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Q&A with Marc Zionts, CEO of Automated Insights, Inc. the leading Natural Language Generation provider with the world's first Self-Service NLG Platform enabling Companies to easily Transform Data into Narratives, Reports and Stories

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CEOCFO: *Mr. Zionts, would you tell us the concept behind Automated Insights?*

Mr. Zionts: Automated Insights is the leading natural language generation provider. Natural language generation (NLG) is the ability to take structured data and transform it into narratives, reports, or stories that sound just like they were written by humans. We're the creators of the world's first self-service NLG platform, Wordsmith, meaning Automated Insights brings the transparency and flexibility of data discovery and real-time narratives directly to the end business user.

CEOCFO: *What is the challenge in creating what sounds simple but is not simple at all?*

Mr. Zionts: The greatest challenge is having good data to work with, meaning it has a high degree of organization and few corrupt, inaccurate, or irrelevant records from a set, table, or database. Our NLG relies on this clean, structured data. Our software mainly works in two ways; one is where data comes directly into our software and narratives or reports come out. Another is integration with business intelligence (BI) software products like Tableau, Tibco, Microsoft Power BI, Qlik, or MicroStrategy where Wordsmith narratives are paired side-by-side with visualizations. Business intelligence is a seamless, powerful industry for us because we know the problems and pain points NLG solves and there is always clean data. Outside of BI, enterprises have unique things they want to do, like automate the creation of content, but they may not have the data available, it's not together, or the integrity of the data is not what it needs to be. Our number one challenge is often gathering high quality data.

CEOCFO: *Would you give us a couple of examples where NLG comes into play?*

Mr. Zionts: I'll give you a couple public examples and then a few examples that showcase the majority of our services in B2B business intelligence. People actually see Automated Insights every day in very public ways. For example, we've partnered with the Associated Press for a long time for both financial and sports article content generation. Each quarter, the Associated Press publishes earnings reports on public companies. All of these stories, once written manually, are now generated by our NLG software, each with attribution to Automated Insights. Four times a year, Automated Insights NLG creates over 4,000 articles on individual public company earnings in the United States, which is a 15x increase over their previous manual efforts. Additionally, we do all the minor league baseball reporting for the Associated Press and will soon start generating their NCAA Basketball reporting. However, we don't do this just with the Associated Press. We actually work with other clients like the Dow Jones Group, the Economist Magazine, and Standard & Poor's, where much of their reporting is done using our software. Outside the US, leading media publications like Sky Italia are using our NLG for weather, sports, and finance reporting. Another major place where people see us publicly in Yahoo! Sports Fantasy Football. Anybody that plays fantasy football with Yahoo! can get a weekly recap of how their fantasy team and players performed. The tone of these are intentionally a bit snarky, challenging people to stay engaged throughout the season,

but each one of these personal reports are generated by our software. What makes this so unique is they are personal stories. It is your data and your story, only relevant to you. Automated Insights drafts these recaps for the entire 17-week football season, this results in over 100 million unique stories being distributed to individual fantasy football users. What all these topics have in common is they are data-driven stories, whether personal or universal.

With our key focus in B2B, we integrate with business intelligence platforms and partner with system integrators to help business users understand their data. Pairing narratives with dashboards and visualizations increase understanding of data by providing real-time, contextual narratives tailored to each individual's company role in the simplest medium: the written word. People are storytellers, we don't speak numbers. Looking at raw numbers or spreadsheets and trying to derive meaningful insight (often referred to as data literacy) is a challenging hurdle for many organizations to overcome due to a lack of data expertise and misinterpretation. According to Gartner, only about 30 percent of people in an enterprise can look at a dashboard or visualization and correctly interpret what it means. We partner with BI tools and integrate so companies can overcome this lack of data literacy through a clear narrative explaining exactly what the data in a dashboard means in a fully interactive manner. As you click around your dashboard, you are getting new narrative insights, which reduces misunderstanding and enables business users at every level in the enterprise to utilize their BI software that's imperative to become a data-driven organization.

