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Veterinary advice to entrepreneur-like dairy farmers



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Veterinary advice to entrepreneur-like dairy farmers

***From curative practice to coach-consultant:
what needs to be changed?***

June 2006

"Take change by the hand before it takes you by the throat"
Winston Churchill, 1943

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Preface

The market for the (Dutch) cattle practitioner is changing. Following EU-policy and decreasing margins for the dairy farms, the dairy farmers are changing their management-style. This demands other qualities of the practitioners. Their veterinary activities will, to a large extent, comprise of communication and coaching-advice.

This report provides the practitioners with instruments to enlarge their opportunities as veterinary farm-advisor. One of the questions answered regards: "How can the practitioner market his professional and herd-associated knowledge and skills on the (larger, entrepreneur-like) dairy farms?".

The practitioner reinforces the opportunities for such marketing through investing in necessary skills.

The report addresses the developments in the market and the dairy farmer as an entrepreneur, it deals with the changes needed within the veterinary practice, and it points to the way how the added value of the veterinarian can be converted into benefits to the dairy farmer.

The report has been conceived through a joint effort of the Faculty of Veterinary Medicine in Utrecht (NL), the Faculty of Veterinary Medicine in Gent (B), and Pfizer Animal Health.

Summary

The Dutch dairy sector will, in the near future, comprise, to a large extent, large dairy farms (over 1 million kg milk). Following this, dairy farmers will change into entrepreneur-like dairy farmers. It is expected that such dairy farmers will put forward other demands to their practitioners. In order to remain a discussion partner for these dairy farmers, the practitioners shall timely deal with those developments and new demands. In addition to knowledge about the dairy sector and insight into the motivation of an entrepreneur-like dairy farmer, the practitioner needs knowledge of all aspects of the process of communication.

Entrepreneur-like dairy farmers have certain characteristics in common, for example in the area of professionalism, commercial focus, organization, communication and behaviour. For practitioners who wish to be advisor of such farmers, it is necessary to know their strategy, farming goals, attitude, social standards and mentality. Insight into these characteristics and in the way they are playing a role in the considerations and decisions of the farmer are paramount for the marketing of veterinary services.

Not only knowledge about the entrepreneur-like dairy farmers is important. Self-knowledge of the practitioner is crucial as well. Strong points of the current cattle practitioner are, among others, his relationship with the farmer based on trust, his knowledge and skills regarding issues of health and disease, and reproduction, his availability. Points for improvement are, among others, a too dominant attitude, the poor communication, and his way of working in a non-structured manner without planning. In order to become a full advisory partner of the entrepreneur-like dairy farmer, the practitioner has to improve these and other weak points.

The design of a general business-plan for the veterinary practice will provide all coworkers with clarity about the direction the practice is moving to. What products and services do clients wish to obtain, and can the practice deliver these? The current situation explains that the entrepreneur-like dairy farmers ask for products and services which the practitioner is unable to deliver. This results in less contact moments and - possibly - loss of clients. A plan yields clarity and is the beginning of action. This report provides practitioners with instruments to reinforce their position among entrepreneur-like dairy farmers to meet their new demands.

Introduction

Various recent scenario studies showed that the dairy farmers who will last in this sector will comprise family run dairy herds with 4 to 8 tons of milk per year on the one hand, and herds with over 8 tons of milk per year on the other hand.

The latter herds will, undoubtedly, be the larger herds with more than 100 cows. On these farms we will find *entrepreneur*-like farmers who show a different attitude, mentality and farming style. Farming goals, strategies, characteristics, and management style differ from the smaller family run dairy operations.

The current veterinary curriculum will, if at all, primarily focus on the smaller family-run dairy farms with regard to veterinary herd advisory programmes, while little or no attention is paid to the forenamed *entrepreneur*-like larger dairy farms and the larger family-run dairy farms.

The future trend in the dairy sector is towards larger dairy herds. Hence, the question can be raised whether the veterinary curriculum as well as the veterinary practitioners are well prepared to provide these larger farms with the proper veterinary services (Cannas da Silva et al., 2006). The authors consider this issue a “blanc spot” in the students’ curricula and in continuing professional education. In some areas, *entrepreneur*-like dairy farmers have left their veterinary practice because the latter does not meet with the demands of these farmers.

The **objective** of this paper is to address the different features of *entrepreneur*-like dairy farmers as well as the stronger and weaker points of current practitioners, in order to come up with a plan of action for veterinarians for preparing them to the task of providing advisory services tailor-made for and requested by *entrepreneur*-like dairy farmers.

In the following paragraphs we will first give the major features of *entrepreneur*-like farmers [I], followed by the strengths-and-weaknesses assessment results regarding veterinary practitioners [II]. Subsequently, the points of improvement and investment by practitioners are addressed in order to provide hands-on for the herd health practitioner of the future [III].

I. Major features of entrepreneur-like dairy farms and -farmers

Entrepreneurship

(after Bergevoet, 2005)

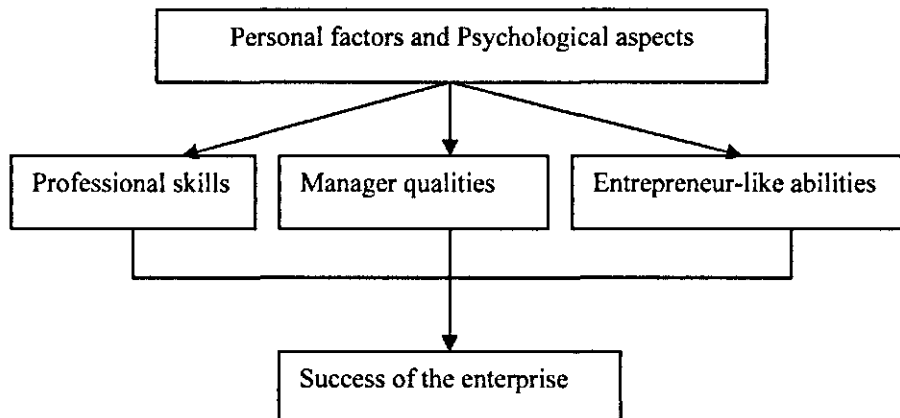
Schumpeter (1949) has stated that *“An entrepreneur is someone who has got ideas and is full of action, who has the qualities to inspire other people and who does not accept the ordinary borders of structured situations. He is a catalyzer of changes, instrumental to detect new opportunities, which makes the entrepreneur function an unique one.”*

The 8 major features of an entrepreneur are:

- risk taking
- capital providing (from own means or external sources)
- innovative
- finds opportunities to make profits
- is responsible for the process to create new values
- enhances changes
- decision-making based on multiple judgements
- a planner

For those who advise an entrepreneur it is absolutely necessary to get acquainted with the goals, attitude, social values and observable behaviour of these farmers before moving to action.

Graphically seen, the next characteristics are combined in one entrepreneur:



Psychological factors are, for example, innovative behaviour and risk attitude. Risk attitude should in this context be considered as based on positively evaluating behaviour; therefore, entrepreneurs are often considered as risk-takers. Another aspect regards the “locus of control”. This means that the results of a decision process are determined by the person himself or externally, as influenced by knowledge and experience. Entrepreneurs usually are convinced that the results of decisions are determined by themselves on the basis of efficiency and self-efficacy under consideration of their own risk-perception. They often observe the right opportunities and select them. They understand the art and science to take decisions which lead to the achievement of their goals. They understand complex information. They are able to create situations of cooperation and trust, for example

through their connections and contact with peers. They show conviction and social-communicative skills (Zijlstra et al., 2006)

The *entrepreneur*-success manifests itself in the achievement of multiple goals. These farmers are highly interested in pleasure in their work (showed by public image; working with animals; food safety as primary feature of their enterprise; in the fact that challenges are opportunities instead of threats) and that they do not necessarily cling to economic goals, but rather to intrinsic aspects of a dairy farm. See also paragraph I.7 about behavioural economics.

