The Solari Report

November 29, 2018

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C. Austin Fitts: Ladies and gentlemen, welcome to The Solari Report. We have a great treat with Bill Binney who joins us again, and his colleague Kirk Wiebe from Amsterdam where they have a very exciting new venture that we are going to be talking about today. Not only is it a very exciting business, but it's a very important business. It's very important to us because they are in the world doing this, so I'm very glad that you have the opportunity to hear all about it.

Kirk and Bill, welcome to The Solari Report.

Kirk Wiebe: Thank you, Catherine.

Bill Binney: Thank you.

Fitts: I want to dive into the history. Maybe each of you could give a summary on your history, first with the NSA where your accomplishments were extraordinary, and then the business that you started in the US, and then we are going to dive into your new company, Pretty Good Knowledge.

Binney: In the NSA I was primarily working on, what I called, 'bits & bytes and letters & numbers'. I would solve things like code systems and data systems and work on crypt systems of all kinds. I was having a lot of technical fun and looking at large amounts of data, trying to figure out from the massive amounts of information what was important to look at and what it means.

I was working on human behavior in an electronic form. When people do things electronically with communications or devices and so on, what does that mean in the real world? When they are manipulating these things, what does that imply that they are intending to do? So that was the type of thing that I worked on, and I had a lot of fun doing it. That is basically what intelligence is all about – being able to figure those things out and predict intentions and capabilities of potential adversaries. That was primarily my objective there against the Soviet Union.

Fitts: Your final positon was the geopolitical world technical director, correct?

Binney: It was mainly the Technical Director of the World Geopolitical and Military Analysis and Reporting job. That was the full title and I thought that was fun.

Fitts: You were responsible to troll through all the data on the planet?

Binney: Yes. If there were problems that the analysts were having – and there were about 6,000 analysts involved in the process – I was their technical director. I looked at the things that were causing problems for those analysts and what were the biggest problems, what needed to be solved first, and so on. I looked at the technical ways to approach the issues and resolved them.

Fitts: Kirk, why don't you give us a brief introduction?

Wiebe: I actually began my intelligence career with the United States Air Force in 1963. I had just graduated from high school, and I wasn't ready for college. I needed to have a little more time and more exposure to world events and settle down a bit, so I went into the military. They discovered that I had a pension for languages and sent me to a Russian language school. I was in a nine-month program at Indiana University. I picked up four years of Russian taught by native speakers hired by the US Department of Defense to train Air Force members how to understand Russian.

After that, I went through some technical training to learn how to operate a shortwave receiver because my job was looking for intercepting, recording, and maybe processing – if I could – Russian military communications overseas. I had assignments in Turkey and Japan doing that.

Then getting out of the military, I returned to college at Indiana University, and picked up a bachelor's and subsequently a master's degree in Russian. Then I wrote the National Security Agency, and they said, "Come on down. We would love to talk to you."

So, I became a Cold Warrior back with the Air Force, and I continued with the NSA. The NSA will tell you that there are four disciplines that it is involved in, and the first one is collection of information. You have to have data to look at if you are going to produce intelligence. Then you have to process it, you have to analyze it, and you have to report it. I worked in all four of those aspects of the business. For me, that culminated in 1991 when I was awarded the second highest award that NSA had bestowed, the Meritorious Civilian Service Award for work done against foreign strategic weapons systems.

When we saw NSA turn to the dark side and actually weaponize surveillance and data collection against American citizens – which was absolutely forbidden by law – we decided that we couldn't go in that direction. We parted ways with our alma mater, so to speak, walked out of the building, threw away our badges, and eventually decided to put them on report and tell the American people what had happened.

Fitts: If I'm not mistaken, you both left in October of 2001, right after the Patriot Act passed.

Binney: It was October 31st, Halloween Day of 2001. We went out the door. Basically, when I went out the door, I said, "Free at last! Free at last!"

Fitts: There is a wonderful documentary that I encourage and have encouraged all of our subscribers to watch, and I encourage you again if you haven't. It is called *A Good American*, and it tells the story – among other things – about your work on ThinThread, and then the decision of the US government to go with a different program. I would like for you to give a little description and summary of that.

