,00
				0,00
	trabajo			0,00
	experto	80,00	10,00	800,00
	cualificado	60,00	12,00	720,00
	facil	40,00	13,00	520,00

a pagar hasta el dia del 20.02.17 total neto 6.966,00
con una deducción de descuento de -2,00% 6.826,68
o, a más tardar, sin deducción hasta el dia del 14.03.17

(Source: download file - There is only a Spanish version.)

The latest status of the offer negotiated with the customer should be printed out and a copy signed by the customer. Then the data of the offer are marked and copied into the worksheet "orden" in the same line area. While the offer is still a non-binding information of the entrepreneur about his prices, a contract is concluded with the order confirmation.

Also, the delivery date is now not a mere assessment, but a part of the contract. The number and the date of the offer are automatically read; the date of the order must be completed. The order number must be given in the worksheet "diario".

The form for the delivery note is largely free. Address and order number are accepted. The delivered materials and the work done are copied from the order. For extensive partial services, several delivery notes can be filled out; Offer, order and invoice will remain free. In the worksheet "diario" no numbers may be assigned for these rows. For smaller partial services, the service date of the item can also be noted in the delivery note.

After completing the job, the data from the worksheet "orden" is copied to the corresponding lines of the factura worksheet. If there are deviations from the order, the invoice will be adjusted. The deviations must then be documented with delivery notes.

This worksheet also contains an area where a letterhead is defined as a header for the entrepreneur. It can also be a footer designed for more information.

Fig. 57: Invoice

Maestro Maximo

artesano

+ Maestro Maximo, 3 Oeste entre 14 y 15 Norte, Guantánamo +

Señor
Mario Gomez
Avenida Ché Guevara 68
Jamaica
Prov. Guantánamo

oden	del	su signo:	Guantánamo el
3001	02.02.2017		02.03.17

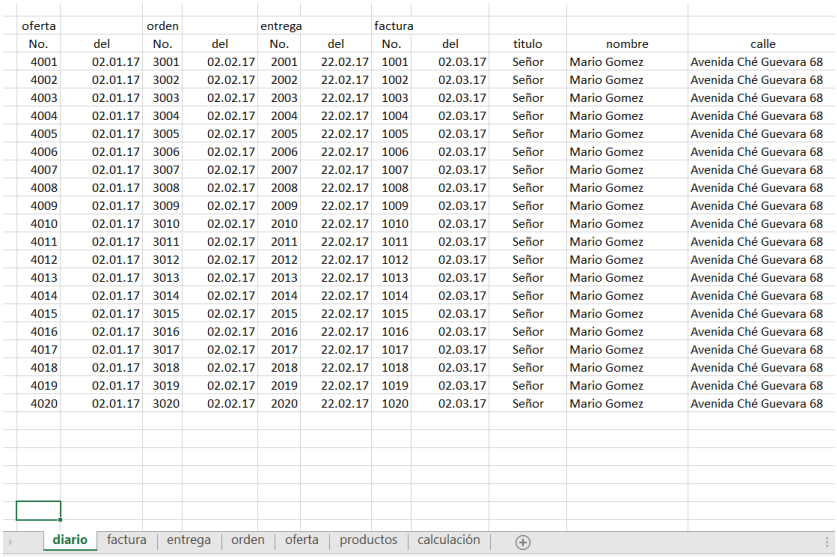
factura 1001

codigo	producto / servicio	precio	cantidad	importe
				0,00
				0,00
				0,00
				0,00
				0,00
				0,00
				0,00

(Source: download file - There is only a Spanish version.)

In the worksheet "diario", the orders are combined in a table.

