

Quality Improvement: Success through a Deming Lens

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Abstract: The Assignment

In this course we have been asked to take a look at our decisions and our current processes through a new lens. We have been asked to examine our traditional methods and beliefs relating to management, employees, and systems as a whole. Through this modified lens, we are challenged to see if using a different method in a working environments produces the same results? Can we be more productive and efficient when we address problems at the systems level rather than with individual contributors? Does the system dictate success or failure? If this is the case, how can we make sustainable changes towards better function in American industry? How can we use this model to create enhanced services in the public sector? The following will analyze a problem that was faced at Salt Lake County Animal Services, how it was addressed, and how applying this new perspective would have created a better solution to the problem. We will look at W. Edwards Deming's life and contributions to quality improvement. We will see how, in this circumstance described, instituting a systems model like Deming pioneered would altered the course of Animal Services. We will see how this public agency plans to move forward utilizing this new lens and us Deming's management model to put them on the path to continuous improvement.

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A Problem at Salt Lake County Animal Services

People, in general, love their pets and consider them part of their family. The average person will provide a loving home with proper care for the duration of their pet's life. It is not normal behavior to abandon a pet at an animal shelter. This is why it is so frustrating and upsetting that, as a nation, we end up with millions of homeless, unwanted pets living the majority of their lives in animal shelters.

I am the Division Director of Salt Lake County Animal Services and, at our shelter, we receive animals every day of the year, equating to around 10,000 pets annually. It has been a long standing belief in our agency that these animals were coming to the shelter because of negligent owners. It has also been the belief of most staff members that our Animal Control Officers have not done a good job in offering resources or providing firm guidelines to these negligent people. Their disregard for this issue has made it easier for people to turn their animals over to us and to continue their negligent behavior.

We employ 78 individuals and 26 team members are on the Animal Control/Enforcement team. Officers bringing pets to the shelter is a constant frustration and complaint for the 52 shelter and program employees who believe the officers are performing poorly. It is also frustrating for shelter employees when these animals have owners and the officer has not done what they believe is necessary to get the animal back to the owner. They believe officers have not done the job necessary to ensure the owner maintains their responsibility, which puts the burden of this responsibility on shelter staff and on our agency.

Because of the volume of animals coming in through animal control over several decades, our agency instituted several rules and policies throughout time mandating what

animals could and could not be brought to the shelter. This equated to quota levels for each officer which were almost impossible for the officers to meet. Officers that were able to stay within their numbers were avoiding calls which would require them to pick up an animal. Other officers were just ‘throwing in the towel’ on the goal and bringing everything in, regardless of whether it needed to come to the shelter or not. This quota generated goal was utilized on performance evaluations and also at some points was used to determine bonuses and incentives.

When I obtained the leadership position of this agency, it was evident that we had a problem with our animal intake and also with how we were measuring officer success. It was clear that in multiple years of data and intake records, that putting a quota or creating a number requirement for officers had no impact on our animal intake. All the efforts and action that were attempting to impact this number were not making a difference. The results and intake numbers remained at the same level.

Why the response to this problem was not working?

Incorrect Cause. The initial response to this problem was enacted under the assumption that the problem was because of human error. We believed intake was caused by negligent owners and poor performing officers, but we did not have any data or evidence to support that belief. Our response to the problem was to form some accountability for officers by creating quotas. This number became an arbitrary result as officers had no ability to control variations. One day they could not have a single call to pick up an animal, and the following day they could have a hoarding case that could ruin their quota for the year.

Fear Based/Quota Model. Another issue is that the system that had been created was built in a fear-based model where penalties were attached for employees who did not meet

certain standards. Employees were avoiding opportunities to do you specific jobs in order to not have a negative impact on their numbers. This created a divide amongst that team by determining who was going to have success and who was not without relation to their performance. Poor numbers were not based on employee skill or contribution, but just on their willingness to take a specific type of call. This created barriers and animosity amongst this team.

No Consistency of Purpose. There was also a divide amongst the shelter and field staff as it was believed that they did not share the same vision or purpose. Both groups experienced frustration as they believed they were correct and the other one was not. The shelter employees believed they cared more about the mission of our agency. The field employees felt that the shelter had no understanding of the complexity of their job. Both felt they had no consistency of purpose and very little support from management.