The following clusters of characteristics have been determined for *entrepreneur*-like dairy farms.

1. professional skills
2. commercial and market-oriented focus
3. high degree of organization
4. skilled in communication, discussion and negotiation
5. farm economic orientation
6. aware of own abilities and skills; aware of what others should provide
7. behavioural economics

Each of these clusters can be further elaborated in detail.

I.1 Brinkmanship and further

(a professional farmer has the proper knowledge and skills in the farm-technical areas, has the proper sense for animals and farm, and aims at optimal technical results; he uses performance figures to frequently evaluate performance)

These farmers have a broad view on their farm business and know very well what is going on on their farm. They show a strong drive in their farming activities, are looking for stability without too much changes occurring. They aim at this stability by optimizing the number of personnel versus costs (reflected for example by the weighing between purchasing a tractor or an automatic milking system) and by trying to eliminate farm-blindness. They know about developments in the sector as well as within the EU policy. These farmers try to gain new and more knowledge and look for trustful, sustainable knowledge-intensive advisors within their professional network on a national scale and - if indicated when for example the veterinary practice does not meet with their demands - abroad. Their sociological farming style cannot be placed under one of the styles as introduced by Van der Ploeg (Van der Ploeg, 1993; Van der Ploeg, 1996).

The technical and knowledge level of these farmers is high and further increases, leading to a critical attitude and strategic visions.

They are planners on the shorter as well as the longer term, and try to make a prediction of the changes ahead. This enables them to adapt (elements of) their farm management in time. Such changes may refer to milk price, milk quota, subsidies, price of land, or incentives for disease control. These features distinguish the *entrepreneur*-like farmers from their manager-colleagues (Heesbeen, 2004). These farmers hire people on the basis of their technical skills, or hire technical skills from outside. "Passion" is an often heard feature among *entrepreneurs*.

Technical professionalism and strategic management are sometimes hard to combine in one person. Then it could be indicated to distribute these two tasks among different people, depending on competences present. A clear strategic vision (on paper) leads to peace on the farm and often to better results.

I.2 Commerce and market

Entrepreneurs show a strong market-orientation; they produce market-conform as put forward by e.g. quality demands. Such quality demands may originate from e.g. consumers/retailers, dairy industry and or the national or EU authorities. It should be stated at this place that the European Dairy Farmers, EDF, show activities in the area of developing HACCP-like programmes for application on their farms (Cannas da Silva et al., 2006).

Entrepreneurs show a strong orientation towards society and towards opportunities. They are not defensive, but rather prospective in nature; they enter discussions with many stakeholders and actors from society, involving aspects such as agricultural politics, the environment, animal protection and nature conservation.

From areas like marketing sciences and business administration these farmers take the principles and *modus operandi* for further application within their farm and farm management. A wide scope on developments of the sector, and their vision on (expected) developments creates awareness about opportunities and limitations that their production environment provides them with.

I.3 Organization

One of the success factors on *entrepreneur-farms* [as well as on the larger family-run farms] refers to the level of organization (Van Ranst, 2006). This is partly caused by the fact that these farmers commonly hire external labour to execute all daily activities according to the farmer's strategy. Preferably, this external labour has got the proper knowledge and skills, as long as the costs involved are not too high. The latter means that often also unskilled labour is hired.

Many of the *entrepreneur-like* farmers have a "farm business plan" in their head and not, for example, on paper. On truly large farms of, for example, more than 1000 cows and with several farm workers, it is indicated that a clear, general farm business plan is available on paper. This plan comprises the different business units, the goals per business unit, the routine activities per business unit to be conducted, as well as the points of evaluating performance in each business unit and the corrective actions in case of deviating performance. One of the advantages of such an approach is that the farmer can assign different responsibilities to different farm workers in a kind of task distribution over business units. An example of the latter is given in Annex I on young stock rearing. *Entrepreneurs* are individualists who will see the advantages of team-work as long as the final results are achieved.

A farm business plan is one of the necessities of such dairy farms; such a plan is regularly evaluated and adjusted when needed.

I.4 Communication

Entrepreneurs are highly interested in communication. They easily speak with other entrepreneurs and have social skills to easily move around in society. Sometimes, one may think they are arrogant or hard-headed, but that might well be the reflection of their position and their knowledge. They need through communication the stimuli from others in order to reflect on their vision and to innovate.

They are commonly quite willing to put their data and (economic) information into the open for discussion, if there exists a mutual trust and respect.

They are quite critical persons who will not immediately accept or adopt the answers to their questions to e.g. advisors. An advisor needs to explain his way of analyzing, inference and

conclusions to them so they can assess whether they come to the same conclusions. If not, there needs to be ample room for discussion. *Entrepreneurs* need to weigh the arguments for conclusions and advice themselves. While communicating about an advice there should be “chemistry of interaction” between farmer and advisor.

When asked about it, it appears that *entrepreneurs* need specific products and services from advisors and specialists they select (see also paragraph I.6). The latter must, however, be able to provide “added value” to them and will be tested on that issue.

The entrepreneur-like farmers pay attention to Public Relations; they are often willing to tell others about their farm and their strategies, their farming goals and the ways by which they try to achieve these goals. They may receive civilians, professionals, environmentalists, school children on their farm.

I.5 Farm economics

I.5.1 General issues

Economic decision-making is a daily process for *entrepreneur*-like farmers. He is very well aware of production costs and likes to save on (direct or variable) costs. He distinguishes clearly between costs and investments. Cash-flow is a priority, like investments within the possibilities of the farm business; increase of scale in order to control the costs per unit of scale is another relevant issue to him.

Regarding costs and income, performance parameters are being used. Examples of such parameters can be found in an example from EDF (see Annex II). Feeding system (daily intakes of grass, corn and concentrates are compared to milk income from roughages and concentrates), productivity parameters (labour, capital, land), costs and income, management parameters and production figures, income per entrepreneur, family income, break-even points per 100 kg Fat Corrected Milk are just some of the EDF parameters.

Efficiency as well as rentability are relevant issues to these farmers.

The costs related to hired labour all in are preferably kept around de 17 euro per hour.

Advice from third parties is preferably obtained for free. He is willing to pay for such advice, if beforehand it is made sufficiently clear to him what the economic benefits will be for him or his enterprise. When the information transfer is completed, he will most probably stop the purchase of such service and change over to new information sources. Decision-making based on advice will most probably take place on economic grounds and opportunities provided (see also paragraph I.6). In Annex II some economic websites for farm economics are provided (LEI, The Netherlands).

I.5.2 Increase of scale

The following terms are handled in the sector regarding increase of scale:

- Increase of scale can be defined as increase of the **average** herd size over time;
- Increase of herd size is an increase of size of the **individual farm**;
- Scale effects: the differences between costs and income **per unit of herd size**, caused by the size of the farm (economies of size).

Causes of increase of scale

Increase of scale is a phenomenon that occurs in (nearly) all sectors. There are four main reasons for increase of scale.

