



## A SUMMIT PRECISION PRODUCTION WHITE PAPER

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# HUMATEC™

## People – pigs – process – performance: Creating the irresistible workplace

J. Hoek;<sup>1</sup> K. Lonergan Erickson;<sup>2</sup> J. Wiegand<sup>3</sup>

<sup>1</sup>Summit Precision Production (SPP), Summit Livestock Facilities, Remington, Indiana;

<sup>2</sup>Erickson Communications & Consulting, LLC, Clarks Hill, Indiana;

<sup>3</sup>Sift Human Resources LLC, Urbana, Illinois

### The Challenge

Variation is opportunity both in the manufacturing and biological manufacturing world. As the swine industry has scaled to larger facilities on multi-geographical locations; consequently, the control of variation has been difficult. The cost of variation from top 25% production to bottom 25% production is estimated to be as much as \$30.00 per pig – based upon years of observation by the author.

Humans are the apex decision makers within the system to manage variation from the CEO to the entry level worker. As the industry has scaled, the difficulty of attracting, training and retaining competent human capital has been challenging. Turnover rates in some systems are as high as 35%. The cost of turnover ranges from 16% to 20% of position salary<sup>1</sup> (Figure 1). In an industry with such a noble task of feeding the world and caring for animals this trend lies outside of the ethos of who we are as stewards of land, animals, and people.

Evidence from Boushey and Glynn<sup>2</sup> evaluated data from thirty case studies confirming that it costs businesses at least one-fifth of a worker's salary to replace a worker (Figure 2). Additional losses typically accrue from factors including but not limited to such costs as advertising, recruiting, and

interviewing prospective replacement employees, training time and costs, productivity ramp-up of new hires, and the impact that a “revolving door” of new employees has on the morale and productivity of other workers. This, in turn, can negatively impact pig performance and profitability.

Multiple studies confirm the alarming costs associated with turnover. Merck & Co. pegged turnover costs to be as high as 1.5 to 2.5 times the annual salary of an employee with multiple factors in consideration. It also showed that in some systems, during a new employee's first 14 months on the job, more than five months of time was lost to inefficiencies.<sup>3</sup>

The inability to find, train and retain qualified workers has disrupted the ability to adapt new technologies and new environmental designs. Regression to old technology to meet the labor force skill sets has been the status quo in many systems. HUMATEC™ is a pilot project by Summit Precision Production (SPP) to build better lives for animals and people in protein production through a passionate culture of innovation and opportunity – one that creates a human platform to reduce variation in production and establish a culture within the farm where innovation can thrive.