“Management by Results — like driving a car by looking in rear view mirror.” (Deming, n.d.) The overarching issue with why Animal Services’ actions didn’t work was that we did not have the correct action or response to create the correct result. We didn’t even know for sure if we even had the correct problem. What we assumed was at the core of the issue was not actually creating the result we were getting and adjustment to the process did not create the results we were hoping for. The problem was in the system. The employees’ performance was not the determining factor on whether or whether or not we had success.

Why blaming employees is common?

Shared Mental Model. Businesses tend to focus on employee error when accounting for variations in results because it is easier to assume it is the employee than it is to assume that the system is not working. It appears even more common to consider these employees’ errors as

causes for variation in a non-factory work environment as employees have more autonomy and are in a more agile position to impact results. Blaming employees is simple and it is a 'knee jerk' reaction so it tends to be the first place leaders land when they don't know the true cause of a variation. Even further, using Arthur T. Denzau and Douglass C. North's Shared Mental Model, blaming employees is a learned and instinctive reaction. Denzau and North state:

There are two conceptually distinct levels at which learning can occur, with important implications for the effects of the learning...The initial architecture of the structure is genetic but its subsequent development is a result of the experiences of the individual. The experiences can be classified into two kinds - from the physical environment and from the socio-cultural linguistic environment...The event space structure consists of categories - classifications that gradually evolve from earliest childhood on in order to organize our perceptions, and keep track of our memory of analytic results and experiences. Building on these categories we form mental models to explain and interpret the environment, typically in ways relevant to some goal(s) Both the categories and mental models will evolve to reflect the feedback derived from new experiences - feedback that may strengthen and confirm our initial categories and models or that may lead to modifications - in short, learning. (Denzau & North, 1994)

Individuals in businesses create shared mental models in order to foster understanding and improve communication. This leads to converging beliefs and understanding. (Denzau & North, 1994) As new team members join, they evolve their understanding to join with the shared mental model carried by the group. This makes for unity, conformity and group think decisions.

When an organization is on the correct path, shared mental models aid in providing efficient flow and organized efforts. In the reverse, when an organization is floundering, this can lead to a negative result for the organization. (Carson, Tesluk, & Marrone, 2007) It is difficult for the organization to get off the negative path as all contributors in the organization have similar beliefs. It is difficult to adjust a belief like employee blame for a variation because it is a universally shared belief that is indoctrinated in team members through the entire cycle of

their employment. The team doesn't see things as they actually are. They see the scenario through the lens of their own mental model. (Denzau, North, & Roy, 2007)

Authoritarianism and Individualism. Some of the other reasons that “business as usual” mentality continues in companies is that managing through authority is still common practice in both the private and public sector in the United States and throughout the world.

Authoritarianism is still the most common form of management seen in the United States.

Business leaders like Elon Musk and Bill Gates are big-name successes that run their businesses with authority as the driving force rather than working within functioning systems. (Boogard, 2021)

These businesses stake their fates on innovation and individual contribution. This push for an individualistic approach is counter to looking at a business with a system's lens. Individual contribution is the desired model for many millennial workers. (Joyce, 2016) This creates a desire to make comparisons of contributions, which then leads back to noting and blaming employees for their contributions or lack thereof.

Short-Term Goals. In Edward Deming's words, “Long-term commitment to new learning and new philosophy is required of any management that seeks transformation. The timid and the fainthearted, and people that expect quick results, are doomed to disappointment.” (Deming, n.d.) Businesses today are invested in short term goals and are drawn to quick returns rather than investing in long-term results. Fast moving targets like the stock market adjust every day and push businesses toward focusing on short term successes, while neglecting long range planning. This living day-to-day model negates the value of data that would support long term goals and would potentially show systemic issues.

Trust in Technology. Another reason for rejecting systemic flaws is the false belief that technology can fix everything. With technological advances, many managers are looking for ways to improve through technology rather than through systems. Deming believed that “transformation can only be accomplished by man, not by hardware (computers, gadgets, automation, new machinery). A company cannot buy its way into quality.” (Deming, n.d.) This ideology demonstrates that managers believe that technology is capable of fixing the variations that employees are making, again placing the blame for the problem on the employees and not the system.

