

So, you want to be a dairy consultant...

J. Bennett, DVM

Northern Valley Dairy Production Medicine Center, 900 North Wabasha, Plainview, MN 55964,

Abstract

Dairy veterinarians may desire to add, or increase the amount of, consulting to the list of services they provide. To accomplish this goal, veterinarians will need to develop a consistent consulting process. Once the problem has been identified, the next step is using data and observations to create a picture of the dairy's current performance. There are a variety of ways to acquire, collect and analyze data. The next step in the process is identifying bottlenecks. After the consultant has identified bottlenecks, a report is typically prepared and presented to the client. Dairy consultants may choose to consult on almost any part, or all parts of dairy systems. A number of opportunities are available today, and new opportunities will likely develop in the future.

Definitions

What is a consultant? One definition is: Someone who aids others at their request...and uses their expertise, knowledge, competence and skills to improve others' conditions, helping them exploit opportunities, resolve a problem, or just improve performance. Much of what dairy veterinarians do in practice today could be included in this definition. However, successful consultants strive to produce lasting change in their clients' business. This is accomplished by helping to increase the organizational level of effectiveness. Indeed, increasing the organizational level of effectiveness may be the ultimate goal of consulting.⁶ Successful dairy consultants strive to help their clients make lasting change that help businesses meet their goals.

Consultants may be divided into the categories of "external" or "internal".⁶ External consultants are typically self-employed, or are employed by someone other than the firm seeking consultation. Businesses typically seek out external consultants because they do not have the knowledge or skills to solve problems available in their own workforce. Internal consultants, on the other hand, work for the business that needs a consultant. An information technology, or "IT" consultant who moves across the organization to solve information technology problems is one example. However, for the purposes of the topic of dairy veterinary consultants, we will consider a dairy herd's regular veterinarian, who very likely provides consulting services on an ongoing basis, to be an internal consultant, because he or she is working on a regular, continual and often intense basis to improve the organizational level of effectiveness of the dairy, and because he or she is often part of the culture of the dairy. For this discussion, an external dairy veterinary consultant is a consultant who visits a dairy, once, occasionally or regularly, who is not part of his or her regular veterinary client list. An external consultant is not part of the dairy's culture, or at least not at the beginning of the relationship.

Becoming an external dairy consultant typically presents greater barriers to the veterinarian than becoming an internal consultant. A veterinarian can ease into an internal consulting role while learning more about how a particular farm operates and while developing a trusted relationship with the

management team of the dairy, a veterinarian wishing to be an external consultant often has to do everything at once, including meeting the owner or managers, selling one's expertise and experience, visiting the farm, understanding the request, investigating the problem and suggesting solutions. For most dairy practitioners, becoming and being an external dairy consultant is harder to do than being an internal consultant. It requires additional skills. It is harder to maintain an ongoing relationship with a consulting client than a regular veterinary client. It may require additional marketing, and the market is much more limited. Thus, the focus of this presentation is becoming an effective external dairy consultant. However, it needs to be said that many of the tactics and tools used in external consulting are the same as for internal consulting, so there will be some overlap in the following discussion.

About the author

I am a founder of Northern Valley Dairy Production Medicine Center. Located in Southeastern Minnesota's dairy belt, our practice is not unlike most dairy practices in that we work for progressive producers located in a relatively short distance away from the center of our practice area. However, for at least 30 years, somewhere between 10 and 40% of my billable income has come from outside consulting. I have consulted for dairy farmers and all varieties of other agricultural professionals.

The process of consulting

First, let us look at the process of consulting. Indeed, there needs to be a process.³ A process is simply a set of steps that when completed, produce a result. In the author's opinion, a consistent process should be used nearly every time, much like a consistent physical exam is used to diagnose disease. The process of consulting might look like what is shown in Figure 1.

The point is that there needs to be a pre-designed, understood process as integral to the method of consulting, rather than a happenstance develop-on-the-fly approach. My consulting process began to develop following one or more conversations with John Fetrow, DVM, who was a faculty member at the University of Minnesota College of Veterinary Medicine. Dr. Fetrow suggested a systems analysis approach that split the dairy into 6-10 systems, such as: production, reproduction, udder health, animal health, environment and facilities, nutrition and young stock. Each system was examined using a process similar to what is describe above, and then recommendations were formulated from those examinations prioritizing ideas that represented the most significant bottlenecks on the dairy. This method is very similar to what was sometime later popularized by the dairy challenge competitions at the collegiate level. Around the same time, Dr. Fetrow became well known in dairy veterinary circles for developing ways to evaluate and monitor performance on dairies using spreadsheets. He was perhaps the first prominent dairy veterinarian to develop monitoring spreadsheets utilizing DHIA records. A variety of Dr. Fetrow's spreadsheets became tools in developing my own consulting

process. Indeed, Fetrow's system analysis method is still what I use today on almost every consulting visit. The heart of this method involves examining the various systems to paint a picture of the operation.

