

# 2014



## Finalist

**Excavating Solutions**  
**Philip Paull**  
**Indiana**



## Chipmaker Challenge

Excavating Solutions was born out of necessity. The necessity; being the financial crash that hit the housing market at the end of the last decade. As a lifelong excavator, suddenly the lot was full of idle heavy equipment and very little work on the books. The business philosophy and model had to be reinvented. The dream was to develop robotic machine control systems to adapt to the new economy. The new economy being the expanded use of machines in the most efficient manner, while relying on less labor. Giving an operator the ability to use his equipment to perform many tasks, never before possible, thus eliminating under-utilized labor. Allowing key employees to perform important tasks while financially benefiting from a higher rate of return due to the advanced technology. For years we were a “test hub” for early machine control that was ineffective and unreliable. After trying to convince large corporations what they needed to improve current systems was a different way of thinking to solve the shortcomings; and being told in a polite fashion that we were crazy, we decided to step into the arena and build our own system. Two courses of action were developed. The first was straight forward. The second was a global odyssey.

The immediate course was to take 20+ years of excavating experience and begin building attachments to that would increase the efficiency of the contractor. With a patent and several pending, the new venture began in earnest. The old business model of relying heavily on labor was refocused on technology in order to capture a global audience. 35 employees became 3. Google searches and a massive online video catalogues became the new standard. 3-D CAD drawings and CNC cutting tables became the new weapons to effectively manufacture a dozen different custom attachments.

The second piece of the puzzle was to create, patent and manufacture a product with global appeal for excavating machines. Machine control for excavator was the unique space to occupy. Multi-billion dollar corporations have been working on this for decades with little marketable success. The David vs. Goliath image is thoroughly burned into our psyche. Our vision was set and the odyssey began. Armed with an IPAD, a round trip ticket to Germany and some comfortable shoes, the global search for partners began.

The first partner to emerge was 3B6. After attending Bauma 2010 in Munich Germany, a deal was struck to rebuild and revitalize a dig system they had dormant on their shelf. After several years R & D and 100's of upgrades and advances, the IDigBest system is quickly emerging as a leader in machine control. The system is visually appealing and loaded with one touch convenient functions to tackle any project. The biggest advantage our system has over all the competition is simple. The system was designed and built by a lifelong excavator for excavators. We know what an excavator needs to be successful!!

Now for the game changer: **Machine Control**. We partnered with SunSource to develop our patented hydraulic valves necessary to steer the bucket through the earth. The valves had to fit onto any size and brand of machine and surpass the performance standards of companies such as Caterpillar and John Deere to give customers the confidence to integrate our system into equipment that can surpass \$ 500,000 in value.

The unique selling proposition becomes machine control for an excavator for the first time. No other system can deliver the same result. All of the leading equipment manufacturers are taking notice of our system and talking to us because we have been able to develop a system that works. The hook is providing an operator the confidence and ability to pull grade, perfectly whenever it is required. The system is helpful to any operator's skill set. The most seasoned pro knows with one touch he has left the perfect ditch and a newer operator can focus on managing the dig, loading trucks all the while knowing when it comes to the most critical phase; he will perform at the flip of a switch.

Winning the Hurco VMX42i would be a huge boost to our company's future. Obviously the financial gain of winning the machine would help with cash flow and our overall cash position. Beyond that, as we have demonstrated with our CNC cutting tables, the speed and efficiency equals a huge success for our production capabilities. The 5-Axis machine will allow us to make our valve manifolds in house as well as provide huge time saving in our R & D efforts. The savings will reduce our current manufacturing cost by approximately 60%.

The greatest manufacturing problem we face on a daily basis is having our parts ready for production. With having a large product lineup, the ability to change gears and quickly produce very unique parts is essential. The VMX42i will impact our production time dramatically. The machine will also open up many new avenues for Excavating Solutions. We have the good fortune of having many codes in hand and the skilled people in place and ready to run.

The greatest business challenges we face as a small business are generally two fold. Cash flow dictates the speed at which we grow. Cash flow affects the speed at which advertising dollars are allocated, talented people are secured and equipment and technical advances are put in service. The even greater challenge to a new product such as ours is **AWARENESS**. Letting the industry know and understand what we have accomplished is more difficult than it may appear on the surface. Hydraulic engineers who have been working on or around the concept of machine control for years usually say what we are doing is impossible. They will give every reason in the book to say it won't work until they actually run it. Then they scratch their collective heads and try a different avenue to question. Slowly they warm up. But it generally takes a new product manager standing over them drooling to bring a new product to market. The end user we meet at tradeshows generally fall into two categories at first. Either they believe that they are the best operator to walk the earth and have no use for something that only makes them better or they simply cannot believe what they are seeing. 20 minutes of a demo and they are all believers. This is why we focus on videos through social media to reach the masses. Seeing is believing and the only way to introduce new technology is to let the market know it exists. Machine control for excavators is something that has been talked about for years but now it's finally here. This is our mission.

The awards and accolades we can proudly stand behind are our US Patents.

We have had the good fortune of establishing many key relationships from very early on. The obvious ones are our two main suppliers, 3B6 and SunSource both giving us very powerful resources and production capabilities. One that has been quietly referenced is our Patent Attorney. He also holds a

PHD that has helped him better understand the science and methods behind our innovations. Because of his efforts, our Intellectual Property will be well guarded as we grow. We also forged a strong alliance with SignalQuest. They make what was the last piece of the puzzle for us to develop Machine Control. They are a group of sharp Brown graduates who were doing some amazing work for the military. Specifically gyroscopic sensor to stabilize drones. Once we met and explained our needs, we were off to the races with their sensor leading the way. We met the COO of Caterpillar in Germany at Bauma. He opened the door for us to present our system to his company. It still amazes me how many industry professionals and competitors have helped me promote machine control. The most fun we have collectively is watching the "light come on" when someone sees our system in operation and finally gets it.

Envisioning the future is exciting. The platform the dig system has created has many more applications to go. The focus of the immediate and near future is the O.E.M market. Our targets are Caterpillar, John Deere, Bobcat, Liebherr, and Volvo to name a few. We are currently selling strong quantities of our systems with the 5 year projection in the 100,000 unit range. Best industry estimates forecast 90,000 excavators being produced each year. Our system benefits every brand and size machine coming off the assembly line or already in the field. The distribution network for the after-market is well under way. We have the same brand philosophy as intermittent wipers in your car. It does not matter what type of vehicle you drive. The intermittent wiper technology is good for any vehicle and any driver. Our machine control has the same overall benefit. All I know for sure is that a well run organization, chalk full of innovative products, with strong manufacturing capabilities, will produce one hell of a ride.

Thank you for the opportunity to tell our story.

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