- A more efficient use of fixed production factors. For example, a better use of production resources, a more economically efficient use of (labour saving) investments, a better balance between labour and production resource, a non-linear relationship between costs of a production resource and the capacity of that resource.
- Technological developments. New technological developments are not always applicable to all herd sizes. Hence, larger farms benefit more from new technologies than small farms.
- Differences in price. Larger farms have a better position for negotiating prices at the purchase side, and at the same time also at the selling side for price per volume and reductions.
- Effects of (EU and national) political decisions and policy could vary largely between countries.

For many reasons (such as farming goals, infra-structure, differences in costs advantages, agricultural policy etc) the agricultural sector shows less increase of scale than some other sectors.

Effects of scale

The analysis of effects of scale is usually conducted using graphs of average total costs (GTK), on both the short (GTK_k) as the long term (GTK_l), set against the average value of the output (see Fig.1). Economically seen, a farm has an optimal production size, when the average total costs per unit product (GTK) are minimal (Tempel & Giesen, 1992). On the short term, the optimal production size of a farm is determined by the short term costs graph. The available capacity of an enterprise is hence fixed, so only variable inputs can be helpful in defining optimal production levels. That is the point where the marginal costs are equal to the marginal income. The GTK_k lines represent the situation at different levels of fixed costs. According to the short term vision, a farm has the optimal herd size when it is positioned at the lowest point of the GTK_k graph (Fig.1). Hence, at situation one (GTK_{k1}) the Q^*K is the optimal herd size.

On the long term, the production capacity is indeed variable. When we draw a line through all short term graphs at increasing herd sizes, then we can draw a long term costs graph, given a certain level of prices and state of the art of technology. The optimal herd size then can be found at that particular point, where at the lowest per unit product production takes place on the long term. In Fig.1 this point is in situation two, at an output of Q^*L units.

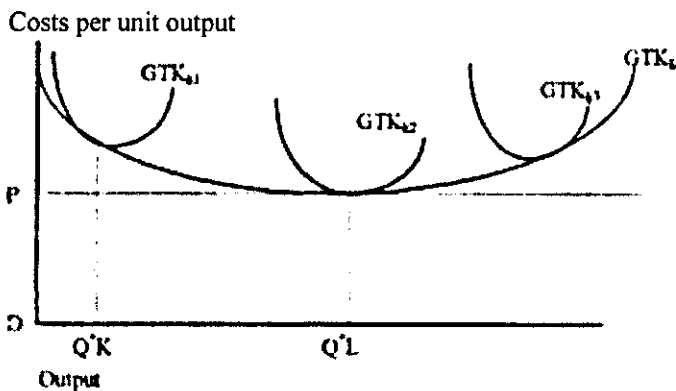


Fig.1. Optimal herd size on the short and long term (Dietz et al., 1988)
(The output is given per time unit; K= short term, L= long term)

The classical theory states that the GTK-graphs have a U-form shape like in Fig.1. This means that from O to Q*L scale advantages occur at an increasing herd size. However, further increasing herd sizes beyond the optimum lead to scale disadvantages, for example caused by increasing transport costs, greater complexity, or increasing costs for communication and coordination. In the modern theory the vision prevails that at larger production volumes the scale advantages will compensate or will be larger than the scale disadvantages. Therefore, the GTK graphs will be more like a L-shape than a U-shape. The optimum scale can then not be defined because profits still increase at increasing herd sizes.

1.5.3 Farm economic results at different herd sizes in Dutch dairy farming

In the Dutch dairy sector, many farm economic data have been gathered. Some organizations present a yearly review of farm economic parameters and such parameters are being compared over the years. These data can be accessed through internet (see Annex II). There are, however, hardly any data on large farms available. The results presented in this paragraph are based on a simulation model especially developed for larger dairy farms (de Jong, 2005).

The simulation model

The model simulates four types of dairy farms, variable in herd size. The first farm is a large family run farm; the other three are other, larger farms. A reference farm is presented as well. The main difference between reference farm and other farms is in the fact that young stock rearing takes place elsewhere and that production is not associated with land on these larger farms. There are 6 main modules in the model (income; feed; cattle health & breeding; manure; sustainable production resources; labour). For each module, the costs and income are calculated based on inputs. For that purpose, standards and guidelines for prices and technical issues have been taken into account in each module. Details are given in Table 1.

Table 1. Farm situation for reference farm, family farm and 3 simulation farms

	Reference	Family	Simulation Dairy Farms		
			Large 1	Large 2	Large 3
Milking cows (n)	112	112	500	1000	2000
Young stock(n)	66	0	0	0	0
Surface of land (ha)	66,05	1,5	4,5	8	14
Milk quota (kg)	909.540	889.328	4.264.544	8.673.300	17.710.000
Milk production (kg/koe)	8.150	8.150	9.095	9.315	9.625
Milk fat%	4,37	4,40	4,22	4,19	4,14
Milk protein%	3,48	3,50	3,46	3,61	3,37

Farm economic results of simulated dairy farms

Table 2 presents a summarizing total review of farm economic results of the different farms.

As can be noticed, the net farm income becomes better (= less negative) when herd size increases. Based on this Table 2 one can conclude that large scale dairy farming in The Netherlands yields advantages.

The costs per 100 kg milk on the three Large farms are substantially lower than on the family farm. Although the fixed costs and variable costs both decrease at increasing herd size, it are

predominantly the fixed costs which represent the proportionally largest share in this scale advantage. In the total income per 100 kg milk there are no detectable scale effects.

Table 2. Results per 100 kg milk, as derived from the simulation model (in euro)

	Family farm 112	Large 1 500	Large 2 1,000	Large 3 2,000
Results per 100 kg milk (including milk quota costs)				
Net farm results	€ 25,39-	€ 17,69-	€ 14,15-	€ 12,63-
Income/cost ratio	57	65	71	73
Net cost price of milk	€ 58,14	€ 50,34	€ 47,86	€ 44,90
Labour income	€ 17,93-	€ 11,87-	€ 9,23-	€ 8,54-
Labour costs	€ 7,47	€ 5,82	€ 4,92	€ 4,09
Quota income	€ 2,65-	€ 4,13	€ 7,52	€ 8,77
Quota costs	€ 22,75	€ 21,82	€ 21,66	€ 21,40
Return on investement	€ 20,51-	€ 13,58-	€ 10,17-	€ 8,77-
Costs of interests	€ 4,88	€ 4,11	€ 3,98	€ 3,86
Results per 100 kg milk (excluding milk quota costs)				
Net farm result	€ 2,65-	€ 4,13	€ 7,52	€ 8,77
Income/costs ratio	93	114	128	136
Net cost price of milk	€ 35,39	€ 28,52	€ 26,20	€ 23,50
Labour income	€ 4,82	€ 9,95	€ 12,44	€ 12,87
Return on investement	€ 2,23	€ 8,24	€ 11,50	€ 12,64

Due to a lack of data about costs for veterinary services and animal health care, these have been set at a normative standard of 80 eurocents per 100 kg milk (= 8000 euro per 1 million kg milk). Hence, there are no scale advantages for animal health. In the real world, however, such advantages can be expected. Certainly when veterinary farm advisory programmes are in place such advantages can be expected, for example, because performance analysis can be performed through parameters independent of herd size.

Regarding veterinary advice mainly the variable costs are relevant. These are given in Table 3.

Overall, scale effects are detectable within these variable costs too. Important areas within the variable costs for achieving advantages refer to feed costs and other costs.

The decrease of feed costs at increasing herd size is caused by the higher milk production per cow.

The fact that Large farm 2 shows higher feed costs is caused by the milk fat and milk protein figures on this farm.

