INSTITUTE FOR ROBOTIC PROCESS AUTOMATION

Automation, the Next Wave of Outsourcing: An IRPA Interview with Max Yankelevich, Founder & CEO, WorkFusion

Max Yankelevich
Founder & CEO, WorkFusion

Raheem: ***WorkFusion was born out of MIT in 2010, and you launched your first product in 2012. Can you share the story of WorkFusion from 2010 to today?***

Max: Sure. The research at MIT focused on applying artificial intelligence to replacing routine human effort - what we call "digital knowledge work" - that was traditionally done by either outsourcers or by captive offshore teams within shared services.

We began the research by teaching artificial intelligence to understand what quality human work is. What that means, is that in order to be able to train machines, you first need to understand who in your organization does quality work, and what does quality work look like?

We evaluated for guidance at high volume, mission critical processes within financial services like settlements, compliance, and back office F&A, as well as medical billing and coding, and product data within e-commerce. The code that became WorkFusion was first taught to understand how to identify accurately performed tasks, in order to be able to repeat it and train the machine learning piece of our technology.

In order to identify quality human work and replicate it, much of our research had to do with applying artificial intelligence to managing a workforce, training people, and then watching for the quality of their output on a task-by-task basis. Our first customers the e-commerce industry were businesses like Amazon and Walmart because the volume of data was so significant, which made it easier and faster to train machine learning. The software distributed judgment tasks to freelancers which WorkFusion programmatically sourced from online talent markets, and AI judged the quality of the work of cleaning up product catalogs. That was a significant part of the original research that took place at MIT.

The second part, after we actually launched the company, had to do with what we call virtual data scientists, which is the WorkFusion's ability to select and train little machine-learning models that watch and ingest in the high-quality output from humans and use that as a training set to - over time - take on more and more of that work.

The software can do that for pretty much any high-volume, data intensive knowledge process. It's similar in approach to the way Google's self-driving car uses a qualified human driver to train the car to be able to drive itself over a period of time.

Raheem: ***So we launched IRPA at the end of 2013, and in our first two years, we've seen tremendous interest and movement in this space. What's your view of the RPA and automation marketspace? And from your perspective, what's driving the growth in interest?***

Max: I think that automation, as a whole, is what clients see as the next wave of outsourcing. You can call it BPO 2.0. The understanding is that human labor arbitrage is sort of playing itself out. How many times can you change the location from India to Brazil? With the power of machine learning and artificial intelligence, you can actually apply a lot of the technology that emerged in the last five or six years to automating these large-scale processes that had been shipped off to outsources. RPA has been the first wave in that process.

Essentially what it does is use rules to enter data into one or more downstream systems, basically data entry, which is a first step on the path to automation. This provides efficiency gains, so your operations, your shared services people, your outsourcer, will do a little bit less work, because they don't have to enter information into multiple systems. You can think of it as the thoughtless "hand" work in a business process. But cognitive comprehension is still missing from RPA. That means the human still makes a lot of decisions, and they need to look at the screen.

The next step on the enterprise quest to automate knowledge work is to get into the thought processes or the "head" part of human work. This is where machine learning comes in to use historical data in real-time work to learn a process and be able to probabilistically make decisions in the same way a person does.

You need to apply both RPA and cognitive automation in order to provide a complete solution for the enterprise, and from what we've seen, our clients will start out with an RPA solution, and then move to WorkFusion, because RPA alone doesn't provide enough gains. Businesses equipped with only RPA still have a lot of people performing routine cognitive work. But I

think RPA started a powerful trend, and it's a good first step, but obviously cognitive is what's next.

Raheem: ***Let's stay there for a moment. It seems like every week, I am introduced a new RPA provider. What we've learned here over these last two years is that not all RPA solutions are created equal. We've also seen a level of maturity with regards to how the market segmentation. You have your pure-play RPA, kind of task-oriented automation types of programs that may reside on the desktop and assist a desktop agent. You may have your systems that sit on a blade server between multiple systems of record and controlling end-to-end processes.***

But what you've been talking about earlier, I think, is more on the cognitive and artificial intelligence side of things, so I guess your view, at least my perspective is that WorkFusion plays across that whole spectrum. Is that a fair assessment?

Max: WorkFusion does indeed play across the entire automation spectrum, from robotics to cognitive. Cognitive and human-in-loop computations, specifically, is what's missing from all RPA solutions. Being a technologist, I see this for what it is, essentially hard-coded software that is very brittle and doesn't learn from human activity.