“Just being able to tell people what the data means is vital. We find that, regardless of the organization, people are looking to become data-driven and make better, faster decisions. We help that process. I think that's one of the reasons people want to pay attention to what Automated Insights is doing as we further empower people to understand their data.”- Marc Zionts

CEOCFO: *How do you get to the point where you have the nuances down pat when different regions have different words for the same thing?*

Mr. Zionts: There are regional differences, but we actually take it further. Organizations want to create narratives that reflect their brand, style, verbiage, and tone. There is a tremendous amount of difference between how the Associated Press, a 170-year-old company, writes about company earnings in AP style—the definitive, strict writing standard for journalism—versus the fun style and snarky tone used in fantasy football recaps. The tone, tenor, and style are extremely important for a brand as they want it to reflect their identity. It's equally important for a region to publish in any language needed. Right now, our NLG software supports over 20 languages. Customizability is why we've found self-service BI so imperative because business users are given complete control of the output based on what they want and need. Automated Insights' NLG uses a deterministic approach, meaning the language generator may suggest things to say but users always have complete control with the option to either agree, modify, or create their own phrases.

Many of our customers use NLG to speak to people based on their role or persona—this is called role-based narratives. For example, Activision utilizes our NLG for their game Call of Duty® to give players recaps of how they are doing individually and compared to competitors or friends and provides recommendations on how they can step up their game. It actually speaks to each person differently depending on their skill levels; if they are a novice, they're talked to one way, if they are a mid-level player, the NLG uses a different tone, and if it is an advanced player they're talked to differently still. Similarly, within a business or organization, an end-user's position may determine what information is outlined in a narrative. Salespeople may just get insights on personal sales data and individual action steps, but managers get insight on their entire team with narratives on regional sales data. However, the chief revenue officer may get high-level insights on the entire sales organization. Tone, tenor, style, persona, role, language, are all factors in this equation and users have full control of each with our self-service NLG software.

CEOCFO: *It would seem almost impossible for a person to get all that right?*

Mr. Zionts: With the Associated Press earnings reports, they wanted to automate the process, generate more content than they could do by hand, do it at a rate that was cost-effective, and free their journalists for stories that require their uniquely human thought and analysis. To meet their standard in AP style, we worked with them to replicate templated articles reporters would use to plug information in each quarter that would then be used for the automated earnings report stories. For them, it was really just translating the manual step they had before utilizing the software, whereas with other clients we are creating something entirely new. There may be some back and forth because they want to spend some time to make sure it comes off the way they desire. What's fascinating about this world of natural language generation, and within all the world of artificial intelligence, is that there's a lot of domain knowledge required. In our case to create software you need to know how to code, but we are dealing with big data, so you need data scientists. Then to further complicate the matter, we are dealing with writing and linguistics. An extensive mashup of four things—writing, linguistics,

coding, and data science—are necessary to be a successful NLG company. We have a lot of interesting people in the company with various backgrounds and educations. We have previous English teachers who then went to coding camp and people who were writing and journalism majors who then got their master's degree in data science. It's a mixture of left and right brain skills, paired with a lot of talent and hard work, to create the product.

CEOCFO: *How have you been able to engage with so many types of companies?*

Mr. Zions: We are able to work across a broad spectrum of customers because we created an open platform. Our NLG software's user-friendly interface enables us to train our customers to easily use our software and apply it to their specific industry and problem they want to address. For us, that's been key to working with so many types of companies. We've also formed partnerships with systems integrators, both regional and global, who are already working with the BI platforms we integrate with and companies we work with. Leveraging our partners and public-facing work helps garner exposure because with much of the public facing work that we do we are getting attribution. As a result, a lot of people inquire about our company and what we do. It's fun because we might get a CEO of a Fortune 100 company to contact us because they're a fantasy football fan and see we are the people who produce their recaps, or they may be reading an article about a company's earnings and at the bottom it says the article was created by Automated Insights. We do get quite a bit of inbound inquiries, so we're excited to have the software that allows us to work in over 50 industries.

CEOCFO: *Are there different solutions or levels of product; what is the business offering?*

Mr. Zions: Our software is available as a subscription service; it's all one platform. It is just a matter of how you implement it, whether standalone or integrating with BI software. It's one product, one product line, with extensive customization capability to meet particular use-case needs.

CEOCFO: *What has changed as your service and product has been available?*

Mr. Zions: The biggest transition we went through as a company was being acquired by a very large private equity firm three years ago which has allowed us to focus on completely developing and narrowing our product offering. Prior to the acquisition, we were backed by venture capital firms and Automated Insights' NLG was a black box solution, or closed architecture. The work we did for our clients was very project oriented. Once acquired, we were able to fulfill what we knew was necessary to really scale the business and open the product up completely: open and publish the API key (the code passed by computer programs that allows them to talk to each other) and create a user interface and experience that promotes and enables self-service. These changes were imperative for us to make the transition from a project company to a product company, from a professional service to self-service, and from closed architecture to open architecture. We've also made quite a few changes over time since first rolling out our self-service platform. We have constantly been able to improve the ease-of-use and the speed to value for our customers, which is where we focus our development efforts to continue making it easier and faster to write with data using our product.