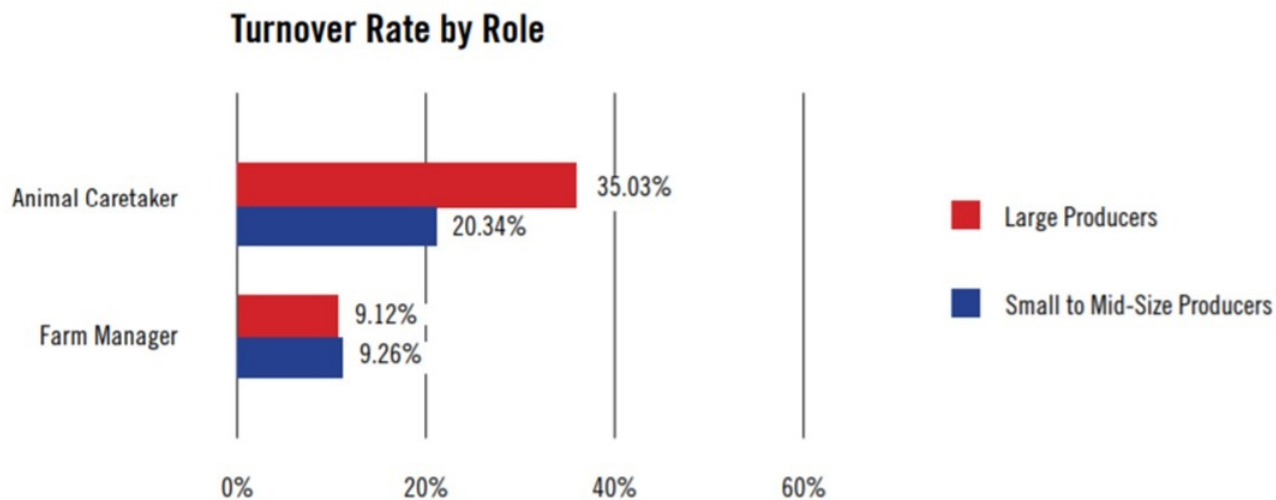


Figure 1. Turnover rates were significantly lower at 20.34% among animal caretakers within small to mid-size producers than the turnover rate for animal caretakers with large producers (35.03%). The turnover rate for farm managers was similar for both audiences. Turnover rates were calculated as an average of reported turnover rates. Source: National Pork Board. Employee Compensation and HR Practices in Pork Production. 2017.<sup>1</sup>

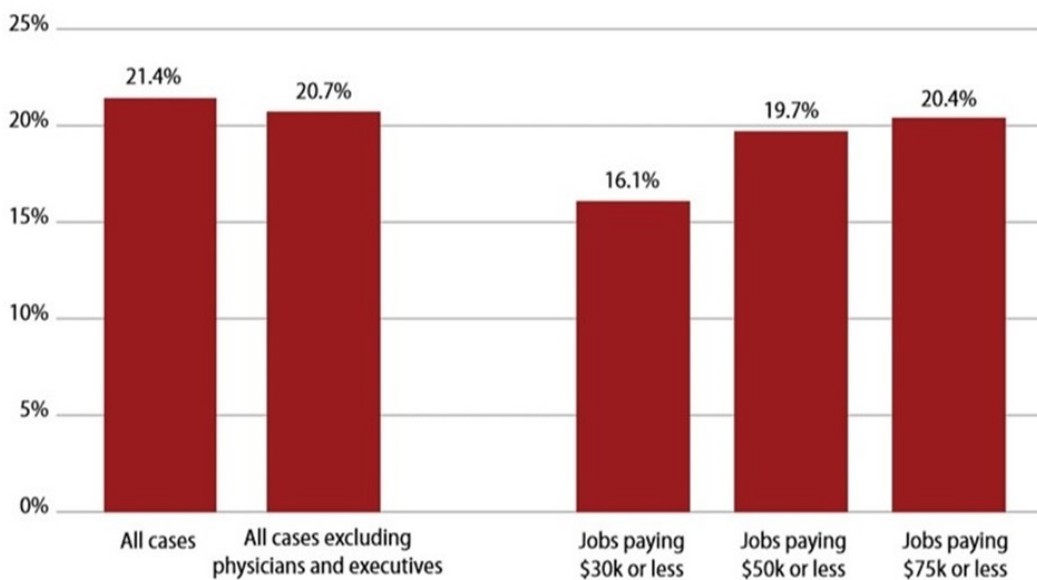


Figure 2. Replacing employees is costly. Turnover costs are consistent across jobs of various pay scales during 1992-2007. The highest-paid sector is an exception. Source: Boushey and Glynn, 2012.<sup>2</sup>

## People - culture

Swine production labor has one thing in common with other industries: its people. Leadership has an increasing responsibility to define and create the irresistible place to work. Peter Drucker once said, “Culture eats strategy for breakfast.” Without a healthy barn/company culture leadership’s strategy will fail. Patrick Lencioni shared in his book, *“The Three Signs of a Miserable Job”* that anonymity, immeasurability, and irrelevance all contribute to people hating their jobs.<sup>4</sup>

According to Gallup<sup>5</sup>, 85% of workers around the world are disengaged or actively disengaged in their work. This has profound financial consequences to companies and consumers alike with economic implications in the trillions of dollars, not to mention the unsatisfied daily existence that so many people have in their daily work.

Current management structures in protein production struggle to find ways to recognize the individual’s contribution in a purposeful way. With high turnover rates, geographical locations, and scale, it has become difficult for managers to foster a genuine relationship with the cross section of employees. Further development of communication technology across geographical locations must be developed for consistency and continuity. The manager/employee relationship must be baked into the culture of the organization from leadership.

