Art of Procurement Podcast Transcript

Episode 161

Sourcing Optimization is About Visibility, Not Complexity w/ Alan Holland

Philip: **[00:00:30]** Hi there! Welcome to today's Art of Procurement interview powered by SIG. And I am your host Philip Ideson. Today's show is part of a mini-series of six different episodes that I recorded all live at the recent SIG Fall Summits. And this being a live recording, you'll be shocked to hear some background noises from barista's making coffee to venue employees taping wire to the carpet. Lots of different little noises in between. We actually had a booth set up in the main corridor of the conference venue, so you're sure to get the atmosphere from the event from those interviews. And so, for this mini-series, I'm actually going to jump straight into the conversation. You'll hear me introduce the guest as we get going with the conversation. So, with that being said, let's roll the tape.

[00:01:20] Hi everybody, and welcome to today's Art of Procurements interview. I'm actually here at the SIG Fall Conference here in Carlsbad. I'm delighted to be joined by Alan Holland. Alan is founder and CEO of Keelvar. So, Alan, welcome to the show.

Alan: **[00:01:35]** Thank you very much Philip.

Philip: **[00:00:37]** You have a fascinating background. You have a degree in computer engineering, I think a PhD in artificial intelligence. You've worked as a research fellow and a lecturer. So, you're probably the best qualified person I've interviewed to actually answer this question, and that is what really is AI?

Alan: **[00:01:55]** So, AI. This is a question I'm asked increasingly often now. What is AI? There's not an easy and concise description because it's a broad family of technologies. It's essentially software trying to replicate intelligent human decision making in various aspects.

[00:02:14] It's divided into areas such as machine learning where you're trying to understand patterns and make inference. But it's also a search where you may be looking for the optimal way to combine things and maybe scheduling your day, scheduling a workforce, choosing a path from A to B, or choosing the optimal combination of rewards in a sourcing event, or… But certainly, there's also machine vision and other areas of artificial intelligence that are all… they are all improving.

[00:02:52] Many of those technologies have reached a stage where they are present in some of your apps in your phone and people are starting to join the dots and say "Well, if we could increase our level of intelligence over here and here and combine it to solve this problem then… so the level of innovation around AI is increasing rapidly. It's not that AI has made any massive advances in the last two or three years. It's just that people are starting to join the dots between various subsystems in AI and come up with applications that when you take these pieces and put them together you've got an overall system that's extremely powerful.

Philip: **[00:03:37]** Interesting. You talked about there's nothing really that's changed over the last two or three years. When you go back to a broader time horizon, what's changed over the last 15 years you've been involved in AI?

Alan: **[00:03:52]** This is interesting because when I was a PhD student over 12-13 years ago, I sat down… I met with a guy called David Walsh. He was very famous AI researcher from Columbia University. He told me about the history -- this guy in the 60s is saying "Oh, the history of AI has been a long and interesting road. It started in the 60s and it went through phases where there was hype, and then there's AI winter. And then there was more hype and then there's AI winter."

Philip: **[00:04:19]** It's like a cycle that repeats itself.

Alan: **[00:04:21]** Absolutely. Absolutely. And so, what he said was that… And this is back in maybe 2003, 2004. It was enjoying a lot of hype again at the time, but it went through a low. And now it's increasing again. But I would say the difference this time around is that with mobile devices in everybody's hands that when you develop an intelligent application now there's so many more people to sell it to. That is a greater incentive among software companies to actually build intelligence into their applications and wow customers. And people are seeing it in a consumer, a B to C apps, so now they're starting to expect it in their B2B apps.

Philip: **[00:05:04]** Right. Now what's interesting is that when I think about the future of procurement as well and you know you look at… and we always cite Amazon as example but it's really just a proxy for our lives have become very much easier in how we buy in our home lives. And so, we start to expect that in our business lives. It seems like it's taking a little while to catch up, but you know once the cat's out of the bag, so to speak, it's only a matter of time. So, it's interesting now more and more people are seeing AI that maybe they don't even know that it is AI. But seeing the opportunities of what they can do in their personal lives on the apps.

Alan: **[00:05:26]** Exactly yes. And so, their level of expectation is increasing and they're just demanding higher standards which is good for everybody.

Philip: **[00:05:41]** Right. What was your research on as a research fellow?

Alan: **[00:05:45]** So, my topic was actually… it's called… my PhD was on the topic of risk management for combinatorial auctions. What a company toward auction will be. Next question Philip.

Philip: **[00:05:57]** You're asking for me.