Binney: ThinThread was our program that we developed to look at haystacks of data and find the needles and pull out only the needles and let the haystack go right by. Fundamentally, we were able to look at all the electronic communications down fiber optic lines and see in there through various technical means or inductive/deductive/adductive type rules. We then figured out what was important to pull out for our analysts to look at for targets that they were analyzing, i.e. terrorism, international crime, and other militaries and governments and things of that nature, and that were legitimate foreign targets for the United States.

We had a program that we developed which we called ThinThread that was able to do that, and it was able to do it on a very large scale. Our first objective was to do 20 terabytes of data a minute. That's four or five libraries of Congress every minute. That is the amount that we could look through at speeds so that we could keep up with it.

The reason we did the program to begin with, was that even in the early 1990's and the mid-1990's, back then the way they were collecting data on the existing fiber lines was burying our analysts with too much data. I would go around to the different analysts that we had working on the problem and, of the 6,000 analysts who I was involved with, they would say, "We're just buried here. We can't get through it. Every day we get 50,000 to 100,000 items, and we can't get through it."

It was basically making our analysts dysfunctional, so we had to figure out a way to do it that would effectively only pull out things that were necessary for them to look at so that they could solve their problem and actually succeed. That was the problem even back then. Now it's order of magnitude is much worse because of all the collection that they have worldwide now.

That's why they can't stop anything such as terrorist attacks and things of that nature. Those things just happen simply because there is too much data to see and assess the threat and determine when and where it might happen.

They are having problems predicting intentions and capabilities because of the volume. So that was the whole idea behind our ThinThread. We wanted to make that a manageable problem, and we actually succeeded at it, but we did it too cheaply.

Fitts: You didn't collect all the data in the world and hand it over to private corporate contractors who could use it for a variety of different reasons.

Binney: Or to other governments or other agencies who could also use it that way, such as the FBI, the DEA, and the various law enforcement agencies who are using it today against people who are inside the United States committing standard crimes.

Fitts: I say to everybody that if you are interested, I think that *The Good American* is a wonderful documentary, and it will really help you understand the history.

Then you left, and you started a company called Entity Mapping. I will say that as a former government official and former contractor, you men available for hire would be an unbelievably attractive opportunity for many government agencies.

I know that you are marketing to government agencies, but the company was not wildly successful. Maybe you could describe why.

Binney: Actually, the problem was that we did succeed wherever we went, and one of the agency heads with a contract that I can't disclose said, "We are going to embarrass the fort," meaning the NSA, and it was only Kirk and I. So therefore, they had to terminate our contract, which is what they did.

Fitts: You and Kirk together could blow the margins for many big companies.

Binney: That is also why they had to get rid of us. We threatened their profit margin. That, together with the agency heads at the NSA and various other agencies in the government, were reasons they got rid of us.

Fitts: The reality is that politically it wasn't attractive to operate, only marketing to the US government.

Binney: Right. The problem was that we solved the problems. When you solve the problems, the government agencies don't have the problems to ask for more money. That takes money from the contractors.

We even knew from some of Congress staff members that the outside major corporations were in the committees in Congress lobbying to get our program killed. The reason they were doing that was because we threatened their ability to get profits from a problem that they didn't want us to solve. So, we had to go.

Fitts: The gravy train depends on nonperformance.

Binney: Exactly.

Fitts: So, then you started to work with a team in the Netherlands. Watching the documentaries, one of them showed you working with a team in the Netherlands, which has now evolved into you starting a company, Pretty Good Knowledge, in the Netherlands. Why the Netherlands? What is the attraction?

Everybody who listens to The Solari Report knows that I love the Netherlands, but why don't you tell me why you're in the Netherlands.

Wiebe: As it turns out when these Dutch persons approached us and said, "How would you like to come out of retirement?" they found us in the condition of mixed emotions. On the one hand, we had tried three times – four if you include while we were still at NSA – to bring our thoughts; our novel ways of thinking about information analysis on a large scale to the marketplace (to the government) and failed. Even though we actually succeeded in making new knowledge discoveries of intelligence importance, it didn't carry the day for the reasons that you just elucidated.