Painting a picture of the dairy

There are three tactics used to paint the picture: 1) Evaluate data and records; 2) Observe and record observations while on the dairy; 3) Interview and record. Evaluating data and records usually means transferring data into a different format than it may be presented. Figure 2 shows one version of a spreadsheet I use to collect and present information. Most of the data shown on this sheet can be found in DairyComp 305, if a DC 305 file is available. It is essentially a table of key performance indicators, or KPIs, with monthly and annual columns. Where appropriate, rates are calculated. This spreadsheet is also used for our practice's own clients and is presented weekly or bi-weekly to the client. The KPIs are organized by fresh events, herd events, udder health, reproduction, and young stock. Goals are presented on the right side of the table. Rates are calculated by using different denominators. Fresh cow events use number of calvings; herd events use average lactating and dry cow herd size, and young stock events use the number of live female calves born. While the sheer amount of data on this page may look intimidating, the process of updating one month's worth of data typically takes only 10-15 minutes. There is a separate page for data entry; Figure 3 is an example. Data cells are arranged by Dairy Comp 305 command to make entry faster. Of course, if one is entering data for the first time for any particular dairy, entry of one year's data will take considerably more time. This spreadsheet serves to paint a picture of the health-related systems of the dairy. A different but similar spreadsheet can be used to evaluate and present production information. Having access to data such as these prior to actually visiting a dairy for the first time can be valuable for the consultant to refine observations made on the day or days of the visit. These data are also valuable for generating discussion with stakeholders on the farm.

Sources of data

Where does one find data to set goals? Ultimately the goals belong to the dairy, not the consultant, so of course, interviewing stakeholders is part of the process. However, often dairy producers may not know what goals are appropriate or possible for many health-related KPIs. One can find some benchmarking data in the dairy literature, but there is no one source available to address all the KPIs on the page. Another option is to use one's clients' data to create a benchmarking dataset. Northern Valley Dairy Production Medicine Center developed such a system nearly 20 years ago. Data is collected and updated annually. A report is prepared that shows summary data for each individual herd, but the identity of each is kept confidential. One goal of this effort is to present allow farms to benchmark themselves against others, but another is to learn what is typical performance on a set of farms, and what is possible performance. This information can then be used to help farms develop their own goals for various KPIs. Figure 4 is a screenshot from page one of our 2020 analysis. We measured 70 different parameters in 2020. Data represents approximately 12 months of information covering the time period from mid-2019 until mid-2020. The parameters change somewhat from year to year depending on what is important. For example, heifer inventory has become of more interest to clients since most farms now try to raise fewer heifers, so we have added columns related to that. We also

calculate the mean, median, 25th and 75th percentiles for each parameter. For the 2020 analysis, 70 parameters were measured within the general categories of: Inventory, Demographics and Culling, Reproduction, Young Stock, Milk Quality, Production, and Health Events.

One can also look at trends over time, such as in Figure 5, of diseases by year. Note the great progress in reducing the rates of displaced abomasum, retained placenta, died (adults), twins and stillbirths over 14 years. This type of graph is useful to demonstrate that to be competitive, dairies need to practice continuous quality improvement, because it is clear that their neighbors are. This kind of information helps the consultant to drive home this point. Perhaps the following graph of pregnancy rate and conception rates over time in Figure 6 might be useful in demonstrating how rapidly and consistently pregnancy rates have increased. The other interesting conclusion is that almost all the gains in pregnancy rates have been due to increases in conception rates, because the lines remain relatively parallel over time. A dairy with a 35% conception rate might have been average in 2004, but today is in the lowest 10th percentile of farms.

Finally, Figure 7 shows changes in culling and average age in dairy herds. Note that both median and mean culling rates peaked at around 40% in 2013 or 2014, and have declined by about 5%. The average age has not shown as great a change however. We suspect that the average age will continue to rise as smaller heifer inventories result in lower culling rates for some time. Farms that are raising fewer heifers will need to adapt to a system where older cows are kept longer on the dairy, or they will have to purchase replacements.