Boessen, Artz and Schutlz<sup>6</sup> found labor is a critical issue for the industry, and that high performing swine farms achieve it because of their people (Table 1). Swan<sup>7</sup> noted that “pigs do not achieve excellence; people achieve excellence through their pigs.”

Table 1: Key findings from the “Baseline study of labor issues and trends in US pork production”

Key Findings from the Baseline Study of Labor issues and Trends in U.S. Pork Production National Pork Producers Council   Boessen et al 2018
<ul style="list-style-type: none"> <li>• In 2012, hog and pig farmers in the U.S. spent over \$837 million on hired labor, a 12 percent increase from the previous Census of Agriculture in 2007.</li> </ul>
<ul style="list-style-type: none"> <li>• The labor expense was even greater, at \$1.2 billion and a 19 percent increase, when contract and custom labor was included.</li> </ul>
<ul style="list-style-type: none"> <li>• From 2001 to 2015, employment in the swine industry grew by an annual rate of 2.1 percent, a rate three times faster than employment growth in all U.S. industries. Total and weekly wages in hog production jobs have also grown significantly faster than the average of all U.S. industries over this 15-year span.</li> </ul>
<ul style="list-style-type: none"> <li>• Nearly 38 percent of hog and pig farms reported having hired labor in 2012 and the average per farm hired labor expense was \$102,000, increases of 28 percent and 23 percent, respectively, since 2007. Almost 1,400 farms reported having a hired labor expense over \$100,000 in 2012. Recruiting, retaining, and managing labor is therefore very important for an individual farm operations’ success as well as the broader industry’s success</li> </ul>

Summit Precision Production (SPP) proposes to challenge the labor issues facing the industry by employing the HUMATEC system that measures the coevolution of people, pigs, process, and performance. Using methods proven throughout manufacturing and industrial systems, HUMATEC incorporates tools to gain a full understanding of the culture, people and production dynamics of the farm.



The first step in creating an irresistible workplace is to measure the culture of the barn. People are at the core every business culture. Culture is measured through a series of assessments provided by Summit Precision Production. Summit-Cloverleaf is a tool that coalesces the major personality profile tools into metrics to analyze culture, among other things.

Another key to understanding worker motivation and performance is person-job fit. Across industry, time, and place, research from Schmidt and Hunter<sup>4</sup> showed how cognitive ability, personality, and interests predict future job performance over and above interviews and resume reviews alone. Research confirms these traits also relate to job

satisfaction, which in turn, drives turnover.<sup>5</sup> HUMATEC has partnered with Sift Human Resources LLC, an HR data analytics consultancy, to collect employment data from high and low-performing farms to develop models of the ideal entry- and supervisor-level barn worker, as well as farm manager. For each of these roles, the HUMATEC system will evaluate new job candidates' and existing employees' thinking style, personality, and interests and provide personalized reports for making hiring decisions, asking targeted interview questions, identifying high-potentials, onboarding new hires, and developing new employees.

Culture starts with a clearly defined Mission, Vision and Core Value establishment. All decisions regarding strategy are driven from the Mission/Vision/Core value definition.

## Pigs

The pig is at the center of what we do in swine production. The coevolution of the human pig interaction is at the heart production optimization. With up to 35% turnover in scaled swine production the animal has a high potential to be compromised. Consumer trends today expect and demand that the pig is taken care of in a way that is dignified and humane.

During the past 20 years, numerous studies in the pig industry have found significant relationships between productivity in farrowing and weaning units and the personality types of the employees working in the barn. Zulkifli<sup>8</sup> explains that the attitude and consequent behavior of stockpersons affect the animals' fear of humans which eventually influence animals' productivity and welfare. In another study, Hemsworth, Barnett and Hansen<sup>9</sup> exposed gilts to 2 minutes of pleasant or unpleasant human interaction three times a week for nearly three months. Results

showed gilts that had pleasant handling treatment had significantly better weight gain than those in the unpleasant handling treatment.