We were so good that we became a threat. We were even seeing into government planning. I think that is what scared them the most – the fact that we were good enough to look at a data set, ask certain questions about anomalous conditions that we were seeing, and saw that it was an attempt by the US government to cover up certain aspects of their own operations. So, we became a threat in multiple ways – to both government and business.

So, these Dutch persons said, "How would you like to join us?"

We, essentially, thought along these lines: There was a slow divide occurring between Europe and the United States, and that is happening even as we speak. The revelations about widespread surveillance; the revelations that large companies like Google and Microsoft were 'in bed' with the US government making data available really bothered Europe more than it seemed to bother a large percentage of Americans.

Europe mobilized its forces within the EU and was actively talking about strengthening privacy regulation, and they finally passed it. It came into force in May and is called the GDPR, which is a way of describing privacy but with real law and legal consequences behind it.

Under GDPR, if any company or organization – including governments – leaks your private data into the public domain, you are subject to a 20 million euro fine for each person involved. Imagine leaking 200 people or 300 people or 500 people times 20 million each. There are severe penalties.

The mood here for privacy and taking steps to guard it was right for us. We didn't see the threat by big business over here the same as we did in the US. We couldn't get past that bubble. We couldn't get above that ceiling in the US because they are so influential with Congress. But over here, not so much.

So, we decided to give it a try. What did we have to lose? Nothing. We were a bit bored, and we were not being mentally challenged in the States, so we decided to do it. We came over and did a lot of prepping during 2017, eventually culminating in our own BV (the equivalent of an LLC) called Pretty Good Knowledge, and opening up officially in November 2017. We are in 2018, and have a number of customers, and are working on others. We are going through all the growing pains of a start-up. We are working together and learning to work with one another, and are succeeding along the way. We are even getting some bites in the US, so we are actually thinking about expanding into the US now.

Fitts: I asked you earlier: Who is your perfect client? We will talk about that shortly, but you may consider working with US companies. I know of several who are going to be listening to this.

First, let's talk about Pretty Good Knowledge. Tell us what the company is, what it does, and about your products and services.

Wiebe: We actually target any organization who is interested in achieving, what we call, 'situational awareness'. If you go into military jargon and google something called 'situational awareness', we are bringing those concepts to the enterprise.

What is the essential operating principal in situational awareness? It's to be aware so that you are not surprised. The more the world unites under the internet and is exposed to life-changing and business-changing opportunities using digital information to communicate, share messaging, evolve, and grow, it also brings with it 'rats'.

You hear about things such as cyber-security, people hacking into systems and downloading data. All that dirty 'stuff' comes with this wonderful thing called the internet that joins the world in a conversation.

We bring the ability to sort that out and the ability to leverage data relevant to any organization that is out there that we can get legally and relates to an organization's business question.

Fitts: So, it's not only an organization's own data. For example, it could be my web stats, or who my customers are, or marketing data, and all the data available publicly.

Wiebe: Absolutely. You don't exist in a vacuum. You have competitors and you have areas of interest that are outside of your own data holdings. So, data is unifying across the globe, and people want to be able to leverage that which is relevant to their activity. That is what we can do.

Beyond that, there is a more technical aspect. Collecting the data – and we just talked about that with the NSA – is core competency at the NSA. You have to process it if you are going to analyze it. So, the other piece that we bring to the table is a very unique ability to cross-correlate (bring disparate acts across data sets, both internal and external) together in real time so that you build a knowledge output of this process that optimizes your personal ability to manage your organization.

Fitts: Can you give us some examples of clients and things that you have done for them?

Binney: For some lawyers and so on who were involved in lawsuits, we were actually correlating things such as different companies involved who are assisting in criminal activity. Basically, this came out of some work that we did in 2004 and 2005 for Customs & Border Protection. We figured out a way of actually helping them isolate people attempting to smuggle imports and exports throughout the world, especially into or out of the United States.