Alan: **[00:05:59]** So, in effect there was a… If you think back to the spectrum auctions when governments were selling telecom spectrum 15 years ago, there was a realization at the time that if you break it down into many small bands and allow the

telecoms companies to bid on contiguous bands they could and bid on various regions that you could optimize revenue by allowing them combined areas of spectrum they want this so that they can optimize the play locations of mass, so they can minimize the number of mass, and they could optimize for where their marketing presence was strongest, and so on and so forth.

[00:06:40] There was a realization. When the revenues came in from these auctions, they were hugely in excess of what was expected. And massive contrast to the standard auctions for mastery was used previously. So it's a sudden realization that the most efficient way to trade with anybody on a reverse or forward auction context is to actually allow the bidders greater freedom of expression.

[00:07:07] You start breaking down a lot of these. In a procurement context, it's breaking down what you're doing, what you're buying into smaller regional units or line items or trade lanes.

Philip: **[00:05:57]** It's like unbundling.

Alan: **[00:07:20]** Unbundling. Because the market knows how to bundle better than you do. They have more information. They have asymmetric economies of scale too. They don't want to bundle different things. They want to fit your demand into their existing capabilities or networks.

Philip: **[00:07:29]** And that's a lower cost for them to serve which allows them to be more profitable. There's more margin.

Alan: **[00:07:45]** You're helping them reduce their costs and their operational costs, so they can lower their debate for you so that it could be a win-win, so they can actually increase our margins and you reduce your costs. It's much more progressive, far more engaging with your supply base because you're trying to find synergies.

Philip: **[00:08:07]** Yep. Are there certain types of category or product or service that this is better aligned for, you know that when you look at your findings are can really be applied to almost anything.

Alan: **[00:08:15]** It can be applied in any setting where you'd consider blending two or more suppliers together and you're not sure which way to combine them. In its most basic form, that's what sourcing optimization is. It's finding the right blend. Even if you were considering a sole supplier outcome, it's still better. You know why it's still better? It's because when you run this big process, you're allowing a combination of small vendors compete against bigger vendors. The game theoretic behavior changes. The bigger guys realize this is more competitive setting, so they'll change their behavior. It's a way of helping prevent monopolies or oligopolies. And, if you're

smart about things you'll actually deliberately go far. You are multi supplier outcomes anyway because you want more robustness and you want alternatives so that when something goes wrong you have a fallback. So, it's sensible in many ways to apply this strategy. Now, in practice, we see it used in certain categories more than others like transportation, packaging, MRO. But the reason it's used more in these categories tends to be out of the sheer operational difficulties people have with running sourcing events of a large-scale or complex that have multiple decision factors and analysis that go into it.

[00:10:06] Or if their supplier base simply refuses to bid and aggregate or explain. Such as in transportation, they have to explain that they're not interested in all your lanes. If they want all your lanes, we use organization factor on their ships or trucks or whatever. It would drop drastically, and they go out of business pretty quickly if they were trying to actually transport all your goods rather than subcontracting and so on.

Philip: **[00:10:34]** Yeah. It reminds me back in my early days, in my career in the automotive business. I bought light bulbs. You think automotive light bulbs is not that interesting of a category. We only have three suppliers in the market. And you had people wanting to fill up production lines with certain bulbs. They weren't interested in other bulbs. You were basically playing them all off against each other to try and find the things that they wanted and leverage that against the things that they didn't really want but nobody wanted. So at least you weren't stuck with some bulbs that you had to buy at a much higher cost because they just weren't desirable. And the effort that went into something like that was kind of crazy in figuring it all out behind the scenes. And it sounds like by using AI that kind of… It takes care of all the different complexities of something like that.

Alan: **[00:11:17]** And what you'll see is that some people are fearful. Like there are so… let's say, take for example lightbulbs that nobody wants certain light bulbs. But people want the light bulbs if the price floats or something. They just don't want the lightbulbs at the price here. You won't buy that, right. So, what you should do is actually get those in those market signals because all you're doing is your redistributing costs from other lightbulbs to the margin that nobody wants, right? So, they are using the prices in that just to keep you happy, but the prices of others are floating up. What you should do is encourage price discovery to understand which lightbulbs do we need to design in order to occur in the next hour.

Philip: **[00:11:58]** Because they're not desirable for anybody.

Alan: **[00:12:01]** Yeah. What you're asking for is actually kind of… the market, the supplier base doesn't want to provide it because it's just expensive and the customers pay for it, aren't they?

Philip: **[00:12:13]** So how did you make the leap then from academia to then starting your own business? Because it's not necessarily a typical path to take.

