

Making Ideas Work in Automation for Highly Regulated Industries



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CEOCFO: *What is the overall idea behind Huffman Engineering, Inc?*

Ms. Huffman: Huffman Engineering is an engineering and control system integration firm. Control system integration has to do with computerized process controls on industrial and utility processes. We also do engineering consulting, studies and design.

Control systems control production and operation of equipment from manufacturing and medicine to help people and animals, to food distribution and food handling in manufacturing, to water and wastewater treatment plants. Processes are regulated and different elements can be managed. Information is then sent back to the operators and people running the plant, whether it is utilities or industrial.

CEOCFO: *Do most companies today have some type of system in place and they are looking to upgrade, or are there still some systems that really are not talking with each other throughout a manufacturers location?*

Mr. Huffman: I would say that most companies have some systems automated. Most have been somewhat put in, but not necessarily well thought out. The client may put in a new process, and five years later they have to put in a different process, so it is just the name of the game that things are added. This may be due to growth like adding production lines or updating an outdated legacy system.

I would say some manufacturers are highly integrated. Most of them are not. They are either islands of information or they have some crude method of getting the information back and forth between one process and another. And that's where we come into play. Synthesizing that information for them to streamline their processes.

CEOCFO: *When a client turns to you, do they know what they want? Is it more that they want better communication between their systems, and they look to you to figure out? What might a customer want and what you need to do to get them there?*

Mr. Huffman: In general, they are looking at the end result, whether it is increased productivity, increased reliability, increased gathering of data, or increased safety. These are some of the areas they are traditionally looking for.

"Customers have told us two things they like; the relationships built and the results achieved. The relationships are about being a part of their team. We want to make our customers better. We want them to be faster, we want them to be safer, we want them to be more productive, we want them to understand what is going on in their process." Howard Huffman PE, President

In some cases, they have the people on staff that can do it, but the people do not have the time. In other cases, it is specialized expertise that we have, and they come to us. Many times, it is a concept.

Our tag line is, "*Making Ideas Work*," and they come to us and say, "We would like to do this, how can we go about it?" Then we use our expertise to figure out if it is possible, and if so, how do we do it, what will it cost, and how long will it take.

CEOCFO: *What goes into your analysis of a project? What might you look at that less knowledgeable people do not recognize is important when crafting a solution?*

Mr. Huffman: Will this be a value add to our customer for the long term? You shouldn't do automation for automation's sake, but there are applications that can make our customers so much more productive, efficient and safe and if those are their goals and we can help them, we want to. And our engineers are highly-skilled and have the ability to bring those ideas and designs to the table. The critical questions we ask to analyze projects include:

- Do we have knowledge of their industry
- Do we have experience in the technology and process
- Can we meet their schedule and budget (if known)
- Can we have a long-term mutually profitable relationship
- Have we worked successfully with this customer before or do we believe this could be a successful partnership

As far as important insight, I think the experience and training plays a big part in it, probably more experience than training. The key factor is paying attention to critical details. If you do not have experience and have not been burned enough you will not know what the errors are that can damage a project or make it less successful. Learning from those early experiences have made us a stronger company.

CEOCFO: *What have you learned from experience that you on the lookout for now? Would you give us one or two specifics?*

Mr. Huffman: Our process – detailed execution from start to finish works. I heard Jocko Willink say once that, “Slow is Smooth and Smooth is Fast.” That slogan applies to what we do, and we have learned a lot in the last 35 years.

I will give you a couple of things we lookout for now. One of them is someone who is in a real hurry. That means that you are putting out a fire, and that is no way to build something good, when you are trying to put out a fire. Another case is that they want you to do it their way, and that is the only way that you can do it.

Also, one of the things is that they do not have automation in their plant. They do not know what is involved, of if they have not done a project, they do not know what is involved, and that takes much more communication.

Then the third is that they do not care how it is done, they just want the lowest price, and in our mind, there are always people that can do something cheaper, they can always pay less, so we’re okay if they go there. I think the price, the rush and there are some people that put off things for way too long, and then it becomes an emergency.

Sometimes there are some legitimate emergencies that we help with. A plant shutting down based on a cyber-attack is one example, but we try to work with our customers ahead of any emergency so there is a planned update not a panicked one.

Ms. Huffman: One other thing that sets us apart, that makes us a little different than some other systems integrators is our value. People see the value that we bring and many of our clients are long-term clients. We have had some of them for over 25 years. We have had them because people see us as experts, not only in control, but in being able to listen and understand what they need. That is a fundamental part of the idea of *Making Ideas Work*, and we understand that.

The other thing is that, unlike other firms, we have many degreed engineers on staff, several professional licensed engineers and experienced technicians. Some firms have mostly technicians. Our combination of engineers and technicians are very, very good at what they do sharing their depth of knowledge and understanding that comes from the ability to reason well, and our staff does it well.