Experience over Method, until Failure. Many business leaders are unwilling to change function if they have had success with their current model. Their experience has taught and reinforced the system that they are maintaining, regardless of if the system still works well or not. Businesses are unlikely to acknowledge system issues unless they have no other option. When all other options have failed, businesses are more willing to abandon their current working philosophy. Only then can they move towards a scholarly theoretical approach that looks at the system and not the individual players.

Try Something New...Deming Who?

Dr. W. Edwards Deming's work came to light in just this exact manner. With an educational background in electrical engineering, mathematics, and physics, (Davids, 1999) Deming looked at the economy and industry with a mathematical and scientific approach. He focused his efforts on quality control and systems improvement. With the logic of mathematical theory always in perspective, Deming was able to prove that a scientific approach could be applied to business modeling.

After World War II, Deming was sent to Japan by General MacArthur and the Command of Allied Powers to assess Japan's situation before their upcoming census. He was asked to analyze their economy and help them rebuild their country after the devastation of war. With a clean slate and no preconceived methods, (The W Edwards Deming Institute, 2021) Deming was able to institute a systems model approach using scientific principles to help Japan regain its economic independence.

Japan embraced Deming's teachings and exemplified that a systems model could lead to measurable success. Deming taught that a system should be appreciated, understood, and evaluated continuously to ensure quality and efficiency. Through Japan's success, Deming clearly demonstrated that this model could be applied in any market. The theory could produce positive results if the players understood, valued, monitored, and modified the system they functioned in through this model. (Denzau, Minassians, & Roy, 2016)

Deming also taught a lot about variations. He believed that variation errors are more often caused by system flaws than by individual flaws. He stated that, "A manager of people needs to understand that all people are different. This is not ranking people. He needs to understand that the performance of anyone is governed largely by the system that he works in" (Deming, n.d.)

Upon his return to the United States and with the success of Japan's economy, Deming highlighted key principles for businesses to follow in order to obtain similar success. With these key principles in mind, Deming launched his Total Quality Management Movement to help influence American industry. (Davids, 1999)

Deming promoted that for effective transformation in a business that in every level of the organization, the aim of all players should be the same. Everyone within all functions of the

workforce should be moving towards the same purpose. He also pushed that rather than focusing on inspection, product should be made of quality in the first place. He believed it was important to award business based on quality and not have the cost of a product or widget be the single qualifier in determining a supplier. He supported constant improvement, evaluation, self-improvement, and training. He believed that management should assist in achieving the goals of the organization rather than focus on evaluation of employees which drives fear and competition amongst workers. He challenged companies to break down barriers and roadblocks to efficiency like quotas, management versus employee mindset, targets or slogans, and numeric goals. He believed that everyone within the organization should be on the same path towards transformation and every employee should help in creating and maintaining that transformation. (The W Edwards Deming Institute, 2021)

Deming PDSA Cycle

Deming also created the PDSA Cycle. In this model he created a way for managers to make knowledgeable and informed decisions. The four sectors of Deming's cycle included Plan, Do, Study, and then Act. (Taylor, et al., 2013)

The First Step is to Plan. The business must first understand how they define quality and what indicators will help them determine if they can predict outcomes. The process of planning is not only to improve outcomes, but also to understand the system. In planning, the company should use scientific investigation to understand what factors affect variation in a business. In this phase, businesses test the production and come up with hypotheses for why results are occurring. They try to plan variations to attempt to understand how the changes they make will have an impact on the product or end result.

The “Do” Phase. The business will test their hypothesis by implementing their plan. They will record everything, including variations, and test variables within their plan to determine different outcomes. When companies are testing their hypothesis or plan, they should not make adjustments on a whim during this phase. (Aileron, 2017) The point of this phase is to understand what is causing improvements and what is causing variations.

Study. In this phase businesses are trying to determine whether the plan they created caused the accurate results in the “do” phase. They study how the plan created accurate results and in what places the results differed. The business hypothesizes what variables determined positive results and variations. The goal of the study phase is not to figure out whether the process improved or not, but to figure out why it improved. By knowing the “why”, businesses can influence the outcome to perform the same way in future examples. (Aileron, 2017)

Act. Once the implemented plan has been studied and analyzed, the last phase is to act. In this phase the business uses the information they acquired in the previous three phases to implement recommended changes. In this phase, the business will continue to track performance and record all data to confirm that the process is continually working and the results are predictable. The system should be repeated as needed to continue to get similar results and to assure that the causes of variations are known.