Table 3. Variable costs per 100 kg milk for the different simulation farms (in euro)

	Family farm	Large 1	Large 2	Large 3
Number of cows	112	500	1,000	2,000
Variable costs per 100 kg milk				
Feed costs				
Roughage	€ 6,50	€ 6,08	€ 6,03	€ 5,88
Concentrates	€ 5,23	€ 4,98	€ 5,01	€ 4,91
Other feed costs	€ 0,05-	€ 0,07	€ 0,26	€ 0,07
Total feed costs	€ 11,69	€ 11,14	€ 11,30	€ 10,86
Animal health and breeding	€ 1,70	€ 1,53	€ 1,51	€ 1,49
Manure deliveries	€ 1,94	€ 1,95	€ 1,96	€ 1,96
Other costs	€ 6,00	€ 5,00	€ 4,00	€ 3,00
Total variable costs	€ 21,33	€ 19,62	€ 18,77	€ 17,31

Large farm 2 realizes high milk protein figures as compared to the other large farms; this strongly increases the protein demands in the ration. Because feed protein is expensive, this Large farm 2 shows higher feed costs.

1.6 Awareness and attitude

The *entrepreneur*-like dairy farmer is open for criticism and advises. Preferably such advises from reliable, trustful specialists are for free. This farmer visits congresses and seminars, uses internet, and has many informal contacts in his network and the latter are specifically useful to obtain the advice he is looking for. We should not underestimate the impact on these farmers of internet and globalisation of the dairy industry. A farm strategy is determined on the basis of, for example, contacts abroad and nationally, extension people, nutritionists, banking people, fiscalists, constructors, technological developments, field trials. Often these *entrepreneur*-like farmers have positions in the board of agricultural organizations, know many people from mechanization companies, a feed mill, or are members of an association of people with equal vision or with comparable positions in society. Often they keep themselves a mirror: is this truly the right direction for my business? Is this truly the best solution for my farm problem or farm? Is this decision advantageous to my farm?

On the basis of selected, tailor-made solutions provided by specialists they pass the decision-making process which is largely based on economics. They determine themselves whether feasibility is guaranteed in such advice. If not, then your input as a farm advisor will be less impacting. They also determine whether an advice fits in the long term strategy of the farm. If they decide that the economic benefits from the advice are great, they tend to assign a lower priority to issues like practical feasibility and the long term strategy. If, for an acute problem, an instant solution cannot be found or given, then they will actively look for someone who could give the solution, from wherever; they are prepared to pay for that. If such a person cannot be found or does not exist, then he will try something on his own.

Advises from the veterinarian (*variable costs*) are handled differently than advice related to e.g. purchasing a tractor. This difference is caused by perception of the farmer whether fixed costs or

variable costs are involved. Too often the veterinarian is considered a costs factor, while purchasing a tractor is considered an investment.

Costs of animal health care (comprising claw trimmer, animal identification people, veterinarian) are set at 1 to 1½ eurocent per kg milk. It is a pity that **curative veterinary costs (= variable costs)** are not separated from veterinary **advisory costs (= investment; fixed costs)** in farm accountants reports.

It is up to the farm advisor to demonstrate to the farmer that what is offered to the farmer is of interest to him and his enterprise. The expected benefit must be large so that the farmer includes this advisor in his team and pays for his activities. As stated before, there must be a positive “chemistry of interaction” between farmer and advisor (Van Dellen, 2004).

1.7 Behavioural economics

Low (outside) temperatures feel truly cold when you are used to warm (room) temperatures. But the same cold temperatures feel much less cold when you are used to them!

How much are you willing to pay to retain your voting right? And, how much money would you like to receive to refrain from voting? Usually, the amount for the first will be much lower than the amount for the second situation!

Why is a certain dairy farmer willing to pay his veterinarian for the treatment and advice to recover from a series of clinical mastitis cases, but is the same farmer quite reluctant to pay for a preventive udder health control programme that the veterinarian offers him afterwards?

This phenomenon refers to **choice behaviour**; with **decision-making under uncertainty**, and with preferences.

During the decision-making process both rational and non-rational arguments come into the picture (Rabin, 1998; McFadden, 1999).

The choice behaviour of people is namely influenced by

- perceptions
- impressions
- emotions
- attitude
- motives
- preferences

People are more sensitive to how their current situation differs from a certain point of reference than to absolute features of that situation (see for example the mastitis problem versus the udder health control programme).

People prefer a status quo rather than changes which possibly may lead to a loss of goods or money, even when those losses might be compensated for on the longer term (see again the mastitis problem versus the udder health control programme; the latter would decrease mastitis occurrence but would also increase milk yield).

This all refers to the Behavioural Decision Theory by Tversky & Kahnemann (Tversky, 1971; Tversky, 1974).

We have to deal with the elements presented above when we want to “sell” one or more components of our veterinary advisory programme to farmers.

Knowledge about these forenamed 6 features and utilizing them in our discussions with the farmer will help us in better marketing of our advisory programme.

II. The cattle veterinarian: a strengths and weaknesses assessment

In this chapter we give a telegram-style summary of the strong and the weak points regarding cattle veterinarians like could be collected in the field.

The following **strong points** for cattle veterinarians were considered:

- his relationship with farmers is based on trust
- such a relationship is hard to break down
- he has knowledge about health and disease
- he has actual knowledge about reproductive affairs
- he prevents a large proportion of disease losses
- one can always reach him; he is always available
- the veterinary training is highly esteemed
- it is a protected, professional association, no loose persons

The following **weak points** for cattle veterinarians were listed:

- his attitude is much too dominant in general, professionally in particular
- he talks too much and listens too little (poor communication)
- he does not work according to structured protocols; his advice is not structured; he does not provide clear working instructions
- he has limited knowledge about cattle nutrition and related issues
- he has limited knowledge about managerial affairs
- he has limited knowledge about dairy farm economics
- he has little to no knowledge about entrepreneurship and organizational matters on the dairy farm
- he has the public image of being too expensive (a.o. related to medicines)
- he tells his clients insufficiently about his fields of expertise or knowledge (no marketing knowledge)
- he does not indicate what he could contribute to the dairy farm
- he is little pro-active and hence too much in waiting (next to the telephone)
- he does not offer on-site training to farm workers
- there are too many personnel changes in the veterinary practice which may hamper the establishment of trustworthy relationships
- he is (maybe) not willing to invest in discussions with the farmer; he shows little empathy.

With the forenamed information from other paragraphs in chapter I and the current information in this chapter II we are now able to consider what needs to be changed or improved in cattle veterinarians in order to become a full discussion partner (and from there an advisory partner) to the *entrepreneur*-like dairy farmer.

Subsequently, we will try to indicate **how** this can be achieved.

III. Points of improvement for the cattle veterinarian

The trend in the dairy sector is towards scale increase (see also chapter I). The question is whether the veterinary service should be adapted to this development. How can a cattle veterinarian market his technical knowledge and skills at herd level to the larger dairy farms, to the entrepreneur-like farmers?

It is important to retain the strong points from chapter II and improve the weak points.

The design of a **general veterinary practice business plan** for the short term (1 year) and the longer term (3 to 5 years) is a first must. It provides all practice workers with clarity about direction and strategy of the veterinary practice.

An advantage of a written business plan is that emotions are shifted to backstage and therefore the plan becomes more rational. Moreover, a written business plan is easier to discuss with third parties, like advisors. What are exact targets; what is the methodology to achieve these targets; when should it all take place; who is responsible for what actions; which tactics would be best; is every veterinarian in the practice committed to the plan?

These are all questions to discuss and to consider among the veterinarians and other workers in the practice; agreement should be reached.