This was all based on open-source data in terms of advertising on websites for companies or yellow pages and similar. We figured out the techniques to ascertain what companies were smuggling things. We found out that many of them were Iranian, and some of them ended in a court indictment.

Specifically for Customs & Border Protection, we proposed that we would do their entire data set – everything that they had. In digital form they had about ten years' worth of data, and it represented about .5 billion records.

A record for them might be one ship with 1,000 carts. The number of records don't necessarily tell you the amount of things that they imported, but the point is that there was a fairly large-sized data set that we could work on. From the work that we had done separately on another project for these lawyers, we estimated that from the data set they had, we could produce approximately 40,000 targets to look at immediately from the first run. It would allow us to tell all their port inspectors for ships or planes with packages coming in, what container to look in and what package in that container to look in to find contraband.

We were trying to improve port security for every port in the United States. Then, of course, we wanted to do the world because this technique applied to everything in the world and every port in the world; it wasn't necessarily restricted to only US ports.

When we told them the amount of things that we would produce for them and give them to pass on to their inspectors, I think that it scared them, so they fired us. They said, "We only have two analysts here."

They had thousands of inspectors. They didn't have to worry about it because the work would be distributed. But that was too much success for them.

Fitts: Maybe there are some places and times where they don't want you to be successful.

Binney: That's right. They certainly don't want us here. It's a shame that we had people in positions of authority within our government agencies, and they can't take advantage of actually solving things.

I guess it means that they cannot see how they could cope with success with the understanding that if something happens, and they were told about it through the success and they didn't do anything, they would be blamed. So, there is this sense of inadequacy to handle the real problem, so they don't even try.

Fitts: There is another thing. If you look at the economic model that is happening – certainly within the G7 – you have the economy very dependent on some covert flows. So, there is a real sensitivity about how you handle politically shutting down a covert flow. The idea of sending data out to hundreds of inspectors without being prepared to handle the sensitive ones reminds me of when we were leading the HUD loan sales. I would insist on seeing who owned what in the portfolio because they were probably going to lose control of the properties as a result of defaulting on the mortgage, but I wanted to know who was going to get burned. Some of them could scream very loudly, and if you weren't prepared to handle it, you could really get in a mess.

Binney: I would also point out that when we did this, we also found Bernie Madoff using this technique. We found out that he had many positions involved in some operation, and it made it very suspicious to us based on this technique that we had been using.

Fitts: Tell us about the perfect client. Who is your perfect client?

Wiebe: I mentioned earlier situational awareness. The question is: How do you achieve that? The 'how' is critical, and it is not magic sauce; it is actually a discipline. It is a discipline that we learned after many years of struggling with various kinds of data – how you exploit it, how you correlate it – in order to understand what some entity that you are studying out there or some group of entities working together in a potentially threatening activity is doing, what they are doing, why they are doing what they are doing, and what it looks like.

We actually developed profiles of activities over time as we would study these entities and their behavior in data. So, we learned to attribute meaning to changes in data profiles, timing, and all those different aspects of data processing and data analysis to gain insights that were unparalleled.

Fitts: I'm from the investment world, and when I look at a company or a portfolio, I am trying to define what their risks are and how to lower them. One of the classic models is: You find a company, you invest in it, and then you quickly reduce the risk that you had perceived.

How would your situational awareness analysis compare to what an investor would do in terms of identifying and understanding risk?

Wiebe: If we are thinking about just beyond the limited topic of risk to investment but actually, what I call, 'total risk' from all aspects from which risks can come, it can come from within the organization, insider operations, theft from the inside, and it can come from a form of attack and attempts to steal money from the outside.

You have to understand the data systems that support those kinds of activities and the techniques for detecting misuse and strange behavior. Once again, it goes to understanding the data and what the exploitation opportunities are that reveal anomalous behavior, and behavior that warrants further investigations so that you can track down people who are doing things that increase risk.

Fitts: I'm still not clear. Here is the perfect client: Is it a business or a government?