CEOCFO: *Do you find it easier to attract and maintain staff? Do people like to work at Huffman Engineering because you recognize their importance?*

Mr. Huffman: The easy answer to that would be “yes.” I think the way we value them is the differentiator. We hire smart people. We challenge them. We give them responsibility. We give them the opportunity to brush up against the guard rails of failure, so they are not given slam dunk jobs, they are given hard things to do, and then they do it. Another thing is that they realize that what we do, working in water, pharmaceuticals, or food, or in electrical utilities; we are doing work that brings value to our communities and to society in general. I think that is a key factor as well.

Ms. Huffman: Hand in hand with that, I think that we really value professional development. We make sure that our people have the mentoring and training, whether it is paid for or side by side training, that they need to do their jobs well. The other thing that we provide for them is up to date tools and the types of things that they need to do their jobs well. Therefore, they make a difference, they have the means to do it, and they have a good support system and ability to grow.

CEOCFO: *There are so many changes in technology. How do you design a project that is the best it can be at the moment, but will not be replaced by something a little better 6 months down the line?*

Mr. Huffman: That is a very good question, because you want to be out on the leading edge, but you do not want to be on the bleeding edge. We have limited the number of hardware platforms that we work with to in general three. There are the main manufacturers, Rockwell, Schneider and Siemens. Then we have them come in and give periodic updates on what they have done, and using their same stuff over and over, we get good at it and knowing what it can and cannot do. However, it is a valid question.

Consider this. Smart phones last a couple of years, and we are putting in complex computerized systems. Some of them have been in for 20/25 years. They are grossly out of date, but they still work. Therefore, it is an issue that all

manufacturing facilities and utilities have to deal with. Why replace something that is working? It's a valid question and one we work through with our customers. It's gratifying to see a well-executed change work well and new automation that can prevent an unplanned shut-down.

Ms. Huffman: Because we work on the leading edge of technology in industrial and utility work, our hope is always that we're implementing a system that will continue to benefit our customers for the long term. Unlike a phone, due to the magnitude of the systems we're putting in, longevity is crucial to the productivity, efficiency and safety of the industrial manufacturers and utilities we serve. Although hardware and software often require regular upgrades, the control system architecture we program should last a long time even through multiple technology upgrades. The other benefit we have as an engineering firm is that we are able to customize and configure components to allow our customer's own personnel to utilize those same components for a multitude of tasks or differing recipes.

CEOCFO: *How are you navigating the supply chain, shortage of chips, other issues of concern today?*

Mr. Huffman: The big issue is the volatility of what is available and what is not. What you might have been able to get in a week, a month ago, it might be 2 months now. When we propose a job, it might be weeks, it might be months before we get it. Therefore, there can be a price change in between there, and some of the parts or equipment that you might have specified is not available or there is an extremely long lead time. We have not found an easy solution. We try to get as much information as we can up front, notify the people that we are purchasing the hardware from, "here is what is coming down the pike," and if we know something is going to be delayed, there is usually something comparable that you can use. However, it is a difficult thing. There are many last-minute adjustments, but honest communication helps.

Ms. Huffman: One thing that I am seeing is that we have developed strategic partnerships with some of the manufacturers, and we have certifications that show that we have with some of our vendors and also, with some of our clients. What we have said is that we are going to do the best job that we can for you, so when supply issues come up, we are better able to carry on those conversations that help us adjust and help us to really make their ideas work, even though we might not have every single part that they want.

CEOCFO: *What goes into implementing the solution? How do you help with the trepidation of change and switching to something new?*

Mr. Huffman: There is a pain point customers have to reach, where it is more painful to stay where they are than it is to change. The way that we go about alleviating some of those fears, is number one, with good communication. When we are trying to scope out the job, we write in our proposal, "here is what it is going to do, here is what it is going to be, at the end, here is what we are going to use," and we go over it with them, so that we are on the same page. Then, during the design phase, we write up requirements; "here is how fast it is going to move, or how much it is going to make, or how accurate it is going to be," and they agree to that.

Many times, hidden things come out that you did not know about, and you have to make adjustments. Our process works well for that. We design, program and build it and we test it in our shop, and they will come over and observe it working, and again, they will say, "I did not think it was going to work like this, I did not think this button was going to be green, I thought it was going to be red," so we make the change before it leaves our building. Then when we start it at their facility, we go through and test everything again, provide training for the people who are going to be running it. You are still changing the way that some people do their job, and that can be scary. However, by good communication and good design, you can alleviate quite a bit of it and ultimately show them a more efficient and successful way of doing their job.