Deming’s model was similar to Shewhart’s Cycle of PDCA (plan, do, check, and act). However, Deming noted that there were distinct differences in the two models. (Taylor, et al., 2013) In Deming’s model, the check step was replaced with study as he felt that the study was more appropriate. He believed in checking a process, you were just verifying whether a hypothesis is true or faults. In studying the process, you are trying to analyze defects and reduce

them. By studying the data, there is more of a focus on the system and the process itself rather than the outcome.

Deming Model at Animal Services

Initially, it is evident that Animal Services resorted to a shared mental model that was not based on data, but on an inherent false belief shared by many in the agency. The “plan” and “do” phases were not done correctly and did not create the intended result. The data and results were not “studied” and “action” was put into place without regard to the outcome. This resulted in quotas, fear-based management, and no reductions in the initial problem. As Deming argued, “A numerical goal leads to distortion and faking, especially when the system is not capable of meeting the goal. Anybody will meet the quota (goal) allotted to him. He is not responsible for the losses so generated.” (Deming, n.d.) Animal Services functioned under this false system for several decades.

The long standing divide between field staff and shelter staff was apparent. Employees were disenchanted and disengaged from a common purpose. Blame and distain absorbed the culture. **The system was broken.**

What would Deming Do?

KNOW WHAT YOU ARE LOOKING FOR.

“It is not enough to do your best; you must know what to do, and then do your best.” (Deming, n.d.)

Not knowing of Dr. Deming and his work at the time, I was still fully aware that what we were doing was not working. It was not creating the result we were looking for. I worked with my team to look at the issue again. I wanted to take a deeper look into what the actual problem

was. It seemed apparent after years of this flawed system that employee's behavior had little impact on the end result. Our best employees were struggling to meet quotas. Employees who were excellent on the shelter side had been promoted to the field and were facing the same struggles as the other officers. The problem was not the employees.

DATA DRIVEN DECISIONS.

“Data are not taken for museum purposes; they are taken as a basis for doing something. If nothing is to be done with the data, then there is no use in collecting any. The ultimate purpose of taking data is to provide a basis for action or a recommendation for action. The step intermediate between the collection of data and the action is prediction.” (Deming, n.d.)

We needed some data to determine what was working and what was not. We started with our front counter and field sections. Our first step was to get some feedback from the public. We asked people to answer some survey questions. We asked those planning to turn their pets over to us to share their reasoning. We tracked this data for a year at first to see if there was any seasonal or unusual trends that we were not aware of. Our position and hope moving down this path was that rather than fix a leak in the pipe, maybe we could just turn off the water.

What we found through our survey data and results is that we were wrong about why people turned their pets over. The most common reasons for turning a pet over to a shelter was the person was moving and issues with landlord disallowance, personal issues such as health or a death in the family, no access to sterilization services, the cost of owning the animal, and inability to take care of health issues with the pets or provide proper veterinary care. These issues showed that there may be some negligence by owners, but several of these concerns were legitimate problems that do not have simple solutions. We also found that several of the issues happened year round, but that we saw an influx of some of the issues, relating most to pet care and health, during the winter months.

KNOW YOUR BUSINESS.

“To manage one must lead. To lead, one must understand the work that he and his people are responsible for”. (Deming, n.d.)

I also wanted to identify this issue from the field officer’s perspective. I wanted to see the interactions they had with people and what circumstances ended up with the animal coming into our care. What I found from this experience with the officers is that they had many calls that the most appropriate action was to take the animal to the shelter with the resources they had available to them. It was evident that the better way to reduce the number of animals coming in to the shelter was to provide more resources to the public. These resources would allow them to keep their pets and free up space and time spent at the shelter taking care of those animals.

REMOVE OBSTACLES.

“Money and time spent for training will be ineffective unless inhibitors to good work are removed.” (Deming, n.d.)

The resource that was easiest for us to tackle was providing low or no cost spay and neuter. We already employed veterinarians to take care of spay and neuter services for shelter animals so we made space in our schedule to provide this service to citizens that interacted with officers and had no other resources available to them. This produced a program called ACO Cares where the officers were granted flexibility in offering free sterilization to the public in instances where they were going to turn their animals over or when the sterilization would provide a benefit to the community. We also started a program to help board animals, rather than forcing residents to turn them over and expanded the criteria for protective custody when their owner suffered a health or medical condition.