Wiebe: Now I am going to read you that piece. This way I will not forget to address some aspect because it does require a lot of thought when someone says, "What is the ideal client?"

"The ideal client is any company that wants to achieve situational awareness – awareness of its incapable operations and what is occurring-performance, what parts are working, which parts are failing, where do you need improvement, all of the metrics, and the auditing that goes along with all of that.

The ideal automated decision intelligence architecture application is one in which a real-time awareness and development – both internal and external to an enterprise – is of paramount importance to leadership; those who steer the enterprise.

This means that the enterprise CXO level desires to be informed of a significant internal change affecting the enterprise – say a change in productivity, problems in the supply chain, new performance goals met (so it's not just bad information, but good information also) – as well as those developments that are external to the enterprise like market sector buy opportunities to increase market share, adverse weather conditions that threaten operations and the ability of people to get to work.

Note that each of these points of information reflect diverse data sources and sets of information. Indeed, some may involve multiple types of data sets within data sources.

The challenge is to identify what data sources have the highest likelihood of providing relevant, high quality answers in response to business information needs at all levels in the enterprise to ensure that the knowledge gained is shared with the right processes and people to optimize decision-making wherever and whenever possible."

Notice that I used the words 'sharing knowledge' with 'processes', not just people. That is because we want to leverage business rules wherever possible to maximize the opportunity to automate as many processes that machines do better than human beings to gain speed and error-free data.

Fitts: All of the potential people that you could work for have the same problem that the NSA analysts had; they are all being overwhelmed by data.

Wiebe: Exactly!

Binney: That is right.

Wiebe: To continue, "the architecture dressed as enterprise policies and legal responsibilities early in the workflow to ensure compliance throughout the organization. Whether it matters involving sensitive or classified information or simply concerns for privacy, compliance steps are inherent in the design. They are not tacked on afterthoughts.

Note that each of the aforementioned points of information reflect diverse data sources and sets. Indeed, the same may involve multiple types of data sets. The challenge is to identify what is the information having the highest probability to answer the business question.

This is the architecture's core competency, and that is to correlate the right information to get the right understanding and the right knowledge into the hands of people who can action it. Should an organization require the discreet handling of information, we encrypted with Barry Novel unparalleled superior privacy through an encryption algorithm that no one else features.

The enabling correlation engine that we use is a key component. The engine brings together the diverse facts, providing a comprehensive picture of events of critical importance to the enterprise. The resulting knowledge is shared with those who need to receive it in a form that is easy to comprehend as quickly as possible in support of the sense and respond model. Enabling the correlation engine is the entity graph table defined and implemented to ensure the correlation process leverages both behaviors in data and attributes over time to build and maintain relationships across all data sources serving the organization.

ADIA (Automated Decision Intelligence Architecture) develops and captures knowledge over time. As the organizational knowledge base matures, the enterprise is ever-more able to implement an increasing number of business results that, in turn, improve the quality and number of its decision-making processes. In this way, ADIA is a learning process that continuously proves the functional capabilities, enabling it to respond effectively to virtually any scenario for which its data sources are intended to inform.

Finally, as the final component in the continuum of knowledge development and with a solid enterprise knowledge base as the enabler, the enterprise is able to develop and leverage patterns and profiles that, in turn, serve as the building blocks of predictive analytics – the process of predicting outcomes. The result is an information-dominant enterprise capable of responding to virtually any event, any development, whether internal or external of the organization, in an effective and manageable way."

Fitts: So, the bottom line is that your job is to significantly increase the learning metabolism of the organization that hires you.

Wiebe: Yes.

Fitts: Let me ask two questions that every business that I talk to today always asks me: One is cyber security. Is the process that you are describing one that will help them significantly with cyber security?

Binney: That is one of our major concerns. We do different things like encrypt all of your data sets with unique encryption. That isn't publicly known. It's not something that exists for any other agencies or other companies who might want to try to break into your data.

We also like to monitor who is in your data network at the same time. That was one of the programs that the NSA got rid from our ThinThread program. It was a program that monitored the network log where you could see everybody who was coming into your network, where they are going, what they are doing, how long they stay, and so on, so that you could detect whether or not what they were doing was something that was permissible in your network or not.