RPA actually is pre-hard-coded to be able to mimic certain keystrokes, and it requires a lot of IT involvement if something changes. A lot of our customers will say, "Well, you know, when the screens change just a little bit, RPA no longer works," that's because it's only made to work with a certain number of screens. Whenever something changes, even something very little, on the screen - it's a new field, a new button - it requires IT to go and essentially reprogram it.

This is far away from the machine learning or artificial intelligence world that we were born of. The human-in-loop artificial intelligence approach is a much more flexible approach to replicating a process with automation and is able to stay flexible when there are changes in the process or systems.

For instance, much like you would train a new employee to handle new screens, you would use something like WorkFusion and human-in-the-loop computing to be able to learn new screens on the fly without having to recode it, so essentially, it's the same as a human.

The difference between cognitive and RPA is that cognitive is able to learn on the fly and be a self-healing system, more of a true artificial intelligence, where it gets smarter and smarter, versus something that's hard-coded and stays at the same level of competency.

Similarly, for a new format of data that is coming in, for instance, if somebody's looking at different loan documents all day long, and all of a sudden there's a bunch of new formats for loan documents that come in, or they add a new field or a new calculation, you have to be able to train the software much like you would your employee to understand what to do.

Rather than recoding the software which you would have to do with the RPA-only approach, you simply retrain it through the same, Google's self-driving car approach, where a human takes over some part of the process, and then the software is smart enough to be able to learn it.

Raheem Hasan with Max Yankelevich

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Raheem: ***That's interesting. Let's switch gears a moment and move away from the technology, and let's look at the impact this technology has had on the outsourcing marketplace. What's your view on the impact that this technology has upon outsourcing, specifically in the area of labor arbitrage?***

Max: It certainly is your typical disrupter play for traditional outsourcing. Traditional outsourcing was driving on labor arbitrage of very large-scale repetitive type of work, so finance and accounting, accounts payable, compliance, really large scale repetitive work, that really didn't require a very high skill level, and at the same time, you could put a lot of people offshore and be able to do it cheaper.

So the game is going to change. Essentially, artificial intelligence is going to eat into that approach, or those types of business processes very quickly. When customers going forward think about outsourcing some of these repetitive processes, they'll think about artificial intelligence or cognitive first.

Labor arbitrage is still going to be there, but it will force some of the smarter players to provide higher-level services that use human intellect to the fullest - higher-level analysis, expertise-based services. In fact, we already see that with some of our partners, like Wipro. Their interest is to shift a great deal of their current business and move it over to companies like WorkFusion, reduce the footprint of their labor force, and provide higher-end services that artificial intelligence at this point in time is not able to provide.

You will certainly see AI nipping at the heels of human capability, and right now, if you think about human intellect as a pyramid, AI's playing at the lower to middle tier, and human intellect, which is on top is still highly valued.

But AI will slowly eat up that pyramid, pushing human intellect to do better and better things, which is great.

Raheem: ***So do you think it's a job killer?***

Max: I think it's a job creator. Back in the days of the industrial revolution, you couldn't really put a price on and understand the impact of a steam engine, and there was a lot of the same type of rhetoric, "Oh, the steam engine is killing jobs."

But it will be a job creator, and it will free up human beings from doing work that is, quite frankly, mind-numbing, and allow organizations and people to actually apply their intellect,

get paid better wages, feel more fulfilled in their jobs, and move society forward as a whole.

As you automate things, you allow humans to use more and more of their brain. Again, the steam engine and the Industrial Revolution proved that very well. I think we're witnessing another Industrial Revolution here, and that is why you see a lot of hype around artificial intelligence much like there was around the Internet back in 2000, because everybody understands there's going to be an exponential impact. They just don't understand how much and how fast.

Raheem: ***So we've talked about the impact on labor and cost reductions, but what are the other benefits that your clients are recognizing by embracing this technology?***

Max: Just from the KPIs that we follow with our clients, they have the ability to do more with less, process a lot more data, deliver better and faster services to customers. Obviously, we're in the big data time and space, and companies are forced to do more, more compliance work, more document processing, and they could never scale with just pure human power. Now they're able to do a lot more and a lot faster, and therefore be able to service their customers better.

A lot of what's not talked about is that repetitive human knowledge work has produced poor quality results and made customers unhappy. If you talk to customers, they're very unhappy with their current outsourcers, and the problem is quality. It's just not consistent.

Before I started the company, I actually went out and visited the Infosys and Wipro offshore centers, saw people working nights - and these are very smart people. They have PhDs, but they're doing this mind-numbing work. On Fridays, a sort of daze takes over. After three o'clock, there are a lot of mistakes made, because people just, quite frankly, fall asleep. I don't know if you've ever seen a settlement document that needs to be cut and pasted into other systems. It's just accounts and amounts, and if you do 20 of those in a row, you'll get a good night's sleep, for sure.