Several organizations can assist the veterinary practices by providing tools and support for designing practice business plans (e.g. in The Netherlands the LEI in The Hague and AUV in Cuijk).

Maximizing the rate of success of this business plan can be stimulated by activating and acting along the following 7 steps:

1. Optimize the internal communication in the practice. This step is paramount before other steps to avoid problems down the line. External coaching can be sought to tackle this problem.
2. Conduct a market analysis among clients asking for their wishes and needs (SWOT; segmentation of clients; empathy; analysis of existing needs and needs to be created). Formulation of specific (tailor-made) products or services for specific client groups.
3. Design of a Plan of Action for the shorter and the longer term (what to do; how to do it; who is responsible for execution; what should when be delivered; how to evaluate?). Such a Plan should be designed in a SMART way (= specific - measurable - acceptable - realistic - time-related). Be aware of the fact that for new products and services there must be a demand developed, which takes several farm visits and discussion rounds! It could be a good investment to - after initial talks - perform a SWOT assessment of the farm performance together with the farmer for free! Discuss the outcome of this SWOT together with the farmer: is there agreement; where are priorities and why; does the farmer like to take action?
4. Internal and mutual practice training regarding the methodology to raise the proper questions (= not yes/no answer questions), to listen actively, to summarize discussions, to control the progress of discussion. Veterinarians commonly deliver solutions for a problem which the farmer does not see (yet) or has not adopted. This issue is highly crucial in veterinary practices!
5. Suppressing the (expression of available) technical knowledge of the veterinarian towards others.
6. Investment in developing social communicative skills and marketing qualities, for example through trainings and courses, often outside the veterinary sector.

7. Optimize external communication through analysis of demands of client groups; development and PR of new demands. Invest in adequate oral and written communication. Increase the number of contact moments with the farmers and put regularity in it (study groups; seminars; farm visits; telephone calls; E-mails etc). Raising guided questions to make the farmer detect for himself that something might be or become a problem for him is most probably a greater art than providing solutions!!

In order to realize this, there are several **pre-conditions** to consider:

Operational matters, like dehorning of young calves or claw trimming, must be separated from the advisory visits; make new appointments to deal with those curative or clinical handlings.

Be clear to the farmer about the activities you are dealing with: when are you busy with advisory work and when with curative work.

Switch your mobile phone off as soon as you start making your farm visit. It is quite denigrating for a farmer to find out that obviously the person at the other end of the telephone line is more important than he is!

It appears that a new structure must be developed for the declaration of costs and fees for veterinary advisory activities. This would open the opportunity to distinguish between curative costs (e.g. sick cows) and advisory costs. Moreover, it can then be made clear how advisory costs are built up per product or service, or groups of products and services, with or without price reduction, with or without declaration of hours spent on a certain problem analysis or consultation of other specialists at the practice office.

To shift the perception of veterinary costs from variable costs into investment costs (fixed costs) we may think about subscriptions for veterinary products and services. This product may comprise several components, depending on the needs, wishes and perceptions of the dairy farmer (see also paragraph I.7 behavioural economics).

IV. Options to define and to market advisory products

This chapter comprises of several suggestions to determine the processes in your organization and to determine why plans lead to success or disappointment.

- General issues
- The veterinary practice as an enterprise
- Choices of veterinary practices regarding their products and services
- Communicative skills
- Communication with the client
- Marketing in more detail

IV.1 General issues

The veterinarian who wants to function as a farm advisor or coach should be able to understand entrepreneurship, be a full discussion partner, be able to conduct proper analyses, be an authority at the same time, be skilled to make people do something, and be commercially educated. He should adopt the principles of marketing.

Marketing by the veterinarian comprises the following elements:

- improvement of social communicative skills through methodology of raising the right questions in the proper way, discussion techniques
- acquire insight in obtaining qualities in non-veterinary areas
- address marketing in a more technical way (marketing plan)
- application of the forenamed in daily practice and field
- increase creativity of the veterinarian
- conduct a regular analysis of needs and wishes of client (groups)
- develop new demands in clients

The results of these action points should be that at the same time the position of the veterinarian and the pleasure in his work improves. More opportunities become visible and are being dealt with.

Know where you stand in the sector as a veterinarian and veterinary practice!

The dairy chain is a complex one, more complex than other chains; there are many links. From the producer of the raw product up to the consumer there are many players in the field. For an optimal service to the *entrepreneur*-like dairy farmer, it is of utmost importance that the veterinarian has knowledge of and working contacts with these players to market his products and services. The power of such cooperation in the sector will provide a better result for every player.

IV.2 The veterinary practice as an enterprise

The veterinary practice is a commercial business due to the fact that the veterinarians function as independent people in a certain branche or sector, for own account and own risk = *entrepreneur*)

Next to veterinary technical aspects, the current veterinary practice can be characterized by many managerial issues.

Practice management here means the conducting and governing of the practice.

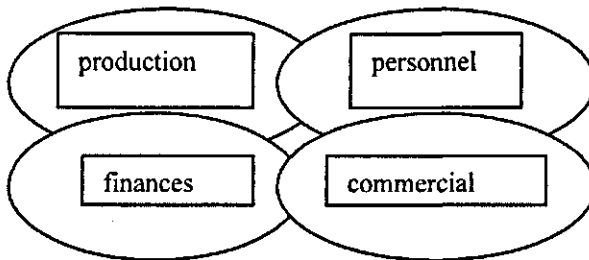
Preconditions for such management are that

- there must be strategic insight into the practice (possibly hired from outside)
- there is a good network of contacts with the outside world
- coaching of all co-workers can be done
- feed back can be given to co-workers in the proper way
- there is knowledge and experience regarding conflict handling
- communication takes place at a high quality level.

Furthermore, for a proper execution of management tasks the veterinary practice must formulate answers to the following questions:

- What tasks and activities must be assigned to the management?
- What would be the benefits of these to the practice?
- Which knowledge, skills and attitude are needed for the execution of these tasks and activities?
- What is the time-consumption of these and is this considered worthwhile?
- Who wants and will perform what tasks in this context?
- How can you create the right teamwork (TEAM= Together Each Achieves More)?

Management of a veterinary practice regards 4 main areas, which are interrelated:



One element of personnel management regards, for example, the question how the continuing education plan for veterinarians must be organized for the coming 3 to 5 years, taking into account the gaps in the current organization regarding

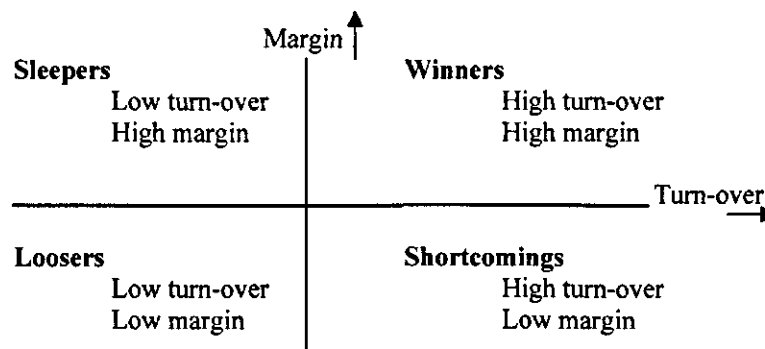
- personnel selection and hiring
- personal development plans
- planning of careers
- needs for continuing education → who needs to go to what course when and why; and how are these needs and courses to be made complementary!