Alan: **[00:12:22]** No. It's far from over. In fact, there's somebody from a university that said he thinks I'm the only one out of the department in the university college course that I have done with. So, yeah. I guess whilst I was in university and I was working as a research fellow and lecturer in AI after I finished a PhD, but I had companies coming to me saying "Could you help us with…" Because we rolled out some examples that were very successful in categories like fleas and so on. They came back and said "Could you do this for fuel distribution? For stationery? For this? For that." I said "Yeah, sure. Okay." And it started to takeover my day job.

[00:13:12] I directed them towards other sourcing optimization tools, but they came back and said "Could you use the tools for me? Because we don't know how to use them." I thought there's a gap in the market for tools that are easier to use. It really is not that difficult to run a sourcing optimization project. It's not a change in mindset at disaggregating what you're buying and lifting it and then invoicing packaged bids with discount structures and inviting capacity constraints and then this software does the rest for you. Really, it's a one-click evaluation. You don't like it, this outcome to the suppliers, okay we'll use new suppliers. If you change the parameters, the parameters and all your outcomes. It's very quick. It reduces the workload considerably.

[00:14:05] My feeling was this doesn't have to be difficult. Sourcing optimization should be the default. It should be the automatic choice because it will always fare better than an ordinary resourcing methodology. It should be sticky. You know once people try it, they should never go back. We've never lost a customer so that's kind of proof of that I suppose.

Philip: **[00:14:30]** It's kind of convincing people in the first place that this is a different way, but this is perhaps a way that brings benefits other than what they've done before and getting over some of those fears.

Alan: **[00:14:43]** Exactly. And I think it's initial fears. Fear of the unknown is probably the greatest obstacle to overcome in the sense that "Oh, this is something very sophisticated and advanced because it used to be the case that used to cost 50-100 thousand dollars per project, so people thought oh I can't go near that. That's for the hundred million dollars plus projects. My two-million-dollar project…

Philip: **[00:15:10]** There's no ROI on doing those projects.

Alan: **[00:15:11]** Yeah. But I supposed… That created a fear. No, it doesn't cost that much more obviously. But still that perception can still exist.

Philip: **[00:15:25]** How do you get people over that hurdle? And is it all about just trying to put something like sourcing optimization tool in their hands so they could actually see it and doing that as easily as seamlessly as possible.

Alan: **[00:15:39]** Being very transparent and transparent in every aspect. So, you know having demo videos online that are publicly accessible, having support portal with release notes and user guides publicly accessible. No log-in required. Having pricing that's publicly accessible. Price of my projects. So, projects you can say "Oh, this is a packaging event. 20 items. 10 bidders, whatever." You can price it at credit cards level fees to make it easy to run your first projects. Demystify it. Then that becomes the, I supposed the evidence that accompanies that this is a better way to do things.

Philip: **[00:16:23]** Yes. Kind of a business concept.

Alan: **[00:16:24]** Yeah. So, it's almost like taking the… you know I told you about my B to C software and people having suffered. It's putting our hands easy to use. It's very affordable and trying it out and like it. Then do it. Use it again. It's the same concept as the enterprise sector. I see avoidance of that expensive enterprise sales layers process that takes months and years. Instead just do a quick project. Test it out. See if you like it. And it's cheaper for everybody.

Philip: **[00:16:55]** You know this feels like it's just the beginning in terms of AI and how the technology itself - whether it evolves or whether it becomes the people more interested in it. I'm sure that new technology will build upon it but I'm always thinking about how does it evolve more impact on the roles within procurement, what we do in procurement, and how it allows us to be smarter or to dedicate our time to more value-added activities? Is the endgame that sourcing itself is actually fully automated? That we don't really need as individuals, as humans to do that much and technology will essentially take and ruin the entire process for us.

Alan: **[00:17:38]** In a word, yes. That is the end game, right. Because we see best practice very frequently. Most of the customers we engage… they tend to be exponents of best practice because they know sourcing optimization already. They know the trademarks of a best in class process for various categories and the similarities across all of them.

[00:18:05] Essentially what we see unfolding in the next two or three years, it's going to be quite fast. It's automation of mechanism saying we're already automating parts of big sheet design and automating post publication execution of multi-round RFQ. There's about seven stages in the sourcing process. Just two out of the seven now are automated. Once you get to all seven over seven, you are pretty much at a stage where you have a button in your RP system saying you run my MRO bit and exports all of the demand data into sourcing tool. The sourcing tool decides the other. This is an MRO event. Basically, you invited last year. We invite those, but we gather data

from another third-party vendor that is a new vendor in town. Let's invite them also. We've heard that these vendors out at the market, so it'll automatically rule out one and then move forward. At each stage it will ask the user already, somebody who's

overseeing this "Are you okay with this? Does this all makes sense and you approve or disapprove?"

