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The Apprentice and the Toolbox

Trust and the Art of CM

by Rick St. Germain
CMPIC Canada

It was time. Both bathrooms upstairs had seen better days and desperately needed a makeover. One tub had a nagging leak that stained the kitchen ceiling below whenever we used it. I know my limits — we booked the pros to do the reno.

Kevin was the master craftsman assigned to our job. He patiently directed and taught two apprentices he brought along to help. Jason, the more experienced one, was a dynamo in a small package and could be relied upon to get his assigned tasks done. Max was pretty green, right out of trade school.

After the first bathroom space was gutted and ready for the plumbing work, I happened to overhear Kevin briefing the younger apprentice on the upcoming task. He pointed out the broken pipe connection and described the repair.

Then came an extraordinary moment. Kevin handed his toolbox to the young apprentice, and asked him to organize the contents.

"Okay…" Max hesitated, "…just tell me where you want things…"

With great patience, Kevin explained to the lad, "While I'm working, I'll be showing you how to get things done quickly and well. But I don't want to waste time looking for the tools I need, so I'll be relying on you to hand them to me quickly when I ask."

"That means that you need to organize my tools so that you can find them quickly for me."

A broad grin spread across Max's face. "I can do that," he said.

Trust

There are some important lessons here for us in the CM profession. The first deals with trust — the privileged relationship we establish with our company and the people we serve.

Our corporate information is the single most valuable asset that defines

our products and our reputation to the marketplace. Like the apprentice in the story, we in CM don't own the assets. Instead, those assets have been entrusted to us to organize and manage effectively for the benefit of the true owner — our company. This is the same kind of trust relationship we have with our banker or financial advisor when we entrust our own financial assets with them to manage on our behalf.

This trust relationship carries with it great responsibility. It means that our actions as CM professionals in managing this corporate asset have a direct impact not only on the quality of our products but also on our company's reputation. It also means that we have a responsibility to both advise and guide our users on their role and contributions towards this corporate asset. It's a great responsibility, not to be taken lightly.

Initiative

The second lesson deals with how we manage that information asset. Like the apprentice, we organize our company's information assets in a toolbox of sorts — a structure — that allows people to quickly find what they need. Organizing those assets is an active, conscious act.

To maximize the value and quality, we need to move beyond the passive act of making information available; to instead base our practice on the principle of creating an environment that will proactively push information, just-in-time, to the people who need it.

This proactive approach has a direct impact on reducing the overhead and improving the efficiency of gaining access to the information that our users need to do their work. Organization and structure are necessary but not sufficient — we need to actively push that information into the hands of those that need it.

Awareness

To do that, we need to be intimately aware of the changing needs of our users and to be able to adapt repeatable process to meet those changing needs. This brings us full circle back to that trust relationship between ourselves, our company and our users.

Like the apprentice, we need to invest our time and effort in building and maintaining a sound professional relationship with our company and our users. We need to cooperatively develop processes that meets their evolving needs.

However, there's a key difference that we need to remember: we are not apprentices but master craftsmen in our own right, responsible for a key part of a larger ecosystem nourished by the flow of information.
Ours is a professional relationship among equals and we need to treat it as such.

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The Acquisition
Software Development CM

by Jon M. Quigley, Kim Robertson, & Joe Townsend
Value Transformation LLC

A Time for Strategic Growth

Mike Tarquist sipped his cold coffee and looked around the room. Sean Ironist – finance – was talking with Samantha (Sam) Vandonagan – contracts. Fred Keating – IT – was hunched over a laptop. Cragin Stewart – facilities – was sitting next to Sangita Morales – C&DM. It felt odd not to see Akio Akiyama, with whom he had done much to shape the culture of the company. Mike put down his cup and cleared his throat.

"I'd like to start by summarizing where we are with our long term plan for responsible and sustainable growth. Over the last two years, we have expanded our strong position in the Test Equipment market through programs such as Game Changer. We have made inroads into new markets through our partnerships with Mitsikara, BGS, and ACS, and we find ourselves in the unique position of having capitalized upon our exceptional talent base to the extent that we now enjoy a 5 year backlog for our products."