In other words, we could have picked up on all kinds of illegal transfers of money between programs and things of that nature that might be done for the NSA. This is one of the reasons they killed it; they didn't want Congress to know what they were doing with the money that they gave them.

That was one of our problems: We made things too easy for people to understand and see, and basically it made it so that they couldn't hide anything. So, we obviously had to go.

That is one of the things that we like to incorporate into our business process because it allows you to stop people from coming into your network. If you are trying to protect something from someone, you could see people entering your network, and there are various programs out there that do that. You can bury that up with your business. You can actually see and stop people from entering your business if you don't want them there.

Fitts: The next questions that I get – and I will just insert the phrase 'deep learning' – is: What does deep learning mean to my company? How do I deal with it in the marketplace, and how do I use it to my advantage?

Binney: I will let Kirk handle that one, he is in the deep learning.

Wiebe: For us, it means that the ADIA architecture – the system supporting the enterprise – is a learning process. Over time it gets smarter, and as it gets smarter, and more effective.

Does that include what people typically call 'AI'? No. We do not believe AI is where it needs to be. We want to make sure that we have a human-controlled process every step of the way. That is not to say that there aren't highly repetitive tasks in data management that are better served by a machine than a human. It's just that when thinking becomes critical, we don't want to hand that over to the machine.

Fitts: When I read, many people who describe 'deep learning AI', is really just a 'ton' of algorithms. It's not really what I would describe as artificial intelligence.

Wiebe: Exactly, and we don't call it 'artificial intelligence'.

Binney: No, we don't use that term.

Fitts: Good.

Binney: One of the things that we do that no one else does, as far as I know, is go in and correct the data that you have in databases. One of the primary problems is that the data is input from any number of people – possibly with different first languages and things of that nature. They create errors and they make standard human errors when they enter data. They can misread characters or use abbreviations that are variable for the same company name or the same kinds of statement in data about the company. So, we go in and actually look at that and correct it.

You can call it a form of 'normalizing' data, but we are restoring it to the corrected version, and you can see that in the data. The data itself will tell you what the correct version is. If you get enough of it over time, by standard frequency counting and things like that, you can figure out what the correct version is, and you can actually see – according to the rules that we have – the errors that people are making and what kind of error it is, too. Then we can fix it.

Fitts: Of the assignments that you have had or the assignments that you expect, what percentage of the data do you think you are accessing internal to the organization, and how much do you think is external?

Wiebe: A good deal of that does require cooperation from the company we are servicing; whether or not they will allow us into their data. Sometimes they aren't prepared to expose certain sets of data to us. That's okay, but it means that we are limited in what we can do for them. The more that we can look at, the better job we can do for them. It's up to them as to what they would feel comfortable with, but it's rather hard to guess. I don't think that we have looked at more than 20-30% of the companies' data.

Fitts: How much are you drawing on data that is external like weather or general databases that are external to the organization?

Wiebe: Some of that is a variable depending on the job that is involved. For the lawyers, the job was primarily data from the international web and scraping sites and things of that nature. That is a bit different than some of the other companies where we worked. They were interested in weather, and much of that was external to them. We also looked at limited amounts of internal data as to who had their requirements and didn't know about the data and similar things, so we would find out about distribution and all that kind of information about the structure and who needed to be notified when certain things were occurring.

It's somewhat a variable. I don't know that there is anything that is a standard.

Fitts: One of the reasons I think it's hard for you to describe what you can do is because every company and every agency is different. What is interesting is, if you look at your history at the NSA, I'm sure that the number of times you've had to assess a situation and design a custom solution is so many that you are used to doing that.

It appears as though the process is similar, but the results for each company is unique depending on who they are, what they need, and how it works.

One of the products that you described is education. So, you are willing to help the organization get much more knowledgeable. If you could describe Pretty Good Academy (and I love the name), what is Pretty Good Academy and how does it fit in?