Human factors beyond attitude influence the environment as well. Employee technical skills, knowledge, job motivation, commitment, and job satisfaction are noted as prerequisites for high job performance. Coleman and Hemsworth<sup>10</sup> offer lengthy literature in multiple contexts of various personality measurements of stockpersons and the direct and indirect relationships those have on pig production outcomes. They contend that the relationship between workers and pigs matters because it has the capacity to influence pig health, welfare, productivity and product quality as well as the stockpersons' work quality and job satisfaction.

Building better lives for animals and people is at the heart of the HUMATEC philosophy. The pig is what brings relevance and purpose to the human. That is at the core of HUMATEC's drive to create the irresistible place to work. Providing safe, affordable protein to human beings is a noble and rewarding vocation that should be met with enthusiasm and gusto.

## Process – quality performance system

Process mapping is one of the fundamental block and tackle tools in process improvement. Developing and implementing consistent process mapping helps improve communication, analyze performance, find and address problems, define and collect data needed. It can be an effective means to gain buy-in for what is done and/or what needs to get done as part of employees daily functions.

Summit Livestock's SPP is conducting a pilot labor project in a 10,000 head sow breed-to-wean facility

in central Indiana. In this scenario, process mapping is the tool used to draw the people and pigs together. Lean manufacturing and industrial engineering principles are applied to SPP strategies to bring consistency to biological manufacturing. It is the author's hypothesis that scaled swine production has the opportunity for a 10% to 15% reduction in labor cost and head count with the implementation of a well-defined continuous improvement process. In the pilot study, SPP has imbedded two full-time employees to engineer change through process management and to define the problems, develop the process solutions, execute the process, and refine the process.

Process mapping contributes to the development and function of an irresistible place to work because it provides a framework by which the employee can learn and be measured. It orients employer and employee simultaneously on task and goal scope and flow. Measurement leads to recognition. Recognition leads to relevance. Combined, measurement, recognition, and relevance provide a satisfied employee according to Lencioni.<sup>4</sup> Satisfied employees are at the heart of the irresistible place to work.



Lean manufacturing is called a business philosophy, an operational strategy, or an initiative. In this context, SPP defines lean manufacturing specifically

applied to the pork production industry as pigmanship. It is a means for pork producers to reduce and eliminate waste while fine-tuning processes that maximize and harmonize people, pigs, and place in each step in the production chain. This includes eliminating inefficiencies of time, energy, motion, and resources. Continuous improvement is made steadily, constantly, and consistently. At the same time, improvements are made incrementally, fluidly, and readily. It is the constant fine-tuning that brings about measurable results. Lean manufacturing and continuous improvement reveal opportunities and shortfalls, but allow those to be addressed, add value where it was absent, and amplify advancements.

Together, lean manufacturing and continuous improvement deployed as pigmanship in swine production facilities allow for transformational improvement in employee culture. HUMATEC brings definition to job roles for measurable improvement and success. This important benchmarking changes culture through engaging employees in a system they can understand and learn, and in which they can ultimately succeed.

## Conclusion

As the world's population and the protein consuming middle class continue to escalate, the pork industry is working to meet the demand responsibly and proficiently. That requires a unique combination of technology, pigs, and people. Science and many thought leaders in the industry have brought forward excellent technologies to support producers. Still, the biggest challenge facing profitable pork production is the human factor.

Access to and training of a reliable workforce that is not riddled with high turnover is essential. Employees that are informed and engaged realize many benefits. Pigs benefit from environments where employees are happy. Changing the paradigm

by establishing engaging lean processes and continuing improvement through SPP's HUMATEC provides transformational step change in pig production.

By factoring in the human element with the health, safety and well-being of the livestock, producers have the potential to provide an efficient, productive and ultimately more profitable delivery of protein. It can all be measured – a critical element to drive the production strategies of livestock producers. The bottom line of the ledger speaks volumes. The cost of high turnover of employees alone has a dramatic effect. The cost on the health of the pigs is also measurable. Healthy pigs thrive better when cared for by satisfied and engaged humans working in their spaces.

People, pigs, process, and performance are capable of being harmonized and optimized as a system. Wrapping the employee tools for lean manufacturing and continuous improvement as pigmanship within the building brings better functionality and form to everything that goes on under the roof. That improves the human and animal performance, competitive advantage and overall profitability.

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