Mike continued, "Recent introduction within the industry of rapid generational developments in additive manufacturing, along with the emergence of quantum technologies, such as those provided by D-Wave systems, present Genesis with great opportunities to rise to the next level or to fall by the wayside like many of our competitors. We have been successfully funding small start-ups, developing technologies we will rely on through gofundme, Kickstarter, Indiegogo and other crowd-funding avenues.

"One start-up called QuBitics," Mike explained, "has come up with a unique approach to multi-state data capture, profiling, and analysis that would provide us with a four to five year technology advantage. I believe it is time to acquire them before someone else does."

Fred tore himself away from his laptop, "Just what do you mean by multi-state? How can anything be multistate in a base two system … It is all either a one or a zero!"

"Under a base two systems, that is true," replied Mike. "We have relied on Boolean algebra rules based on I-Ching hexagrams for five decades now. I firmly believe that is about to change. QuBitics programs specifically for D-Wave and others developing or producing quantum computing machines. I believe non-base 2 systems will place us all on the same playing field again when it comes to cyber security."

Enter the Reverend Dodgson

Sean piped in, "If we assume that non-base two computing is the future, how do we know that QuBitics is willing to entertain a buyout or even a deeper partnership than the funding we've given it through Kickstarter?"

Sam laughed. "They approached Mitsikara and were channeled to Akio, who put them in touch with us."

"Akio supports this?" Fred asked.

"Akio believes that what QuBitics is doing is important." Mike answered. "The question is: 'Do we?' It fits in well with our emerging simulators market, as well as with our hopes to take the next leap in test equipment capabilities."

"Exactly what did Akio say?" asked Sam.

"Ah," replied Mike. "Akio is bound by strict non-disclosure rules. He can be rather cryptic at times."

"And …" chimed in Sangita and Sam together.

"He said that he had just returned to Japan from the Training and Simulation Industry Symposium (TSIS) in Orlando and QuBitics was just what we were looking for and that Zubin Rhumba had a message for us", answered Mike, "'There's a porpoise close behind you, and he's treading on your tail … turn not pale, beloved snail, but come and join the dance.'"

"Zubin is their counterintelligence officer," Sangita said. "I asked a few casual questions of our lead programmers and found a weakness in our device programming that, if exploited, could do great harm to our existing device designs. I do not think that Zubin's warning should be taken lightly. We know that Reddick Enterprises, our largest competitor, would do anything to get the lead on this."

"So the question remains," Mike looked around the room and said, "Do we jump down the rabbit hole?"

The Red Queen

Jason knocked three times before entering. "I really don't like to interrupt the meeting, but you said to tell you if something came up. Zuberi called and said the red queen is in motion."

"Thank you, Jason. Can you get Erika Muller at QuBitics on the line? I'll take it in here, on the conference line." Mike replied.

Mike told the group, "If we are going to move we have to do it now."

The phone in the conference room chimed and Mike stabbed at the answer pad. "Hi, Erika. I'm glad that we were able to reach you."

"Your timing is impeccable," Erika replied. "Excuse me … Who? Ask them to hold. Sorry about that, Gabriel Sanderson from Reddick is on the other line, so we have to make this a short conversation."

"Ah," replied Mike. He looked around the room and was met with nods of agreement. "We would very much like to start discussions about a buyout. if you don't entertain any other offers at the same time you are talking to us."

"That's a hard one, Mike," Erika laughed. "We are in a bit of a financial bind and were contemplating entertaining all interested parties. You just happen

to be the first we contacted; but we did reach out to Reddick when we didn't hear from you."

"Understood; I would have done the same thing." Mike answered. "We are prepared to put down, say, $300,000 as, let's call it a 'bid entry'. Would that give you enough incentive to give us exclusive discussion rights for 60 days?"

"Make it $350,000 and you've got a deal," Erika said.

Mike looked at Sean and Sam. They nodded. "Done,. Jason will work out the details. How soon can we meet?"

Interface Soup

A week later, Sangita Morales stormed into Mike's office. "I sure hope you know what you're doing. There's no doubt in my mind that the folks at QuBitics are brilliant programmers, but they are totally without discipline. There is no processes, no documentation, no configuration plan, everything is done using GIT/Subversion and they are half way through a deliverable that they are to provide to D-Wave next spring."