Binney: What we are trying to do is teach these kinds of techniques as to how to discover knowledge in data and how to arrange it, organize it, analyze it, and approach it. How is it that you can see things in data that others cannot? That is basically the entire idea behind it.

At the same time, we are trying to say that you also need to look at the business you are involved with and the business rules that they use to take actions within their business environment. We try to formalize it as much as we can into a formal process that we can code and execute in computer software. This means that we are automating the process of decision-making in that business.

Fitts: Let's say that I am a company and I don't know you yet, but I know of you. I am impressed by your background and your experience and your reputation, but I'm a little scared about 'going naked'.

Is Pretty Good Academy a way that I can start with you where I get to know you because you make me smarter, and that makes me smarter so that I can start to bring you in? Is that a good way for me to start?

Binney: Absolutely. That gives you the idea of some of the techniques and processes that we are involved with implementing.

Fitts: On your website you say that Pretty Good Academy is about a week's process. What is the shortest Pretty Good Academy that you can have with a company that is trying to get to know you?

Wiebe: I would differentiate the Academy from a CEO's or a CIO or any CXO-level or mid-level management who wants to know about what we offer. That would be a short-term consulting or maybe a presentation over a couple of hours. If the discussion is, "Can you make my data experts better and expand their horizons and the way that they think about analyzing data on its internal or external networks?" then that would be the Academy where we can broaden the typical exposure that they get in schools, universities, and other training programs.

Fitts: So, you are basically talking at the data analyst or IT analyst level. Pretty Good Academy is to train the implementers – so to speak.

Wiebe: Yes.

Fitts: Ever since I first interviewed Bill Binney on The Solari Report I've had a fantasy that when I asked you Bill – and I don't know if you remember this – what some of the actions are that we can take to really make a big difference in this world? You said what I thought was one of the smartest ideas I've heard yet, which was, "Let's teach all the kids how to build encryption systems, and then we will drive them crazy."

Binney: That's right! That is true.

Fitts: One thing that I've been thinking about is: How could we implement that? I was hoping that you could make a webinar that would teach all the kids how to do encryption systems.

Binney: One of the concepts that we are using here is a unique way of dealing with encryption. Virtually, every encryption that I know of that is in use anywhere in the world is fundamentally a single dimension. You start the encryption process, and it keeps generating.

Instead of doing that, in terms of block chain, they use that encryption when you get the various information and elements that enter and get encrypted. You always have to index back to the original version and all that varying encryption over time.

We invent a multidimensional encryption system that essentially enters layers of complexity that eliminates the block chain requirement of mapping various encrypted versions. You always get the same encrypted outcome for a given input. So, you can index it, and it eliminates all the requirements of mass indexing all kinds of data over long periods of time.

Fitts: One of the things that I just want to say – because I know that some of the companies that are going to be listening to this – is that this is a company that really can make your business and you smarter. So, I would reach out and see if you can't start engaging.

I think that some people are going to be afraid that you are too high-powered for them.

Binney: Actually, we are quite down to Earth.

Wiebe: Let me interject something here. The sophistication of the total process called ADIA (Automated Decision Intelligence Architecture) is somewhat complex. That is true, and it takes a while to implement it in terms of educating the receiving organization on how to use it. However, I will tell you that we are very comfortable with first steps.

In other words, at every juncture, there is about an eight- or nine-step build that creates this architecture. Even the first one or two steps will benefit any organization. The first one being deciding what data is most important for your enterprise. That is a small step. It is more of a discussion and a small implementation.

The second one is: How do you correct data? Data invariably has errors, and most people ignore them. You do that to the peril of the quality of your decisions.

We actually can take the next step a little more sophisticated and use some automation to correct data automatically so that your data is available to the enterprise.

Then we validate data, which is somewhat a step-in correction, but it is more about deciding or making sure that you are leveraging high confidence data for the enterprise. So, these are minor steps that can be taken to benefit any one situation. You don't have to 'swallow the whole pill'.

Fitts: It always amazes me to watch people's eyes light up when they see really great knowledge management go to work and how it makes them smarter. They can't believe that it is all possible, but it is.