CEOCFO: *Overall, what types of change are people most looking to accomplish? What can you do for potential clients that people are not recognizing is either available or meaningful?*

Mr. Huffman: One saying that we have had for a long time is that we try to work as an extension of our clients engineering group. We do not want to come across as just a contractor, you walk in, do something, and then you leave. We want to make sure that it runs correctly, that we understand what they are trying to accomplish, and that it meets the requirements that they need to have, to make their product either cheaper, faster, more consistent, or safer.

CEOCFO: *What is your geographic range today? Do you see that changing?*

Ms. Huffman: Our geographic area currently is Nebraska and the contiguous states, Kansas, Iowa, South Dakota, Colorado, and Wyoming. We now have an office in Colorado, so we can reach further west. When our valued customers

ask us to reach beyond our traditional borders we do. We have been asked to go other places, based on the abilities that we have, especially for manufacturers.

I think as we grow, we are going to have to look at reaching out to other places. We have had some success in solving problems that even some of the manufacturers have been unable to solve, and that has put us in a position as trusted advisors. As we work with our valued customers and different manufacturers, we will be willing to consider going where we are needed.

CEOCFO: *Would you tell us about being named the 2022 System Integrator of the Year, by Control Engineering and Plant Engineering Magazine?*

Ms. Huffman: I have to say that it was a confirmation of what we already knew about who we are, that we are professional, we make ideas work, that we can get the job done for people, and that we have a team of people who are continually growing and reaching for new ideas and it also confirms that yes, there is a reason what we have been in business as long as we have. It is because we can do the work and do it well. It was a tremendous honor, but it was more about our team than about us, because our team is strong.

Mr. Huffman: My answer to that is that, starting out as an engineer, and then working with Wendy and some other people as well, to develop a business, has been very satisfying, and to now see people recognize it and be evaluated against other good companies, and come out as Integrator of the Year, it is awesome! I know many of the companies who have received this honor in the past and it is good to stand on the podium with them. It was satisfying to see that we are doing things right, as rated by someone else.

CEOCFO: *How is business?*

Mr. Huffman: Really good! I will say that we have an adequate workload. Everyone is busy and challenged. There seems to be a lot of work coming up, especially in the areas of robotics and automation. If you look at the economic indicators, some people do not want to go back to work, but manufacturers still have to produce a product, water plants still have to make clean water, wastewater plants still have to get rid of stuff in dirty water, so automation/robotics is going to be a big help in that area. I think at this point in time, we are in the right market because we have the knowledge and skills to execute on those needs. There are many good integrators, and we are one of them.

Ms. Huffman: The other thing, if I look at how business is, yes, the numbers say that we are doing pretty well, but what is even more exciting is to see the growth. To see the growth in individuals here and their abilities, and their passion for providing good things to their community is just tremendous! Therefore, our business is good, we are doing impactful work!

CEOCFO: *What are you surprised we can do with technology today? What are you surprised we cannot do yet? What would you like to be able to do?*

Mr. Huffman: One of the things is the speed at which we could make decisions and get information to people to make good decisions. Machines are moving way faster, they are moving way more efficiently than what they used to, they are way more accurate. Knowing how we used to do it when we started, it does not take us as long to do it now, because of the processing power we have, and there is so much more information you can get out of process; you can record it, you can get reports out, you can make companies much more efficient.

Some of the things that are surprising that we cannot do; there are some things that humans can do much better than machines. An example of that, particularly in the food area, is in meat processing. Humans can make decisions, they can look at a carcass and know exactly what to do, whereas a machine does not have the vision that people do. They do not have the memory capacity that people do. We worked on a project several years ago, where they were trying to x-ray and know where to make cuts and it just was not fast enough. People are much better at the non-mundane things than machines, but machines are very good at handling the mundane and the highly calculated. With intuitive decision making, automation is still not there.

CEOCFO: *Why choose Huffman Engineering?*

Ms. Huffman: Huffman Engineering is the company that would be selected because someone wants a product that works, that works well, and works the way they want it to. Our tagline is "Making Ideas Work," and our core values

support that, from simplifying the complex and embracing difficult challenges and making others successful, among others. What we do is we care about our customers and clients in their success as well as our own. If someone is going for a low price, it might not be us. However, if they are going for high value, we would be the company that they would choose, one that is eligible, that listens, and can accomplish the task.

Mr. Huffman: I would piggy-back on that, that the customers have told us two things they like; the relationships built and the results achieved. The relationships are about being a part of their team. We want to make our customers better. We want them to be faster, we want them to be safer, we want them to be more productive, we want them to understand what is going on in their process. Therefore, we have to be a part of their team, not just a contractor. The results we get are partially due to the process we take, the documentation that we furnish, the testing that we do. It is going to work when we are done, and we have proven that over and over, so there is a confidence. You mentioned earlier about nervousness. There is always nervousness when you do something new, but there is a confidence at the end, that this is going to work, and it is going to work well.