As far as residents moving and landlord issues, the biggest hurdle to tackle on this front was removing breed specific legislation in Utah. Many cities, prior to this change, still had restrictions on specific breeds living in their communities. These restrictions were not based on

the specific animal or its behavior, but only the animals breed alone. Many people were forced to turn their very well behaved pets over to their shelter based solely on the animal's breed. With the help of rescue groups and national organizations, we were able to successfully remove and ban this type of legislation in the state. (King & Okerlund, 2014) This drastically helped to eliminate this issue as people were now allowed to take their existing pets to new places that they moved to.

The two remaining issues, cost of pet care and veterinary care, were going to be the hardest to tackle. First, employees in our industry do not believe that people should own pets if they can't afford them. They have strong feelings about how irresponsible it is to obtain a pet without the knowledge of its basic needs like food, grooming, vet care, etc. Second, private entities provide most of these services and it would be a challenge for us to provide these services without the Utah Veterinary Association or grooming businesses being upset with our agency "stealing" business. Lastly, all of these services and resources are quite expensive and have an out of pocket cost with them that we didn't have with the other services we were providing.

Pandemic Shift Forces Deming Service

When the COVID-19 pandemic hit in 2020, our agency had major concerns with the number of animals that would be entering the shelter. Utah's unemployment rate rose to a staggering 9.7% and nearly 156,000 Utahans found themselves without work and without their normal social support system. (Semerad, 2020) With tremendous job loss and staggering unemployment rates, many people are forced to make difficult decisions concerning their pets when facing financial crisis. It seemed inevitable that people would be forced to turn over their

pets and we were desperate to embrace something different to hopefully prevent this outcome. Like Japan and others who have embraced Deming's teachings, we were at a point that we were open to new ideas and theories to solve this problem.

The need for action forced us to take a decision making risk (that would not have been if we had used Deming's Model in advance). We made the decision to reallocate funding from care of shelter animals to help provide for owned animals in our community. Our funding, along with some federal and community grants, were combined to create the Pet Food Pantry. The community's need for this service was astounding. Each month as these events expanded, we helped more and more animals. The popularity of these events grew and local businesses started donating pet food and pet supplies. With over \$50,000 in donation for this service thus far, we have helped over 6,000 pets and 1,100 household who may have otherwise turned their pets over to the shelter.

We are also seeing the residents are using it to keep their pets out of the shelter and discontinue use once they are able, which leaves the resource available for others who may need it. By offering the service freely, citizens are self-regulating accessibility and helping others by providing some of their own resources as well like blankets, toys, collars, etc... The very industries that we were concerned with fearing this type of program are helping sponsor its success. This helps those businesses create positive public relations, keeps all of these pets in their original homes, and benefits our agency's bottom line.

A System of Profound Knowledge

"The System of Profound Knowledge provides a lens. It provides a new map of theory by which to understand and optimize that we work in, and thus to make a contribution to the whole country." (Deming, n.d.)

By making all of these changes, we have reduced our annual intake of animals by almost 3,000 pets and have maintained that number for the past 3 years. We are able to maintain this number with our population going up by tens of thousands of residents in the same timeframe. We have driven out fear in our field officer position and have given officers the flexibility and resources they need to perform their jobs well, without quotas or unattainable expectations. The public is happy with our service and we are seeing less homeless pets.

I wish I had known Deming's theories earlier in this process as any success we gained from this program changes was not from the system's angle, but more from trial and error. I believe we could have fixed the problem faster and more efficiently if we had looked at it with Deming's systems lens. It is clear that our agency needed a fresh set of eyes to ask "why" the problem was occurring. It is gratifying to know that we used many of Deming's system approach methods without even knowing it.

I plan to take a look at this issue again using Deming's framework to see if there is more that we can do to enhance this system and make it more efficient. We can also apply this model in many of our functions to better serve the people and pets in our community. As Deming stated:

"...a person and an organization must have goals, take actions to achieve those goals, gather evidence of achievement, study and reflect on the data and from that take actions again. Thus, they are in a continuous feedback spiral toward continuous improvement." (Deming, n.d.)

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