There are other sources of data available. One can find journal articles that provide data for a number of similar parameters. *The Journal of Dairy Science* is a great reference, and has been a favorite monthly read for me for many years. A third source is seminars and educational presentations. In particular, AABP preconference seminars have been very valuable. For example, Figure 8 is a screenshot of a document taken from a pre-convention seminar conducted by Garret Oetzel, DVM, PhD, and the seminar was about working in the fresh pen. The spreadsheet provides information about incidence of a variety of fresh cow disease, and other objective outcomes.

Walking the dairy

Numbers and data are very useful to paint a picture of the dairy. However, it is always necessary to walk the farm to collect observations, and to interview farm staff for additional insights. Most dairy owners and managers seem to love showing their farm to outsiders, and love talking about their cows and their facilities. If the consultant is not on the farm on a very frequent basis, the farm should be walked at every visit. The walk-through should be comprehensive. The consultant should try to see as many components of every major system possible. While it may be tempting not to walk some distance to view a silage pile on a cold day, for example, one never knows what important observations might be missed if not viewed in person. The walk-through can be an excellent time to interview employees regarding problems they see within their respective areas of responsibility. The walk-through also be used to point out physical factors that may be affecting performance. For example, a measuring tape demonstrating that a free stall loop is mounted too high or too low is more demonstrative than just an observation and statement. Occasionally, the walk-through can also be

used to teach. Perhaps demonstrating how to give high volume fluids intravenously to newborn calves, or how to properly dry a teat end, or calmly move a cow, for example is best done while working with key employees on the walk-through. Sometimes one may need to conduct additional interviews of key employees after the walk-through is completed. Based on examining the data and visiting the farm, the consultant may find it necessary to return to the dairy to more thoroughly investigate particular areas. One might choose to perform a milking time analysis on a different day, for example.

Identifying bottlenecks

The next step in the consultative process is to identify bottlenecks. Almost always, the consultant can accomplish most of this by examining available data prior to the farm visit and asking questions and making observations during the walk-through. Alternatively, one may need to spend an hour or two at the end of the visit to make more detailed analysis. Bottlenecks are simply things that reduce the flow of outputs, just like a clamp on a hose. One needs to find the biggest bottlenecks first, because the small ones are not yet significant. After correcting the big ones, the small ones will become more significant. However, a list of significant bottlenecks should be formulated by the end of the visit if possible. A subset of any bottleneck is the process or processes used that affect the bottleneck or are affected by the bottleneck. Thus, a basic understanding of process management is needed by the consultant. Simply put, a process is a list of tasks, that when performed in sequence, produce a result. Processes are a way to organize work, and almost all processes are part of a larger system. All work is done within a process. The key to effective work is to trust the process. For example, a consultant investigating a pre-weaned calf problem would be well advised to look at all the management processes that are involved with raising calves, such as mixing milk, feeding milk, cleaning bottles, weaning calves, feeding grain and water, etc. There is a wealth of processes involved. Looking for a bacterial cause of disease may be inappropriate when milk is being fed that is too hot or too cold, or is fed at irregular intervals, for example. The other important concept regarding processes is that one can predict the source of a problem based on the consistency of the results. Reneau⁴ showed that herds with consistent, but high somatic cell counts, typically performed processes consistently, while herds with highly variable average somatic cell counts typically performed processes inconsistently. Simply put, the problem in the first case is the wrong process, while in the second case it is poor compliance to the process. This type of analysis could be useful in our example of a calf problem. If disease or death rates are consistently high, it may indicate a problem or problems with a process. On the other hand, if results are inconsistent, the problem might more likely be inconsistent performance of the processes, perhaps by weekend-only employees, for example. Another important point regarding processes: If the farm does not have well-defined processes, workers will make their own processes, and different workers may use different processes to try to accomplish the same results. This, of course, is not desired. Investigation of processes of any system make take more time and require another visit to the dairy.