It is useless when all veterinarians in the practice would follow the same courses (unless these are compulsory). It is much more cost-effective to make a whole practice planning meeting the needs and demands of the practice, and - if possible - preferably but not necessarily meeting the interests of the individuals. This implies that a certain differentiation must be planned: one will focus more on udder health and milk harvesting, while the other will focus more on infectious diseases, and again another on communication and marketing. Such a differentiation will be beneficial to the clients but also to the practice and the individual veterinarians.

IV.3 Choices of veterinary practices regarding their products and services

Veterinary practices usually have various products and services. Each practice should ask itself regularly whether the current products and services still meet the demands of their clients, and whether these still fit in the business plan of the practice. Next to profits and margins, there are also other considerations, like emotions, investments, strategy, long term expectations etc which play a role in decision-making about continuing a service or product or stop it.

The following Figure schematically represents the position of the services of an example veterinary practice or veterinarian (Van Dellen et al., 2004).



For each veterinary practice the considerations in each quadrant will be different and unique! What could be a “winner product” could be a “loser” in another practice which should be stopped. For example, a companion animal urgency clinic. The reason of existence for this clinic is the number of acute patients with urgency.

In comparison, there are several other companion animal clinics in this city which have considered the treatment of acute urgency cases as loosing on the job and have deleted this service from their clinic.

Other examples of considerations about sleepers, winners, losers and shortcomings could be:

- Sleepers: the treatment of subclinical mastitis in full lactation;
- Winners: veterinary advice on reproductive performance;
- Losers: treatment of urgent acute cases like milk fever;
- Shortcomings: general veterinary medicines.

Suggestion:

Take the forenamed figure and list for yourself or your practice in which quadrant the different products and services could be positioned.

In addition to the forenamed “classical” examples there are other, more modern products and services in a bovine veterinary practice, e.g.

- Design and delivery of a farm-specific Hygiene-protocol
- Design and delivery of farm-specific protocols in the area of infectious diseases (Biosecurity Plans, BAMN 2000), udder health, claw health, replacement rearing. These commonly comply with rules set for Good Agricultural codes of Practice as laid down by the FAO (FAO, 2003).

- Design, implementation and support of quality risk management programmes on a dairy farm (SWOT assessments; HACCP-like programmes, Cannas da Silva et al., 2006)
- Design and execution of certain on-site training programmes for farm-workers.

For practice management it is important to realize that products and services have a certain **level of elasticity**. An example of an elastic product is a flight: the more the price decrease, the more demand there will be. An example of an inelastic product is open heart surgery: irrespective of the price, the supply and demand will be same. The products and services that you want to offer as a veterinarian can be distinguished in the same manner; price policy could be adapted to this picture.

Using **segmentation** of products and services which the veterinary practice is marketing you can design a practice business plan, in which the accompanying strategy and tactics are comprised. In this way we can plan and execute the activities and profits, and are we directing our own business. We have to realize that several forces are active in and around our practice. Among these forces are forces from society (e.g. public aversion against bio-industry; public demands for better animal welfare), technological factors (automatic milking systems) and regulatory issues (e.g. laws; EU directives and regulations; quality assurance demands). The veterinarian cannot influence such factors, but he is confronted with them and should develop an opinion about them. In time anticipation on such issues and changes is a good strategy in general.

An **analysis of environmental conditions** such as named above is crucial to a veterinary practice: know where you stand and stand for. But also: know what you can perform and what not; show that also to your clients. Keep a close eye on developments in the market in the broadest sense, and weigh whether or not you have to follow such developments, and what consequences of such a choice would be for the veterinary practice in the shorter and longer term. Such an analysis is useful too for defining management activities in the practice appropriately. The latter will be addressed in the following paragraphs.

IV.4 Communicative skills

This is not the easy talking, but rather comprises elements related to internal and external communication like

- acquiring skills in techniques to raise the proper questions (not questions leading to yes/no answers)
- discussion and meeting techniques
- skills to handle conflicts
- the ability to listen carefully to others
- coaching of co-workers

We are encountering these elements when we talk business with the dairy farmer in order to detect what he is expecting from the practice and what our added value could be for him (**analysis of demands**). When we could detect that, we would be able to define a product/service which suits him because it meets his demands, goals and expectations. In that case we are able to charge him for all costs regarding our activities. The message must, however, first be communicated internally on the practice (internal communication) before we communicate it with him (external communication) (Eelkman-Rooda DC, 2006).

About preferences and needs

Each human being is sensitive to one or more particular needs.

The American psychologist Maslow has clustered the needs of human beings to eight **primary needs of people**:

Looking for security	<i>Not looking for risks</i>
Togetherness	<i>Following trends</i>
Ease and comfort	<i>Handy and clever</i>
Progress	<i>Technological improvements</i>
Innovation	<i>Trend-setting</i>
Delight	<i>Joy of labour</i>
Exclusiveness	<i>Seeking prestige</i>
Gaining advantage	<i>Profits/money</i>

When you like to proceed with the communication message as effectively as possible, then it can be advised to investigate for which primary needs your communication-partner or customer is sensitive. Most clients in a veterinary practice are treated similarly, independent of their individual needs. If you want to achieve a maximum number of satisfied clients in your practice, then you should investigate the individual needs of each individual client.

IV.5 Communication with the client

What happens in the subconscious mind of your client during the communication process?

By using the **AIDA formula** you are able to measure where the client is positioned in the communication process.

The AIDA formula:

- A: Attention → develop the client's attention for the product/service
- I: Interest → develop interest so the client wants to know more about it
- D: Desire → there is a strong desire to choose the product/service
- A: Action → the client indeed takes the product or service

Depending on the nature of a product or service, we can distinguish simple and complex communication. In more complex communication it often happens that the application of the AIDA formula needs several contact moments. Then it becomes paramount to realize where in AIDA you have left the communication the last visit; only then the proceeding in the process is guaranteed. An example of a complex communication regards the marketing of veterinary advisory programmes. It usually does not yield results in one discussion; more preparatory visits are needed. And when you want to expand such programmes in the field, you will need a thoroughly prepared plan and a good monitoring of the proceeding in the communication process in order to achieve the goals set. The too early offering of a solution (e.g. the advisory programme) during the communication process leads to a poor result and poor feeling at both sides.

Leading a meeting, meeting techniques, presentations before groups, handling conflicts, analysis of needs among farmers, advisory & coaching, approaching market demands

All these topics are addressed in many [short duration] courses which are given by professional organizations yearly. Therefore, they will not be further elaborated in this context.

IV.6 Marketing in more detail

Marketing should focus on both **internal practice** and **external affairs** (Van Dellen et al., 2004). Internal marketing addresses efficient team-work; in the previous paragraph this has been discussed. External marketing should only be started once the internal marketing process was passed successfully. If not, then the results of external marketing will in general be poor and very demotivating for those who took the initiative.

In external marketing the following components are considered:

- Identify the different client target groups
- Define the composition of the package of instruments by which clients are approached (products/services; distribution means; communication; process)
- Determination of the marketing goals (turn-over; profits; market-share)
- Definition of the services to be delivered (nature; customers; tailor-made packages; modus operandi)
- Conduct of a SWOT analysis of clients' farms.

Target groups can be characterized on the basis of *socio-economic factors* (age; income level; education level; profession; status; professional objectives), *geographic features* (region; climate; land), *psychological aspects* (spontaneity; creativity; feel of honour; status) and of features related to *purchasing behaviour* (brands; sensitive to prices and service; motivations for demanding products and services). These issues can be put into **profiles** (see also EASY-VET, a herd health management support manual, published by AUV/ Faculty of Veterinary Medicine/ KNMvD).