"Go on," Mike calmly replied. "We use RTC and they use GIT/Subversion. I don't see an immediate issue."

"You don't see an immediate issue!" fumed Sangita. "We are ISO certified. I don't know how we are even going to start getting from where they are to where they need to be if we go through with a purchase."

"The same way we always have done business," Mike answered. "An open mind, an open heart assuming good intentions, and working through the differences with our customers, partners, and employees one at a time as we strive for a win-win outcome."

"You just don't know…" started Sangita.

"Sangita," interrupted Mike. "Akio recommended you for this directorship because he saw something in you that he trusted. Do you remember what I told you when you were given Game Changer?"

Mike continued, "As I remember it, I said that your role here is what you make of it. Your background makes you the perfect fit for this effort. We need you to use everything you know from this point forward."

"Got it," Sangita sighed. "What would Akio do?"

"That really isn't a valid question. The real question is, 'What is Sangita is going to do?' You can make or break this deal!"

She smiled. "I think I'll go home, get some sleep, and approach it from a different angle."

Collision Course

Erika had been busy trying to contain a company-wide insurrection at QuBitics. During the first week, the Genesis team had been very disruptive. Instead of listening to what QuBitics was doing and why, Genesis had been explaining how Genesis did

things. She wasn't sure how well the next round of talks was going to go. It was all she could do to get the QuBitics team to agree to meet, and her own anger was building.

The atmosphere in the room was volatile and a single spark would ignite a conflagration that would burn to the ground any hope of a Genesis acquisition. Mike, Sangita, Sean, and Sam took their places at the table. Mike made the opening remarks.

"I would first like to apologize to everyone at QuBitics. If anyone at Genesis came across as insensitive to all that you have accomplished since your startup, during the last week or so. All of this is a bit new to us, as I am sure it is to you. In the past, when Genesis and another firm have agreed to merge, it has been with a firm that is ISO certified and all that implies. QuBitics is a different kind of company and the last thing we would wish is to radically change anything that has made you successful or to change your developmental trajectory. We believe we have found a path forward."

"All that sounds good," interjected Erika. "Just what does it mean? We aren't ready to introduce formal controls in our developmental activities now, and I doubt that we ever will be!"

"What it means is this," Sam replied. "If you agree to continue discussions, you will be set up as a wholly owned subsidiary and allowed to continue along the path you are already on, with no management changes other than briefings to Mike's core management team. Genesis contracts will strive to assure that whatever external contractual work is negotiated allows you to use the development tools you now use. Genesis will also fund Independent Research and Development (IRAD) projects that will spin off to the main Genesis Company after the technology is proven."

"Great!" snapped Erika. "It sounds like there is a hidden 'however' in there and I'm not sure I like it."

There were rumblings of agreement from the rest of the QuBitics team.

"You are right," smiled Sam. "If we can't obtain that

concession from a potential customer, then, working as a team, we will have to decide if the business is worth it or if we walk away from the contract, regardless of how lucrative it might be."

"Just for example, what would you consider lucrative?" someone on the QuBitics team called out.

"It is a matter of scale," Mike answered. "Since we are in the due diligence phase, we know the value of your contract with D-Wave. Would you be willing to walk away from a potential contract of that size? Perhaps. What about one worth 50 times that amount? So far, QuBitics' cutting edge approach to the quantum programming challenge is in a niche market with few buyers. Other firms will eventually catch up to where you are now and the only tipping point may be ISO certification."

"We would walk if it was the same amount as D-Wave," said Erika. "We wouldn't walk if it was something a factor of ten larger."

"Even if it meant losing all future D-Wave business?" Sangita asked. "What if the 'something larger' was contingent on that next equal size contract being from D-Wave?"

"Why don't you think about it and get back to us when you can," said Mike. "We believe we can make sure you have the infrastructure and funding to take you where you told us you want to be in five years. We

are also convinced that the proposed arrangement will also take us to where we want to be in five years."