Fig. 58: Journal I



oferta		orden		entrega		factura				
No.	del	No.	del	No.	del	No.	del	titulo	nombre	calle
4001	02.01.17	3001	02.02.17	2001	22.02.17	1001	02.03.17	Señor	Mario Gomez	Avenida Ché Guevara 68
4002	02.01.17	3002	02.02.17	2002	22.02.17	1002	02.03.17	Señor	Mario Gomez	Avenida Ché Guevara 68
4003	02.01.17	3003	02.02.17	2003	22.02.17	1003	02.03.17	Señor	Mario Gomez	Avenida Ché Guevara 68
4004	02.01.17	3004	02.02.17	2004	22.02.17	1004	02.03.17	Señor	Mario Gomez	Avenida Ché Guevara 68
4005	02.01.17	3005	02.02.17	2005	22.02.17	1005	02.03.17	Señor	Mario Gomez	Avenida Ché Guevara 68
4006	02.01.17	3006	02.02.17	2006	22.02.17	1006	02.03.17	Señor	Mario Gomez	Avenida Ché Guevara 68
4007	02.01.17	3007	02.02.17	2007	22.02.17	1007	02.03.17	Señor	Mario Gomez	Avenida Ché Guevara 68
4008	02.01.17	3008	02.02.17	2008	22.02.17	1008	02.03.17	Señor	Mario Gomez	Avenida Ché Guevara 68
4009	02.01.17	3009	02.02.17	2009	22.02.17	1009	02.03.17	Señor	Mario Gomez	Avenida Ché Guevara 68
4010	02.01.17	3010	02.02.17	2010	22.02.17	1010	02.03.17	Señor	Mario Gomez	Avenida Ché Guevara 68
4011	02.01.17	3011	02.02.17	2011	22.02.17	1011	02.03.17	Señor	Mario Gomez	Avenida Ché Guevara 68
4012	02.01.17	3012	02.02.17	2012	22.02.17	1012	02.03.17	Señor	Mario Gomez	Avenida Ché Guevara 68
4013	02.01.17	3013	02.02.17	2013	22.02.17	1013	02.03.17	Señor	Mario Gomez	Avenida Ché Guevara 68
4014	02.01.17	3014	02.02.17	2014	22.02.17	1014	02.03.17	Señor	Mario Gomez	Avenida Ché Guevara 68
4015	02.01.17	3015	02.02.17	2015	22.02.17	1015	02.03.17	Señor	Mario Gomez	Avenida Ché Guevara 68
4016	02.01.17	3016	02.02.17	2016	22.02.17	1016	02.03.17	Señor	Mario Gomez	Avenida Ché Guevara 68
4017	02.01.17	3017	02.02.17	2017	22.02.17	1017	02.03.17	Señor	Mario Gomez	Avenida Ché Guevara 68
4018	02.01.17	3018	02.02.17	2018	22.02.17	1018	02.03.17	Señor	Mario Gomez	Avenida Ché Guevara 68
4019	02.01.17	3019	02.02.17	2019	22.02.17	1019	02.03.17	Señor	Mario Gomez	Avenida Ché Guevara 68
4020	02.01.17	3020	02.02.17	2020	22.02.17	1020	02.03.17	Señor	Mario Gomez	Avenida Ché Guevara 68

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The sales are differentiated into the groups material and work. Behind the invoice amount the payment date and the amount are noted. After that it is calculated whether the invoice or a part of it is open, and whether the open amount agrees with the allowed discount deduction. This determines the sales and the outstanding receivables.

Fig. 59: Journal II

calle	ciudad	Provincia	materiales	trabajo	neto	con descuento	Pago fecha	importe	abierto	descuento
é Guevara 68	Jamaica	Prov. Guantánamo	4.926,00	2.040,00	6.966,00	6.826,68	03.04.19	6.826,68	139,32	139,32
é Guevara 68	Jamaica	Prov. Guantánamo	0,00	0,00	0,00	0,00				
é Guevara 68	Jamaica	Prov. Guantánamo	0,00	0,00	0,00	0,00				
é Guevara 68	Jamaica	Prov. Guantánamo	0,00	0,00	0,00	0,00				
é Guevara 68	Jamaica	Prov. Guantánamo	0,00	0,00	0,00	0,00				
é Guevara 68	Jamaica	Prov. Guantánamo	0,00	0,00	0,00	0,00				
é Guevara 68	Jamaica	Prov. Guantánamo	0,00	0,00	0,00	0,00				
é Guevara 68	Jamaica	Prov. Guantánamo	0,00	0,00	0,00	0,00				
é Guevara 68	Jamaica	Prov. Guantánamo	0,00	0,00	0,00	0,00				
é Guevara 68	Jamaica	Prov. Guantánamo	0,00	0,00	0,00	0,00				
é Guevara 68	Jamaica	Prov. Guantánamo	0,00	0,00	0,00	0,00				
é Guevara 68	Jamaica	Prov. Guantánamo	0,00	0,00	0,00	0,00				
é Guevara 68	Jamaica	Prov. Guantánamo	0,00	0,00	0,00	0,00				
é Guevara 68	Jamaica	Prov. Guantánamo	0,00	0,00	0,00	0,00				
é Guevara 68	Jamaica	Prov. Guantánamo	0,00	0,00	0,00	0,00				
é Guevara 68	Jamaica	Prov. Guantánamo	0,00	0,00	0,00	0,00				
é Guevara 68	Jamaica	Prov. Guantánamo	0,00	0,00	0,00	0,00				
é Guevara 68	Jamaica	Prov. Guantánamo	0,00	0,00	0,00	0,00				
é Guevara 68	Jamaica	Prov. Guantánamo	0,00	0,00	0,00	0,00				
é Guevara 68	Jamaica	Prov. Guantánamo	0,00	0,00	0,00	0,00				