[00:19:17] But it will be taking actions autonomously and then it would be proceeding to "Okay. So, this is an MRO event. This is the total spend. This is the appropriate strategy to leverage your spend. If it's small, then you may not have any multiple rounds of bidding. But if it's big volume that's attractive for a market then you might want a more aggressive strategy. The parameters in terms of feedback towards between rounds and so on. It's just quite sensible norms for each category. It's very automated one.

[00:19:49] You can publish the events and then received the bids, see all scenarios, suggest scenarios for calculation pre-populated and computed for you. And then you can also… So, this is where… There will always be a human factor in the selection of what are the tradeoffs between cost and non-cost objectives. So, what's your risk management policy? It's formulation of that trade-off between the outcomes in various scenarios and the qualitative factors. In some years you may prioritize costs over value. That, I suppose, is the problem of the organization itself. Whether it wants to be short term or long term.

Philip: **[00:20:36]** Maybe fear every single player in the market is exactly the same and can provide exactly the same service and so it's purely 100% on cost. I guess then it's easier for the software to make the decision as well because that's a parameter, so a cost based decision. But went into a value based decision or even a total cost then that's something where there's a human element required.

Alan: **[00:21:00]** Yes. So, what we would say is its Centers of Excellence in sourcing organizations will be strengthened in both quality and number. The center of excellence becomes the guiding light for I suppose AI that will be subservient to the center of excellence and will be do what it's told and will work to what policies it's governed by. AI becomes the system that just does what it's told to do really and can continuously learn.

[00:21:34] There's an important factor in AI. One of the reasons why it will also take hold is that it retains institutional knowledge. What we've seen is that some enterprises have excelled best in class techniques and processes but lost some key personnel and standards dropped. They left to competitor, so the competitor standards increased. From an organization's perspective, it important to retain

institutional knowledge. If you've learned about best practices, the AI will retain that. It will be loyal.

Philip: **[00:22:17]** So, your knowledge base becomes your IP then and doesn't walk out the door with you.

Alan: **[00:22:22]** So you enjoy what we call anti fragility. You're always getting stronger. You're always learning from past mistakes and what worked well in the past so that you continuously strengthen your approach. In the long term, that's actually one of the biggest benefits. It is not one that is spoken of much but when you look at a multiyear horizon, I suppose the turnover of staff from procurement teams. It's critically important.

Philip: **[00:22:51]** So what happens then when you get to the… You look at the other side of the equation, so the sell side, and your service providers are using technology like this to optimize how they respond to a bid. At that point, do you… Is it a clash of the machines or do you end up with perfect data?

Alan: **[00:23:11]** It's clash of the machines, right. This is another body of work that we're… This is very early stage. It's one called bidder robotics. It's automation of bidding. In effect, if you look at the problem from their perspective, they're presented with all these RFQs and Excel spreadsheets. They have a team of personnel. It tends to be hit hard at certain times of the year. They're overloaded. It kind of respond to margins.

[00:23:44] Stage one of automation of bidding responses is provide bids to this customer that are very similar to last bids yesterday's event. If you take an ocean freight event, it's okay find the lanes, find the price of the bids yesterday and copy and paste from the software as possible. Just do that.

[00:24:10] So, ultimately, it's not just the response is possible. That requires a degree of AI in kind of pattern recognition and understanding what lane is and all of that. But then the next stage is more interesting. It's around optimization of margins. So, this is where you… If you look at what sales excellence teams are doing in the bid side, the very best organizations would have stochastic models around expectations and oil prices, price commodities, and so on. It would be optimizing and engaging in futures markets for buying some of these key ingredients in the products that they are manufacturing.

[00:24:54] So, a little like the algorithmic trading floors in investment bank and the way the traders were displaced by algorithms and small amount of people who are designing and running the algorithms. It's the same way big teams will be displaced by algorithmic bidding and communication of the economies in scale and scope. I've taught a course in optimization and a key element in high performance teams in the

procurement side is capturing a culture of this economy. Likewise, if you're really smart on the sell side about how you're building, you'd like to describe those package bids effectively and find out and discover where the efficiencies are and communicate those continuous movements or backhaul opportunities. You have byproducts in the manufacture of chemicals and so on. How do you describe those

and increase your margins? Yes, bid more competitive under that combination of contest.