Now I just have to ask you a personal question. You are flying back and forth between two continents, you are staring a new business, you are running into all the different 'data beasts', all the sensitive issues that come up when you deal with data and apply it to real world process. Are you having fun?

Binney: I am starting to have fun. Sure! It means that I get the opportunity at the end of the day to look at all kinds of problems and figure out neat and novel ways of solving them.

Fitts: You are also spending time in one of the great cities of the world, Amsterdam.

Binney: That's right. Everybody here speaks English, so it's great!

Wiebe: You don't live unless you constantly learn. That is what we are doing. We are learning everything from Dutch to Dutch culture and are learning that Dutch is quite difficult, in fact.

Fitts: You speak Russian! Dutch can't possibly be that difficult.

Wiebe: It is; it is more difficult. The only thing that makes Russian difficult is the Cyrillic alphabet. Once you get past that, the rules are quite general, just like in English – although English is a bit hokier, in that sense. Dutch is a 'mishmash' of so many languages. As you know, they drop out of Dutch and into English in a split-second, interject an English phrase, and then go right back into Dutch.

Fitts: Except where I am, they start talking Frisian if they really don't want you to understand them.

Wiebe: Two of our team members from Pretty Good Knowledge are from Friesland.

Fitts: Really? It's a great freedom-fighter area.

Wiebe: It is, and we have a great deal of fun talking about that!

Binney: The problem that I have with language is that I am a mathematician, of course, so when they keep dropping in and out of English, I had to confer with one of our Dutch partners. I said, "Is there a specific set of English that you tend to use in your speaking when you go in and out of Dutch to English and back and forth?"

They said, "No, it's just random. It's anything you want."

For a mathematician, that's not a rule. So, they are violating the basic principles of rules and this variability is hard for mathematicians to handle.

Fitts: I want to thank you for joining me. I know it's very late in the Netherlands so I won't keep you, but could you just describe your website? Point us to your website. If people are interested in contacting you and following up with you, how do we go about engaging with you on a transactional basis?

Wiebe: There is a form on our Pretty Good Knowledge website, so you can visit that. But we also have individual websites. I think that mine is www.KirkWiebe.org, and I think that Bill's is www.BillBinney.org. or it could be .com.

It could be .com, but we don't pay attention to our own websites. We're so into dealing with other information.

There are little vignette stories and media sources on interviews we have had and things of that nature.

Fitts: If I am a company and I am interested in talking to you about Pretty Good Knowledge or Pretty Good Academy, I should come into the Pretty Good Knowledge website and fill out the contact form?

Wiebe: Absolutely. In fact, one of our current customers did just that, and we are highly engaged with them now.

Fitts: Before we close, is there anything else that you want to mention about Pretty Good Knowledge or what you are doing? Is there anything that we have forgotten to cover?

Wiebe: I don't think so. I just want to make sure that people are not frightened by what we bring to the table. We can ease anyone into this more advanced world of data management and data exploitation in a comfortable way. We don't have to rush things. It can be a very slow introduction, or it can be as quickly as someone would want to change their operation.

Fitts: One thing that I will stress – and we have talked about this plenty on The Solari Report – is we are going into a world where data is growing exponentially, and the need to make sense of it is growing. You have one of the best resumes on the planet in doing that. You certainly were at an organization that threw as much data as there was at you. I think that if a company is looking for people who can help them learn to navigate this environment, a relationship with Pretty Good Knowledge is a place to begin.

I hope that we helped to get the word out. If there is anything else that we can do to get the word out, please let me know. I will absolutely reach out to you. I am going to be in the Netherlands the second two weeks of February and four weeks in March, and hopefully we will cross paths.

The last time that I was flying in was the day after Bill flew out. We just missed and hopefully we won't miss in 2019.

Gentlemen, thank you so much for joining me on The Solari Report. You have a wonderful evening.

Binney: Thank you. You, too.

Wiebe: Thank you, I loved it, and the same to you.

MODIFICATION

Transcripts are not always verbatim. Modifications are sometimes made to improve clarity, usefulness and readability, while staying true to the original intent.

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