(Source: download file - There is only a Spanish version.)

6.2.2. Sales of taxi drivers

These services are of great importance because of the poor state of public transport as well as the poor long-distance connections and bureaucratic obstacles to getting tickets. There are rickshaws in the cities as a bicycle taxis for a maximum of 2 people and shorter sticks, motorcycle taxis (mostly from DDR production) for one person, and car taxis, which also take trips to more distant destinations. Whilst uniform prices are charged for simple inner-city journeys, prices for cross-country or longer periods are different and negotiable. There are mainly vehicles from Soviet production used, which repair the driver if necessary, even if necessary. The professional group also has little interest in fully documenting their economic circumstances. It is to be expected that fewer passengers will appear in the records than were actually transported. An

effective cost-effectiveness check would require that, in addition to the revenue, the km-levels of operational use would also be recorded. This could be done with the file ventasC19 (coche = car). It starts with a logbook for each month:

Fig. 60: Logbook

			precio	CUC:	2,00	3,00		carretera					gasolina comprado			
fecha	km: inicio	km: final	cond.	dia	noche	ingreso	precio	destino	km: inicio	km: final	distancia	litros	CUC	otros	CUC
01.04.2019	123.456	123.567	111	15	10	60,00					0				
02.04.2019	123.598	123.700	102	14	9	55,00					0				
03.04.2019	123.700	123.940	240			0,00	50,00	Santiago	123.700	123.940	240	40,00	30,00		
04.04.2019			0			0,00					0				
05.04.2019			0			0,00					0				
08.04.2019			0			0,00					0				
09.04.2019			0			0,00					0				
10.04.2019			0			0,00					0				
11.04.2019			0			0,00					0				
12.04.2019			0			0,00					0				
15.04.2019			0			0,00					0				
16.04.2019			0			0,00					0				
17.04.2019			0			0,00					0				
18.04.2019			0			0,00					0				
19.04.2019			0			0,00					0				
22.04.2019			0			0,00					0				
23.04.2019			0			0,00					0				
24.04.2019			0			0,00					0				
25.04.2019			0			0,00					0				
26.04.2019			0			0,00					0				
29.04.2019			0			0,00					0				
30.04.2019			0			0,00					0				
total	484	93,6%	453	29	19	165,00					240	40,00	30,00		0,00

(Source: download file - There is only a Spanish version.)

After the date, the km stand is entered at the beginning and at the end of the activity. From this, the daily driven kilometers can be calculated and added at the end of the month. At the same time, from the km level at the beginning and at the end of the month, the total mileage of the vehicle can be calculated. This results in a quota of operational use. For city driving, recording the number of trips is sufficient. If different prices are taken for day and night travel, different columns are needed. The regular daily income results from multiplying the number of trips with the price.

For special trips a special record should be made. In addition to the turnover and the destination, the mileage at the beginning and at the end of the trip should be noted. In another part of the table, the expenditure on petrol with the quantity (liters) recorded and other expenditure with an indication of the purpose should be recorded.

In an annual overview, the totals of the individual months are summarized in a statistic:

Fig. 61: Statistics

	km: inicio	km: final	km	trabajo	cond.	cuidad dia	noche	carretera distancia
enero	123.456	123.940	484	93,6%	453	29	19	240
febrero	123.456	123.940	484	93,6%	453	29	19	240
marco	123.456	123.940	484	93,6%	453	29	19	240
abril	123.456	123.940	484	93,6%	453	29	19	240
mayo	123.456	123.940	484	93,6%	453	29	19	240
junio	123.456	123.940	484	93,6%	453	29	19	240
julio	123.456	123.940	484	93,6%	453	29	19	240
agosto	123.456	123.940	484	93,6%	453	29	19	240
setiembre	123.456	123.940	484	93,6%	453	29	19	240
octubre	123.456	123.940	484	93,6%	453	29	19	240
noviembre	123.456	123.940	484	93,6%	453	29	19	240
diciembre	123.456	123.940	484	93,6%	453	29	19	240
			5.808	93,60%	5.436	348	228	2.880

(Source: download file - There is only a Spanish version.)