Marketing of services is determined by the nature of such services (e.g. veterinary advisory programmes for supporting herd health management on dairy farms or for supporting quality risk management on dairy farms), the fact that this should be based on a continuity in the relationship with the clients, and that these services must be tailor-made to client needs or needs to be developed. In other words, such services must have **added value** for the client. Participation of the client in such services is not always decided on rational grounds (see also chapter I.7). A dairy farmer will in general be more and earlier motivated to participate in such a service when he is encountering problems; and then he is willing to pay for such services; often we have seen that these farmers are less willing to pay for services to prevent such problems (see under chapter I.7). On the other hand, we observe more and more that dairy farmers are willing to pay for screening services, that is, when there are no overt problems on the farm and farmers want to have a continuous programme of second opinion and monitoring of animals and farm conditions to execute this second opinion. Through full empathy of the veterinarian in the true problem of the farmer, the veterinarian is able to change his public image from the (variable) cost component to the investment component (*problem solver; advisor/coach*), once the spontaneous contact moments have been passed. Through intensification of contact moments with the *entrepreneur*-like farmers and showing empathy, the relationship and interactions with these farmers will improve; price of the veterinarian's service or products then comes no longer on the first place!!

It is very sensible to design a **marketing plan** using the forenamed points of attention. Below the goals of such a marketing plan are presented, and we will address several components from the so-called **marketing mix**. There are many websites, books and courses available on the issue of marketing; therefore, we will not elaborate in full detail on these issues.

The goals of a marketing plan are to define

- The overall strategy (what to be done?) for the next year and 5 years
- The tactics (how should it be done?) should accompany this strategy
- Task distributions (who should do what?)
- Evaluation and adjustment each quarter of the year
- Evaluation of the goals (have goals been achieved?)

The marketing mix (= the 4 P) refers to the tactics:

- Product
 - Which product/service package does the veterinarian supply
- Place
 - Which distribution channels are chosen
- Price
 - the benefits for performances conducted (product/service) adapted to the internal and external conditions
- Promotion
 - Sum of the planned activities in the coming year

In veterinary practices position and personnel are also important aspects of the marketing mix.

- Position
 - where in the market do we stand as a veterinary practice
 - where are we heading for in the coming 1 to 5 years
 - how do we want that the clients consider us
- Personnel
 - who is performing which task and when

The design of the marketing plan for the shorter (1 year) and the longer (5 years) term provides all co-workers in the practice with clarity about direction and strategy which will be followed. It also comprises who will do what and when and how.

V. Conclusions and recommendations

The veterinary practice and the practitioner have to invest in new skills to be a full advisory partner of the entrepreneur-like dairy farmers. Due to the large variation between practitioners, a single and generally applicable method cannot be given. We have produced, however, a Five Points Action plan. Every practitioner has to define for himself, what his current position is, and which position he wishes to obtain in the field, what he needs to invest to that purpose at which priority and how, in order to become that full discussion and advisory partner for the target group.

Plan of Action (5 steps) to convert yourself from a curative or herd health veterinarian to a veterinary advisor/coach:

- Step 1** Conduct a self-evaluation using the SWOT Table from paragraph II in the document. What are your strong and what are your weak points? Next, you make an inventory about the extent to which you are adequately familiar with the features of an entrepreneur-like dairy farmer. Using these outcomes you can determine in which areas you need to follow continuing professional education courses (see also the Table at the end of the document). It seems quite obvious that the first courses will be in the areas of communication; conflict handling; marketing, organization & management.
- Step 2** Start with following the courses as determined under [I]. Subsequently, try to practice the issues learned from these courses as much as possible on a - previously selected - dairy farm of which the farmer has earlier stated that he is willing to cooperate in your new strategy and to serve as your sparring-partner.
- Step 3** Select a dairy farm where you could start with questioning the farmer about his enterprise-strategy, -goals, -methods to achieve his goals, and furthermore, about his farming goals, strong and weak points on the farm, and his needs and wishes regarding farm advice. Train yourself in properly applying the AIDA technique on this selected farm (sparring partner).
- Step 4** Again conduct a self-evaluation using the features named under “Features of a veterinary advisor/coach” in the last Table at the end of the document. As long as there are too many elements lacking from your “profile”, you will be forced to invest further in the development of your skills and knowledge. A too rapid, too early implementation of advisory activities will only yield negative results.
- Step 5** When the previously named steps have been passed with good result (that is, when deficiencies in the profile have been tackled sufficiently), only then you can make a start with the implementation of your advisory/coaching work in practice. This means that you have to search for farmers who are suitable for marketing your advisory products. After this selection you can enter the advisory/coaching track which is addressed in the document. When you have succeeded to bind a few farmers to you as a client of your advisory practice in a sustainable way, only then the track is successful. If not, then you have to make one or a few steps backward in the plan of action named above, and restart from there.

In the following section (Table 4) we have - as a summary - created two schematic listings of characteristics of both the *entrepreneur*-like farmer and the veterinarian respectively. In between

there are some examples of course and training elements which could help bridging the gap between the *entrepreneur*-like farmers and the veterinarians.

The advising/coaching veterinarian must realize that he enters a demand-market and no longer deals with a supply-market, as far as entrepreneur-like dairy farmers and farmers from large family-run dairy farms are concerned. A proper price-quality ratio of the services and products provided by the veterinarian on request by the farmer is a contributory factor to the overall success.

The authors hope that by providing the different issues and ways towards solutions in this paper, the veterinarians will be better armed and equipped to prepare, enter and continue the process of veterinary coaching and advice to the dairy farmers. Given the knowledge and skills of the practitioner, we expect that the current changes in the dairy sector most of all provide the practitioner with opportunities. It is, however, paramount to timely change the direction in the veterinary practice.