Prior to the next step, formulating recommendations, the consultant should strive to understand the systems on the dairy which have identified bottlenecks, and for which solutions will be recommended. A system is simply a group of processes that produce a result. Some systems are simple and relatively

static. Others are complex. Still others are complex and dynamic. The overall dairy production system on a typical farm is actually complex and dynamic. Consider that dairy producers have to content with biological processes, market forces, weather dynamics, human resource issues, marketing, financial constraints, mechanical problems, and many others. Dynamic systems are particularly hard to manage and model. Dynamic systems do not just have finite inputs, but inputs that may change with time, or change due to factors outside of the system. The field of study called “system dynamics” attempts to model dynamic systems so one can predict the outcome of any change in inputs. Dynamic systems often have positive and negative feedback loops. A commonly used example is shown in Figure 9.² The number of chickens is affected by the number of eggs, in a positive loop, while the number of chickens is affected by the number of road crossings in a negative way. More eggs mean more chickens, but more road crossings mean fewer chickens. Dynamic systems can have many positive and negative feedback loops. The successful consultant needs to at least have a basic understanding of the dynamics of a system to make intelligent recommendations. For example, several studies have been published showing that culture-based treatment of clinical mastitis can produce significant economic benefits to most dairy farms. Yet, it is likely that culture-based treatment is practiced on a minority of dairy farms in the United States today. Why? Consider a consultant’s recommendation to institute this practice on a dairy. Implementation requires that someone will take a milk sample, someone will move that sample to storage, someone will take it to a lab, or set up culture on the farm, someone will move the cow to another pen, or not, someone might mark the cow or put a code into the computer, someone might use a quarter milker, someone will review the results and decide how to, or not to treat the cow, etc. Generally, few employees like seeing cows with mastitis, and nearly all probably agree that mastitis is a bad. Milking technicians see that management acts by treating cows, and often moving such cows to a hospital pen. What happens when less than 50% of cows are treated following diagnosis in a culture-based system? What is the incentive for milking technicians to identify cows with mastitis if most cows are not treated anyway? If not carefully designed, implementing a culture-based treatment system can create negative feedback loops such as this where technicians may decide to simply stop finding cows with clinical mastitis, which ultimately results in less optimal udder health and reduced economic performance. Perhaps culture-based treatment of clinical mastitis is not standard practice on many farms because managers understand the dynamics of their systems significantly better than the consultants who make the recommendations. Indeed, when a client seems to balk at implementing a consultant’s recommendation, it may not be due to just inertia, but due to a better understanding of the systems on dairy. Thus, it behooves the consultant to learn the details of those systems before making recommendations when possible.

Prioritizing recommendations

The final step in formulating recommendations is prioritization. One can use different criteria to prioritize, but an important consideration is the problem identified by the client. Even if the consultant believes the identified problem is not the most significant one on the dairy, solutions still need to be identified and presented to the client. Solutions to other problems might next be prioritize by a benefit-to-cost ratio, or by a benefit-by-time ratio, or by the relationship between the benefits and the

specific goals of the farm. Sometimes there are easy solutions to relatively minor problems that might move up the list of priorities because the solutions are so easy. Prioritization is best developed during discussion with the client. Generally, producers provide plenty of verbal and not verbal clues to ascertain which recommendations will be accepted and implemented.

The report

Almost always it is appropriate for the consultant to prepare some sort of report. Reports usually provide greater value if they are concise, practical, useful and easy to understand.⁶ While it may be tempting to use the report to demonstrate one's significant knowledge, this seldom leads to better acceptance, implementation and compliance by the client. Where possible, I try to produce reports before leaving the premises. To this end, some of my reports are designed to be data collection devices as well as reports. Data can be entered while painting the picture and walking through the dairy, which creates most of the content of the report. For example, Figure 10 is a screenshot of part of a page of a milking time analysis report. The report lists standards for most of the parameters that will be evaluated and a box to enter results from the evaluation. One can quickly identify the areas that need improvement after the data is entered.

Monitoring

The final step in the consulting process is to monitor results. The same tools can be used to monitor as were used to paint the picture and identify bottlenecks. Some monitoring can be done remotely, but if there is to be an ongoing relationship between the consultant and the dairy, further visits will be needed. If improvement in performance is noted, providing an estimated return, in dollars, of those improvements, is wise to help strengthen the relationship between the consultant and the dairy.

Other requirements

There are some other needs for the external consultant. These are particularly important for those just starting to develop a consulting practice. First, the consultant must understand how businesses operate in general. Fortunately, there is a wealth of information on this topic. *The Harvard Business Review* (HBR) is an example of a periodical devoted to business. Published six times a year, it almost always has one or more articles within that are pertinent to running a small business. It is relatively inexpensive, especially if one purchases the online-only subscription. HBR also has an online library of past articles and collections organized by topic.

Second, the consultant needs a method to get paid. Consultants can be paid in various ways including by project, by time, per hundredweight of milk sold, by sharing the revenue of improved results, or others. One way to determine what to charge is to determine the total amount of time that will be needed to complete the project and then bill by the hour or by the day. Typically, outside consulting rates will be somewhat higher than what is charged in day-to-day practice.