Philip: **[00:25:56]** Yes, if you were to learn as a seller exactly what the optimum price is as you enter thinking about ocean freight again and you have lots of lanes and so that's maybe a category where there's a lot of information as you had it pretty quickly as you're going through the bid processes. Especially if you're doing this on an annual basis. But you're learning in real time exactly what the market is. And so, you can figure out pretty quickly "Okay. These are our high margin sales opportunities. We're all going to focus on that because we can optimize for this price because we know that's a price the market can bear and everything else we won't really worry about." You're just bidding on the stuff that makes you the most profitable for you as a seller.

Alan: **[00:26:34]** Exactly. Exactly. And if you can deal with these opportunities that's great because very often you end up overwhelmed and you miss the best opportunities because you simply don't get time to work with them. It's about optimizing across a portfolio of opportunities.

Philip: **[00:26:48]** It's fascinating stuff Alan. One last question. I always say this is the easy question. That's if listeners will pick their interest or they're inspired to learn a little bit more, where can they find out a little bit about you, about Keelvar, and also you know maybe there's some way that they can learn a little bit more about AI.

Alan: **[00:27:07]** Sure. Yes. Learning more about Keelvar, I guess our website is the best place to go because we're fairly upfront about what we do. We send demo videos and we've got white papers to ventures interested in automation aspects and wrapping optimization in AI. We've a paper on sourcing robotics. That a good white paper to start.

[00:27:29] If you're interested in AI in general there's a lot of resources online. There is so many I'm just trying to think what's the best place to go. Insight center is obviously a very large AI research lab. There's a lot of publicly available material. There's even textbooks and so on that we know we can source and are available there.

[00:27:56] We're always -- I think we'd probably be doing more webinars and so on in the future because there is clearly a lot of interest in this area. We'll be doing more reaching.

Philip: **[00:28:04]** Yeah. I think it's… And from my perspective, there's so much… You talked about hype earlier. It's really hard for us not understanding AI and its totality what's the reality? What's marketing? What can we really expect? What's out there? What's the timeframe like? What are real life we use cases or anything like that that we can help kind of bring to market so people can differentiate - well, this is kind of

marketing stuff that a big company is trying to sell but it's not really anything different versus this is a very game changing.

Alan: **[00:28:36]** Yeah. And I think that if you're trying to kind of decipher the hype from reality, one of the best place to start is actually at the micro level, isn't it. How is the data storage? Right? If the data is stored and let's say you have a procurement system and its Excel spreadsheets and word documents that are being exchanged, well that's what AI people call a blob. It's a data blob. Its unstructured. There's very little you can actually… very little inference you can really make. You know natural language processing is powerful when you could not make sufficient… you couldn't be confident in what you're doing with data of that kind. It's not that sheer volume of data is important, it's how well that's structured. I suppose because we came out of an AI research lab, when we started on day one five years ago every sourcing event that big sheet is constructed a new table in the database. So every piece of data can be queried, everything.

Philip: **[00:29:49]** So the big sheet meaning basically the scope?

Alan: **[00:29:52]** Yeah. So, it's the kind of scope of what you're looking for and the conditions around the offers even from supply community. But that's your understanding. That's your scalable understanding of what America is offering in every single event. And then you can do macro level analysis from there. You have the kind of quarriable atomic units of data that can be used to do larger scale analysis and pattern detection and so on. Whereas, if there's information stored in the Word document, you don't know what the conditions of the word. You don't know what the offers are. You just don't know what's going on as far as structuring/ getting stricter data.

[00:30:33] It's all about having rigor around how the data is structured and collected at the point of interaction with the supply base so that everything is captured and structured. And so, if you interrogate your vendors around how is this stored and how do you ensure avoidance of these unstructured excel and word documents. That's really what you want. If you have valuable data in there, it's lost really. As you move from project to project, you can't do any machine learning across anything.

Philip: **[00:31:07]** Because the data doesn't make sense.

Alan: **[00:31:09]** Yes.

Philip: **[00:31:09]** There's just all the information of your text or whatever it may be.

Alan: **[00:31:14]** Exactly, yeah. It's just pretty unstructured.

Philip: **[00:31:18]** Yeah. Alan, thank you very much. What I'm going to do is I'm going to include links to Keelvar to the... And I didn't write the name down we're going to look back in the transcripts of where folks should go to find out a little bit more about AI. I will include those in the show notes. Those are going to be at artofprocurement.com/alanholland. That's artofprocurement.com/alanholland. For one last time, thank you very much.

Alan: **[00:31:45]** Thank you.

Philip: **[00:31:45]** Thanks.

[00:31:47] Thank you for listening to another episode of The Art of Procurement. To find an archive of all past episodes, you can go to artofprocurement.com/episodes. And to ensure you never miss another show, go to artofprocurement.com/subscribe.