The required quality of the output has gone up, and so has the need for transparency. The impact of a settlement document being done wrong is money being wired into the wrong account. One of our customers before they began using our software actually wired about $100 million to somebody else's account in a post settlement trade. They lost a billion-dollar customer as a result, and that was part of what drove them to explore smart automation.

And this is just one of the impacts. With humans, try as you might, you're not going to get that high quality output. So with smart automation, you're increasing quality, you're increasing throughput, and like I said, you're freeing up human intellect to do better things.

Raheem: ***Let's take a look at the future. It's 2020, four years from now. What does this market space look like?***

Max: I think it sort of follows the path of outsourcing pretty exactly, I would say. If you think about where outsourcing was, maybe twenty years ago, it was very similar to the automation market today: a lot of excitement to get started.

So I think by 2020 artificial intelligence and cognitive computing are going to be where outsourcers are right now in terms of being thought of as first for this type of work.

I don't think anybody in 2020 is going to talk about, "Hey, I'm going to move my F&A process or accounts payable process to my offshore provider from Brazil, or from India to Brazil to China." They'll be saying, "Well, you know, this is AI type of work," and they're going to follow that path directly.

You can already see work being moved to AI or cognitive computing today, and nearly every big company is at least experimenting. If it took outsourcing twenty years, it will take AI five years, because things just move much faster with new technologies.

By 2020, I see AI taking over the outsourcing industry, in terms of what outsourcing is thought of right now, and obviously, moving up the food chain. And then, I see other verticals getting into this space. Right now we see a lot of financial services, because they have financial incentives and mandates, and we see insurance, e-commerce players moving in this direction. We still see very little healthcare, government and some of the other industries.

We also see artificial intelligence getting smarter and smarter, because it's getting so much training data from various industries and processes. You will get some very surprising capabilities out of AI companies like WorkFusion that see a lot of different processes across different customers.

Unlike outsourcers that have turnover of people, there's no flight risk of the knowledge that gets created in large quantities. You will see very surprising types of "thought process." And no, it's not going to be Terminator. It's not going to be a judgment day type of thing, but you will get much, much smarter AI, and that's why we've been very aggressive in terms of taking on different work from different verticals, because in the end, there is a network effect for us, which makes artificial intelligence much, much smarter.

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To go back to the Google self-driving cars reference again, the more people are driving it, the better it will get at driving, and the better it will get at these cognitive processes. We'll be able to surprise customers with new services that they haven't been expecting from artificial intelligence.

Raheem: ***Ah, the future looks bright. Thanks for your time.***

About Max Yankelevic, Founder & CEO of WorkFusion

Max founded WorkFusion in 2010 and now spearheads the company's work combining artificial intelligence and crowdsourcing to build WorkFusion's platform. Max is an expert on AI, crowdsourcing, high-value customized data sets, and their potential to impact enterprise organizations. An evangelist for the emerging field of crowd computing and a dynamic speaker, Max has changed the perception of crowdsourcing among decision makers.

Max attended Massachusetts Institute of Technology where he studied computer science and mathematics. He is a seasoned technology entrepreneur with more than 15 years of experience in large-scale cloud computing and start-up technology companies with a focus on business. Max is also Founder/Chief Architect at Freedom OSS.

WorkFusion

WorkFusion is the leading smart process automation solution for enterprise business. Fortune 1,000 companies use WorkFusion to automate high-volume, data-intensive business processes through a combination of workforce orchestration, robotics, and machine learning powered cognitive automation. These capabilities enable customers to improve service delivery, increase operational agility, and reduce costs. WorkFusion is headquartered in New York City with offices in London and Eastern Europe. For more information, please visit www.workfusion.com.

About Raheem Hasan, IRPA President & Co-Founder

Raheem is an accomplished senior marketing executive with a 25+ year track record of developing and leading go-to-market programs and delivering positive financial results. Raheem is skilled at leading the full life-cycle product and service development processes from concept to launch. He has extensive experience delivering growth through programs/initiatives that focus on leveraging customer insights, market research, industry trends and product/service innovation.

He is an expert in go-to-market strategy development, services and product marketing, branding and positioning, analyst relations, and program and project management.

Raheem has held management roles in global B2B companies as well as B2C start-ups. He spent 13 years at Siemens IT Solutions and Services in various management roles, including Senior Director, Marketing, Communications and Analyst Relations where he ran the North American Marketing operations. Raheem has also held positions at IBM and General Electric.

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