Retrospective

Genesis QuBitics Systems had been up and running for almost six months and they were closing in on the delivery to D-Wave. After the joint meeting, tensions noticeably relaxed and there had been a 100% "For" vote by the QuBitics team in favor of the purchase. Cohesiveness between the SW development teams was increasingly evident as more QuBitics team members were invited to participate as advisors in ongoing Genesis Test Equipment programs. Game Changer rolled out a fifth generation system that exceeded all expectations for stability and lack of vulnerabilities.

Mike was musing over his trademark cold coffee after receiving another cryptic message from Zubin Rhumba, "Tattered and ragg'd, with greatcoat tied in strings." It was followed by a FedEx package listing numerous data breaches emanating from inside in the Genesis firewall.

Jason knocked on his door, "Erika and Sangita would like a word, if you have a minute." Mike nodded.

"This is a pleasant surprise," Mike said as they entered. "I was just about to call you both. Analytic Systems is saying they have developed what they are calling a 'quantum analogue system'. They are interested in knowing if we would like to develop some software, simulators, and test cases for them."

"A what?" Exclaimed Sangita.

"An analogue system. D-wave's is essentially one where a bit can be zero, one, or both one and zero at the same time. The Analytic Systems unit is one where the bit state is a true base five system. It could be zero, one, two, three or four. Traditional computing is based on 'and/or' statements. The 'and/or' flow can be represented as a triangle with the tip being the starting position and each decision determining the path down the triangle. D-Wave allows two divergent paths down that same triangle. Analytic Systems eliminates the alternate path but allows multiple answers in base five, so the triangle becomes a pyramid. Say the pyramid has a base that is five units long. Your solution set is at unit four. Trace the line across the bottom of the pyramid and any hit on that line is an equally viable solution."

"So 24 in base would be 44 base five or 445 that is a big advantage over 24 in base two 110002. It allows multiple solution sets based on quantifiable parameters like cost vs. risk. I'd like to get my teeth into that one," Erika sighed. "Are we going to go for it?"

"Your call. I'd like to. So what did you want to see me about?"

"We've been talking and the SW engineers across the company are in agreement that we need to change our way of doing things," Sangita said. "RTC doesn't meet our needs anymore and it is getting too costly."

"Agile development using GIT/Subversion is no longer viable for where we are going at QuBitics," Erika chimed in. "We've had some major issues when integrating in an Agile environment. We want something that is common across the entire company."

"I don't see that as a big hurdle," Mike smiled. "Work with Sam to generate an RFP for a new SW CM solution and then make it happen. I'll back you all the way. While you are at it, would you mind taking a look at this and give me your opinion?"
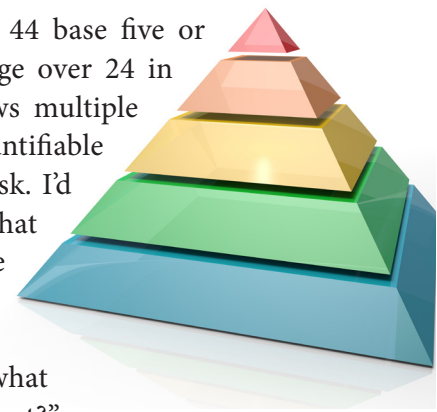
He handed them a transcript of the message from Zubin and the FedEx package.

"After we saw what happened at BSD when they were testing their site hardness, I've had a team from Mitsikara evaluating our vulnerabilities. This is a transcript of what they found over the last few weeks."

Erika's face went pale. "The words are from the Mole Catcher. This proves we have someone inside feeding our IP through the firewall to our competitors! This happened once not long before we joined with Genesis. It cost us big time."

"Are you sure?" Mike asked.

Erika fumed. "This couldn't have been done by an external threat. Zubin is right, we need to find the mole!"

Mike stared out the window. "Say nothing about this breach or the analogue system to anyone. I'm going to see if we can engage Akio and Zubin for a week or so and set up a remote hub so no one knows we are looking for them. Meanwhile, get busy on that RFP."

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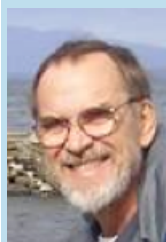
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