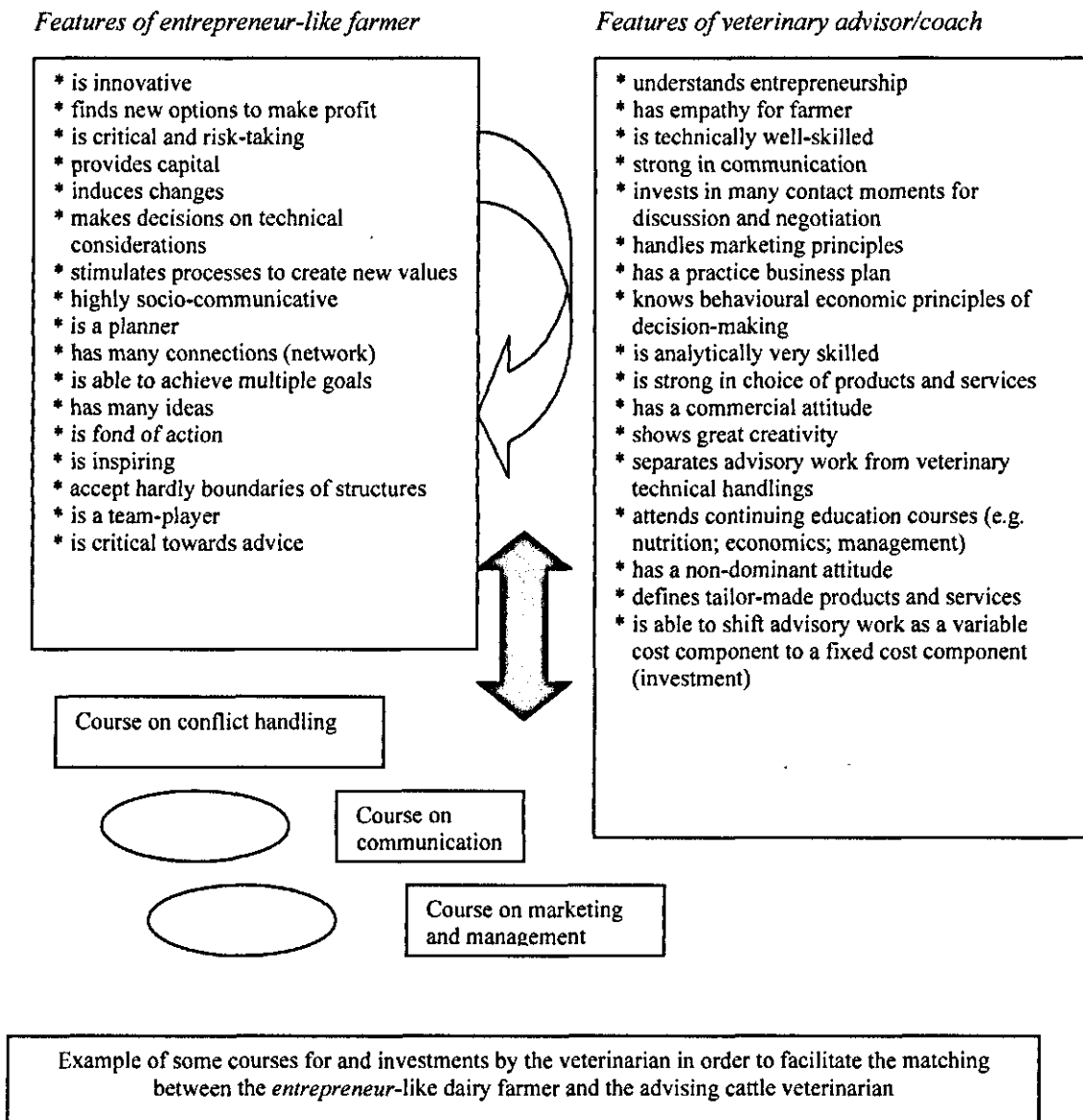


Table 4. Schematic representation of characteristics of both entrepreneur-like dairy farmers and veterinarians, as well as means to bridge the gap between them.

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ANNEX A

An example of parameters on farm economics as handled by EDF

Reasons for differences in Costs and Returns - EDF Analysis 2003
(Values in euros without VAT)

	Dairy Farm X	EDF average (158 farms)
Farm Data		
No. cows	139	133
Milk output (FCM/year)	1151	1013
Returns from dairy	93%	92%
Growth of own quota	68%	67%
Percentage of quota rented	0	5
Feeding system		
Forage area (ha)	93	99
Grassland (% of forage area)	50	60
Land rented (% of forage area)	62	43
Grazing or 100% indoor	G	-
Grass intake (kg/day)	40,6	34,1
Corn silage intake (kg/day)	25,0	19,5
Concentrate intake (kg/day)	5,6	6,0
Concentrate intake (tons/cow/year)	1,55	2,30
Milk out of non-concentrate feed (kg FCM/year)	5162	3231
Prices		
Milk price (per kg FCM)	33,1	31,7
Cull cow price (per kg)	0,5	0,7
Male calf price (per animal)	84	119
Land rents (per ha)	440	311
Quota purchase price (per kg)	17,0	13,9
Quota rent price (per kg)	-	0,08
Concentrate price (per ton)	160	190
Productivity		
Labour productivity (KG FCM/h)	218	162
Land productivity (tons FCM/ha)	12,4	19,9
Capital productivity (kg FCM/1000 euro)	1760	1976
Capital input (per cow)	4701	4617
Milk yield		
Milk yield	8271	7832
Fat content %	4,5	4,1
Milk protein content %	3,5	3,3
Herd management		
First calving age (months)	24,0	26,3
Time between calvings (days)	390	396
Average age of cows (years)	4,0	-
Culling rate dairy cows	31%	31%
Heifer production	105%	125%
Milking system (2 times; 3 times; robot)	2 times	-

Reproduced by courtesy of EDF

ANNEX B

Websites

[1] Some websites for farm economic parameters on dairy farms

<http://www.verantwoordeveehouderij.nl/index.asp?projecten/nieuwehouderijsystemen/slimexperimenteren/eenvoudlagekosten/qsik/index.asp>

www.lei.dlo.nl/nl/content/agri-monitor/pdf/juni2004Melkvee%20teleurstellend%202004.pdf

www.lei.dlo.nl/binternet/showtable.exe?aktie=vindtoon&bj=1996/97&ej=1999/00&language

www.lei.dlo.nl/publicaties/PDF/2001/1_xxx/1_01_02.pdf (costs of animal healthcare)

www.lei.dlo.nl/binternet/showtable.exe#3

➔ check the internet through search machines under key words “farm economics”

[2] Some websites and recommended literature about marketing and training

www.zibb.nl

www.envision-sbs.com

www.kvk.nl

www.dairyworks.com

➔ check the internet through search machines on key words “marketing”

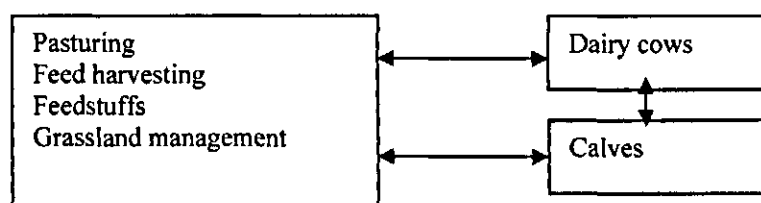
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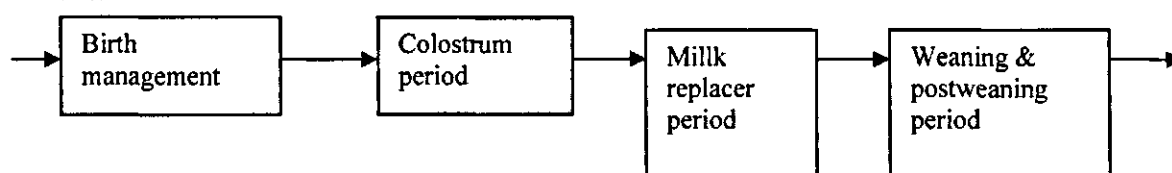
ANNEX C

Example of an elaboration of an organizational plan for calf rearing in 3 steps in order to develop operational working protocols:

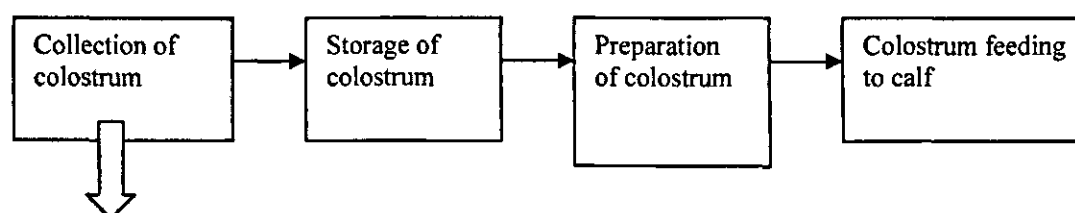


General farm organization with 3 major, mutually interactive, business units.

Young stock rearing can be further developed from here; for example, for the first few months of life:



Subsequently, the colostrum period can be further defined:



Define the operational management activities for each component of the series above:

1. define the goals for colostrums collection (quality; quantity; hygiene)
2. determine which activities must take place (what; how; with what; who)
3. set the critical management points for [2]
4. define how evaluation of [2] and [3] take place (technical parameters)
5. define what to do if adjustments are needed (other methodology)