CEOCFO: *How is business?*

Mr. Zions: Business is great. It is a quick-pace, fast-growing business. Being owned by the private equity firm, Vista Equity Partners, provides a lot of best practices that help us scale as they only own software companies. If you pull all their companies together, Vista Equity Partners would be the fourth largest software company in the world. Vista has raised over \$43 million dollars and owns over 55 companies, and Automated Insights is one of those. This really allows us to expand our reach, invest in more opportunities to generate leads, and work with companies that we feel are a great fit for our product.

CEOCFO: *One of Automated Insights core values is being accountable. How does that work day to day?*

Mr. Zions: Like many young, progressive software companies, Automated Insights has a very open and flexible work environment for our team. That means employees can work at home if they want, take whatever vacations they want, and help themselves to free food and beer in the office at their convenience. It's the type of environment where all of that is contingent on employees delivering for our customers and helping to make them successful. Accountability is at the core of the equation, with great freedom and flexibility in the work environment comes the requirement that people also deliver and are very trustworthy. That's why it's one of our core values.

CEOCFO: *Do people understand when they come onboard?*

Mr. Zions: I think people understand they're attracted to the environment we have and realize accountability is part of the equation. We are extremely diligent and have a defined idea of the people we want to work for us. We do both cognitive testing as well as psychological profiling. We are looking for the right fit for the role. We also seek a certain level of intellect in addition to people who are learning oriented and driven to improve. We are trying to measure these things in order to attract people who are interested in being accountable, agile, and innovative. If they pass these tests, they

actually go to a coding test. We are very selective about who we hire. It's important because if you think about a software company, it all comes down to the people. We don't have a factory making things, we don't have a distribution network or a warehouse or retail stores. Our product is software and the excellence in that software comes from hiring the best people you possibly can. We have a tremendous amount of rigor around the hiring process.

CEOCFO: *Did your founder know in the beginning that you needed to sign what you are doing or have, "created by"?*

Mr. Zions: Our founder, Robbie Allen, is the executive chairman on our board and I'm close with him. The way he started the company about ten years ago is an interesting story. He's a technical person, distinguished engineer at Cisco, author, and avid reader. He read a lot about entrepreneurialism and knew he wanted to start a business but also knew from his reading that entrepreneurs have to start something they're passionate about. Allen was with the University of North Carolina's basketball team, so he's passionate about Tar Heel basketball. The problem he wanted to solve was why fans had to wait to read about the game until the next day when the data is available during and after the game. What if somebody could produce those stories in real-time using software? That's where his concept of what to do and how to start the business emerged. He realized this was applicable to more than just sports because data is rapidly increasing everywhere. Raw data is not that helpful for most people, what they really want to know is what it means or how to understand it. This is why the vision of our company is making the world's data understandable.

CEOCFO: *You mentioned a report or story would come out and say, "Automated Insights created this." When did you realize that was important?*

Mr. Zions: We recognized that would be good for our business a long time ago, but it took a bit of time to execute it. If it benefits us but not the customer then they're not going to do it. It has to be a win/win for both parties. Take the Associated Press; I believe they were very interested in promoting what they did with us because it helped position them as an innovator and thought leader for their customers. If you look at the business world, even government agencies and non-profits, when you hear an organization that you're working with is innovative and doing things to create more content and more creativity while reducing costs, that's something you take comfort in and is of interest to you. From the Associated Press' perspective, this was a win for them and we both got something out of it. With our other customers, if it's an internal application then there's no point to attribution, but externally we do try to seek that.

CEOCFO: *Why pay attention to Automated Insights?*

Mr. Zions: Data is exploding. Depending on whose measures you're viewing, every one to three years we as a society are creating more data than in all the time prior. The statistics are intriguing, but people's ability to process that data into something that is actionable and understandable is constrained. Just being able to tell people what the data means is vital. We find that, regardless of the organization, people are looking to become data-driven and make better, faster decisions. We help that process. I think that's one of the reasons people want to pay attention to what Automated Insights is doing as we further empower people to understand their data.