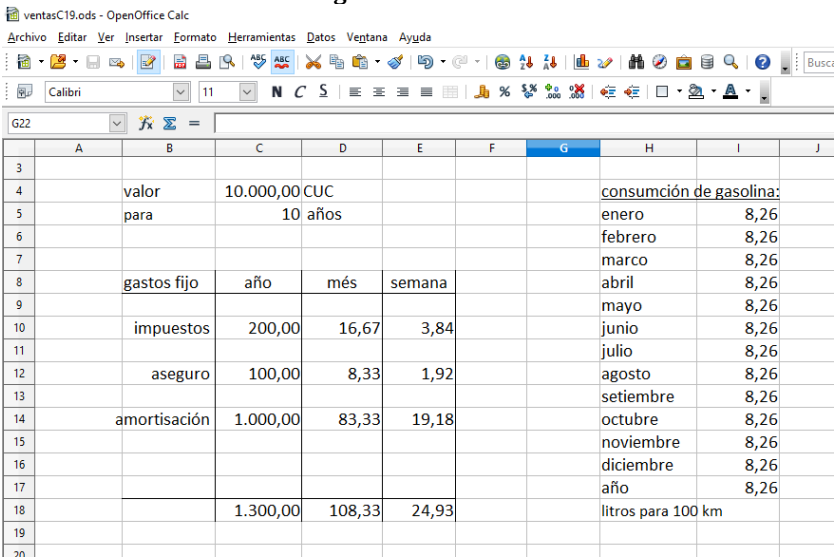
Below this a profit calculation is added in which the private portion of the variable costs such as income is taken into account and a contribution margin is determined. From this, the fixed costs reduced by the private share and the imputed entrepreneurial wage are deducted.

Fig. 62: Profit calculation

		gasolina		otros			gastos		
	ingreso	litros	CUC	CUC	particular	contribución	fijos	trabajo	neto
enero	165,00	40	30,00	0,00	1,92	136,92	101,39	30,00	5,53
febrero	165,00	40	30,00	0,00	1,92	136,92	101,39	30,00	5,53
marco	165,00	40	30,00	0,00	1,92	136,92	101,39	30,00	5,53
abril	165,00	40	30,00	0,00	1,92	136,92	101,39	30,00	5,53
mayo	165,00	40	30,00	0,00	1,92	136,92	101,39	30,00	5,53
junio	165,00	40	30,00	0,00	1,92	136,92	101,39	30,00	5,53
julio	165,00	40	30,00	0,00	1,92	136,92	101,39	30,00	5,53
agosto	165,00	40	30,00	0,00	1,92	136,92	101,39	30,00	5,53
setiembre	165,00	40	30,00	0,00	1,92	136,92	101,39	30,00	5,53
octubre	165,00	40	30,00	0,00	1,92	136,92	101,39	30,00	5,53
noviembre	165,00	40	30,00	0,00	1,92	136,92	101,39	30,00	5,53
diciembre	165,00	40	30,00	0,00	1,92	136,92	101,39	30,00	5,53
	1.980,00	480	360,00	0,00	23,06	1.643,06	1.216,74	360,00	66,32

(Source: download file - There is only a Spanish version.)

Fig. 63: Fixed costs



	A	B	C	D	E	F	G	H	I	J
3										
4		valor	10.000,00	CUC				consumción de gasolina:		
5		para	10	años				enero	8,26	
6								febrero	8,26	
7								marco	8,26	
8		gastos fijo	año	més	semana			abril	8,26	
9								mayo	8,26	
10		impuestos	200,00	16,67	3,84			junio	8,26	
11								julio	8,26	
12		aseguro	100,00	8,33	1,92			agosto	8,26	
13								setiembre	8,26	
14		amortisación	1.000,00	83,33	19,18			octubre	8,26	
15								noviembre	8,26	
16								diciembre	8,26	
17								año	8,26	
18			1.300,00	108,33	24,93			litros para 100 km		
19										
20										

(Source: download file - There is only a Spanish version.)