Third, veterinarians new to consulting may also need to develop their expertise prior to beginning. Continuing education may be required. Time is also required. Time can be hard to find in a busy practice, but developing new skills and services requires time. This means that the practice schedule needs to

be structured in such a way that the prospective consultant has time available to learn. New consultants may need specialized tools to address perceived threats unique to new or inexperienced consultants such as imposter syndrome. Imposter syndrome can be loosely defined as doubting one's own competence, knowledge or ability to fit in. In the HBR article, "How consultants project expertise and learn at the same time", the authors categorize these threats as threats to competence, acceptance and productivity.⁷ Competence threats can be attacked by crafting relevance. The simple principle here is never to arrive empty-handed. For example, if the consultant has access to any kind of farm data prior to the visit, it would be wise to prepare some observations and even early-stage recommendations so that one can demonstrate competence right at the beginning of the visit. An acceptance threat is when the consultant does not feel they are being accepted as a fellow professional, or part of the team. Acceptance threats are attacked by crafting resonance. This means using insider information and knowledge to gain acceptance. Tactics can be as simple as effectively listening to how the client speaks, for example, and then using the same or similar expressions when communicating. This may sound crass or unprofessional, but consulting is to some degree a performance and there is nothing wrong with using tactics to increase one's effectiveness. Productivity threats occur when the consultant feels that they are not producing enough value in the short term for their client. To attack this threat, new consultants can craft substance. This means creating objects that convey knowledge. For example, one might show a newborn calf feeding protocol that was developed for another farm, anonymously of course, if the problem being addressed is newborn calf management, or a vaccination protocol, or a calving record, or any other visual aid that the consultant has developed in the past. Just like for crafting competence, the key is to not show up empty handed. Because of our digital world, it is now easy to arrive on the dairy with a wealth of information within one's hands.

Veterinarians who want to become consultants but cannot find the time to do so may need to change the structure of their practice. Much like burning a prairie to allow new seeds to germinate and grow, practice systems may need to be changed to allow one to develop expertise, develop needed tools, and to practice. Consulting only after regular business hours is not likely to be successful. Changes might include different billing systems or different compensation systems, for example.

The final item needed for a new consultant is to practice what I call "the consulting mindset". The consulting mindset is a mindset where one is relentlessly and continuously looking for opportunities to help, and one is always ready and available to pounce on opportunities when they arise. In dairy practice, this might mean talking about nutrition or prefresh cow management after delivering a calf following dystocia at 2 or 3 AM, for example. It might mean walking out into the free stall barn and measuring stalls after examining an injured cow. There are similar opportunities almost every day in dairy practice. Practicing the consulting mindset during regular dairy practice activities helps one learn both how to diagnose and solve problems and also how to interact with a client during a consulting relationship.

Available opportunities

What are the opportunities for external consultants in the dairy industry? On the one hand, the opportunities for consulting opportunities are fewer for outside consultants than for practitioners serving as inside consultants on a regular basis. The veterinarian who visits a dairy on a regular basis really has a unique opportunity to practice consulting. In particular, the regular veterinarian has a great opportunity to observe changes following recommendations, provide feedback, and recommend adjustments when needed. The vast majority of dairy farms do not regularly and frequently use outside veterinary consultants in a major way. Thus, the expectation that most dairy veterinarians will fill much of their daily calendars with outside consulting visits in the near future is not justified. However, opportunities still exist, especially if one broadens the potential list of clients to serve. Indeed, in my own consulting practice, I have probably more often been retained by someone other than the owner of the dairy than by the owner. Animal nutrition companies, builders, equipment dealers, pharmaceutical firms, financial institutions, colleges and universities, law firms, and other consultants are all examples. The list of potential clients is long, if the consultant is willing to serve. Regarding the specific systems of dairies that a consultant could potentially evaluate, the list really includes any system on the dairy, including: nutrition, animal health, reproduction, housing and environment, financial, human resources, employee training, inventory management, cost control, disease prevention, business planning, and more. New opportunities arise over time, and a consultant is well-advised to not just stay current, but try to stay ahead of emerging industry trends. For example, being fluent in Spanish 10 years ago in many places in the U.S. would have been an opportunity that many consultants likely missed. Understanding the intricacies of robotic dairies, and in particular how larger robotic dairies operate, may currently be a skill set of significant value today. Wayne Gretzky, the former National League Hockey player, famously said, "I skate to where the puck is going to be, not where it has been."¹ Consultants should strive to do the same.

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