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Summarizing performance for a system: Benefits and constraints

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Nursery-finish group level comparisons of production and financial trends of historically closed groups has been a primary tool for determining trends and tracking management changes. Like most tools, for maximum efficacy and safety, users must understand the potential and limitations of the tool itself, and understand the materials the tool is being used on, and remember the vision of the final product.

Value of historical closed group data for future decision making

Closed group records are the only source of complete production and financial data available. Current active group data often look a bit better than actual due to timing of payments, increased final costs at the end of the growing period, etc. This certainty of closed group completeness reduces the “yea buts...” of analytical conclusions. Usually these closed group parameters are easy to set in chronological order to track trends, but this requires an intimate knowledge of the history of each group and a great memory of special circumstances. Even with the seasonal, and before/after circumstance issues, closed group analysis allows a comparison to self which is one of the best tools for continual improvement.

Of course, closed group analysis is only capable of looking at yesterday's old history that you can no longer change or improve. Furthermore, as a result of most producers' inherently optimistic outlook, the common response to negative trends and poor group records are a combination of excuses that were beyond our control and anemic hope that future groups will be better without changing anything. Closed records value is directly correlated with the determination and passion to identify needed areas of improvement and a commitment to change. With this passion for improvement, these records can be an invaluable tool for decision making, communication, and motivation.

Data accuracy

The most expensive and elaborate accounting and production software packages are worthless (or worse) without accurate data inputted. There is an extraordinary daily effort and cost required to keep production and financial records on the straight and narrow. By default, every production and accounting system will fall to disarray

if someone isn't the data Czar championing the need for reliable data every day. Assigning the correct costs to each group is a not a task that happens by accident. Passionate accuracy of group inventory and pig movement reconciliations can be a daunting task itself. Since most of the denominators used in production and financial records are inventory based, accurate inventories are essential for confidence in the data analysis.

In the age of inexpensive data collection through electronic automation, we are able to capture more data than ever without manual inputting. Electronic downloading of information should decrease the risk of human error, but someone, somewhere usually inputted the data originally. With automation comes the temptation to believe the black box and assume data is accurate. Reconciliation processes remain critical with automated inputting.

Which metrics to prioritize

When a parameter or metric is prioritized as “the” measuring stick to measure success, the company will consequently move in that direction at the expense of de-emphasized metrics. Therefore caution must be applied when choosing parameters to prioritize. Be cautious of industry fads and metric fashions. Understanding the company's cost structure and profit opportunities are paramount to determining the metrics to monitor. Some cautions in determining metrics to prioritize are:

- **Throughput vs. Efficiency.** Throughput measurements tend to prioritize \$ in the wallet at the end of the day. Efficiencies compare “per units” which may have little to do with actual profitability. Some are appropriate, but beware of any parameter that has the word “per” in it. Many efficiency parameters seem to be natural surrogates for profitability, but upon closer study, often fall from the critical list, or worse may lead us in directions we don't want to go.
- **Averages vs. Distributions:** Group averages often cloud what is truly profitable. For example improving average daily gain only helps the bottom line if the average is moving because of improvements in the slowest growing pigs. Many improvements in ADG are due to the best gaining pigs gaining even faster which has minimal effects on profitability.

- Biological vs. Economic Denominators: Biological units such as pig-days tend to focus on winning the blue ribbon for performance as opposed to profit decision making parameters such as total barn-days as the denominator.
- Incremental Vs. Total Group Analysis: Some decisions are based on incremental performance and some should be based on total groups' history. Careful attention to the appropriate thought process is important prior to choosing the metric to chase.

Data management for decision making

After insuring accurate data collection and appropriate parameters to track, it is often difficult to make sense of the mountain of individual groups' data. Sorting groups by whatever cohort parameters are of interest can be challenging. Front-end planning needs to include recording the sorting categories for each group in the data collection. Storing closed group parameters in data bases with cohort query capability or using spreadsheet's data functions such as data sort, pivot tables, subtotals, and just plain cutting and pasting can work to sort and separate cohorts for comparison. However, caution must be used to achieve weighted summaries by inventory rather than just mathematical averages by group.

Most revelations from closed group analysis are fine-tuning adjustments with small differences in a cloud of confounders. Statistical tools such as SPC and appropriate statistical tests are excellent tools to prevent chasing the bouncing ball when changes in parameters may be due to chance. Unfortunately, most group comparisons we want to monitor include management changes that are usually before and after or in different systems with potential for confounders. Caution must always be used in these comparisons. Often closed group analysis will have too many confounders if extreme confidence levels are needed for management decision making. However, for most management decisions, common sense with group analysis can suffice and allows much quicker decision making than waiting for controlled research with low P values.

Internal vs. external benchmarking

With access to closed group data, there is an innate desire to see how you stack up to your peers. There is a universal hunger to privately compare ourselves to others, and there is an equal universal fear of public comparison to others. This hunger for external comparisons typically results in either formal or informal external benchmarking with other production systems. This can be very dangerous ground.

Rarely, multiple companies have similar goals and philosophies. What makes System A the most profit may not be what System B should chase for its profitability. Different accounting and production record practices and cost structures can lead to dangerous comparisons when externally benchmarking. Used as a coaching tool, external benchmarking often can be de-motivating when someone is not near the top of their cohort group. Generally, people respond better to self improvement comparisons rather than peer to peer comparisons. Also, the motivation to win the external benchmark blue ribbon can negatively affect other parameters that may affect overall profitability to a greater extent. Economically, it is almost impossible to standardize equity positions, owner labor, administration, financing fees, real costs of cost center divisions, etc. Publishing economic data can be dangerous industry wide if inappropriate comparisons are made. Generally, it may be safer and more productive for systems to just say "No" to external benchmarking and use group comparisons for internal continuous improvement processes.

Active decision making

Ultimately, the motives of closed group analysis determine its effectiveness. If the primary goal is cost justification to stakeholders, tournament comparisons with external entities, or going for feel good blue ribbons of non-economical parameters, true improvement will be illusive, and analysis ultimately low value. The costs and efforts of keeping accurate data and making good comparisons are too high for the above motives.

If, however, the goal is ongoing continuous improvement, statistically reviewing accurate group close out records can be a powerful tool. Records by themselves will not make a system more profitable. The most they can do is to point to areas with opportunities for change. Therefore the first pre-requisite to group records analysis is a willingness to change if a change is profitable. Usually complex analytical tools are not needed. Most required changes are simple if we dare to look for them, and subsequently have the courage to act on them.

