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BEN WABER (HUMANYZE), INTERVIEWED BY GERALD C. KANE

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What if “people analytics“ were able to bring new clarity to the hidden patterns of why some people are more successful at their jobs than others? What if managers could essentially read *people* the way they read statistics?

Those are two of the questions that drive Ben Waber, the CEO and a cofounder of Humanyze. Using a sort of turbo-charged company ID badge to track all sorts of data points about employees, Humanyze helps companies find surprising connections and insights in data about what its most effective employees do differently. The company is a spinoff of the MIT Media Lab, founded by a group that includes MIT professor Alexander “Sandy“ Pentland.

Waber says the inspiration behind Humanyze was “Moneyball,” which, he notes, “everyone thought was crazy at the time.”

Many people know the story, but it’s worth reiterating: “Moneyball” — the 2004 book, and then the 2011 movie — tells the true story of how the Oakland A’s manager Billy Beane successfully rebuilt the baseball team using computer analysis and statistics instead of wads of cash. Beane and his analytics team found connections and significance in certain player stats that had not been considered particularly relevant before. Baseball analytics unearthed patterns that seemed irrelevant and even counterintuitive — patterns no one would have believed if the evidence wasn’t there to show them to be true.

“I think business as a whole is, ironically, in a similar state to where baseball was over a decade ago,” says Waber. “We’re finally starting to have the ability to collect data on what we actually do when we’re at work — because we

carry cell phones around with us and we have email, IM, phone call data, internal social media data and now, increasingly, sensors that tell us how we *actually* collaborate with each other." All those data points paint a picture, he says, of how people in companies talk to their customers and how those behaviors relate to outputs.

In a conversation with Gerald C. (Jerry) Kane, an associate professor of information systems at the Carroll School of Management at Boston College and guest editor for *MIT Sloan Management Review*'s Social Business Big Idea Initiative, Waber explains how small changes in things like how breaks are organized and people's seating options in a cafeteria can have significant effects on productivity, job satisfaction and turnover.

The work Humanyze does for its customers starts with ID badge technology, right? Let's start there.

What we've done, first during my time at MIT and now at Humanyze, is develop this next-generation company ID badge. This badge, like the standard RFID cards that most people use to tap into doors, has a radio in it. That's a sensor.

If I put little RFID readers on the ceiling, I could figure out where people are. Of course, besides being a little creepy, that doesn't really tell you how people are collaborating or how they're talking to each other.

So we've added some additional sensors onto those ID badges — microphones, Bluetooth, infrared. That has enabled us to really understand at a millisecond level what's going on at a company.

That sounds invasive, on the face of it. Do you actually record what people are saying?

No. The microphones don't record what you say. We're doing voice analysis in real time. So we can figure out how much you're talking, how much you interrupt, how loud you talk. We can figure out if you're stressed through the changes in your tone of voice.

We also have movement analytics, so we look at how much you move around, so how physically active you are. We look at your location using Bluetooth.

Importantly, we don't give these individual metrics to our customers, to companies. Individuals own their own data, and we do this on an opt-in basis. But we can combine those metrics, the KPIs from companies, so that we can show what the best people do. How much does sales actually talk to the engineering team? What are the things that actually drive performance at your company?

Give us the big-picture overview of how this works.

Companies and individuals get feedback on this behavior. They get to see how these things change day-by-day, week-by-week. And then our customers use this feedback to change the way they manage their businesses.

In terms of our business, we don't make money on the actual hardware. The reason we take that approach is that in 5 years, whether it's from us or somebody else, every single company that is using RFID badges now are going to have these sensors. Where we are really focused is on the analytics that you can put on top of those devices, on top of that data. The real value is on using this data to help companies change how they're managed.

At a high level, we're providing those analytics and that feedback to our customers. They're using the data either to change the company themselves, similar to how companies use marketing analytics, or, in the case of large consulting companies, to provide better consulting to their customers, as well as to provide some more custom analytics on top of our system.

I know you've got some great client stories. Tell us about Bank of America and what the data told them about the value of how employee breaks are organized.

Sure. Bank of America came to us and they wanted to use our technology in their call centers. Now, call centers have been managed one way for around 60 years, with the idea of maximizing up-time. Employers typically don't really care if people who work at a call center talk to *each other*. They care more about how employees talk on the phone.

Bank of America has call centers all across this country, and people are trained the same and had relatively similar call qualifications. But some centers had very different performance, and Bank of America thought it had something to do with the culture of these call centers — but they really had no idea how they could measure that.

We come in with the badges, and we deployed across a number of their call center teams. It's quite easy to measure how productive people are — you essentially look at how long it takes people to complete calls — so we said, "What behaviors predict productivity?" Importantly, we're not just looking for a correlation. Ideally, what we look for is *behavior* that, when it changes, then the outcome subsequently changes.

We — at least I — assumed, when we were first deploying there, that the most important thing would be how people talk to customers on the phone. It was easy to measure when people started the call and when they ended the call, so our voice analytics looked at conversational dominance — were they interrupting the other person a lot? — and other features.

But it turned out that by far the most important thing in predicting productivity was how people talked *to their colleagues*. We looked at who staff people talked to, and how those people talked to each other. And it turned out that people in very cohesive groups — people who spend all their time talking to 5 other people at the company who only speak to each other, for example — completed calls in half the time as people in the least cohesive groups. It was a straight-line relationship, very powerful.

We said, "Wow, that's really interesting." And Bank of America dug into the data more — they wanted to know, where and when does this actually happen? Because typically, people don't have breaks at the same time, and there's just not that many opportunities to talk to coworkers.

It turned out that 80% of employees' interaction happened in the 15 minutes when peoples' lunch breaks would occasionally overlap. Bank of America used that information to A/B test a new break system. The company split the call center in two — and we're measuring both with the badges. For half of their teams, they gave people breaks at the same time. Each team of about 20 people would have a break at the same time. And for the other half of the teams, they didn't change anything.

Three months later, this is now normal — and what we saw was that, of course, the groups got much more cohesive. Cohesion increased by 18%. Stress went down by 19%, measured through surveys as well as with the badge. Those things made sense: for cohesion, people now have more opportunities to talk to the people they already talk to, and for stress — I mean, listen, working in a call center isn't exactly a picnic. People call you all day, and you hear about stuff that's not your fault. But if you have a break at the same time with some of you coworkers, you can vent to them, you can say, "Man, that was tough call," and they can support you if you're all in this tight-knit group.

But what was amazing, though, was when we looked at the productivity data, people in these groups completed calls 23% more quickly after we made this change. I should point out, there was no significant difference in the group where we didn't change when they took breaks.

Now, this is worth tens of millions of dollars to Bank of America, and it was free. It cost them nothing. They just wouldn't have done this without the data.

Those are truly dramatic numbers.

Yeah — and on top of those performance numbers, it turns out that in the groups where you changed when people took breaks, the turnover went down by 28%. Significant, very significant number. These numbers are equivalent to the performance boost you get by introducing computers to a workforce.

This kind of analysis can show ways to get these gigantic performance improvements. I mean, if you go to a company and you say, "We're going improve performance by 20%," the normal reaction is to say, "Wow, we have to completely change how we do things."

Our results consistently show is that if you can find these social levers that people are responsive to, and you can act on them in the right way, that's where you get the really big results.

Can you give us another example? That one was fascinating.

This is a humorous one, which is still very interesting. It shows how lunch interactions tend to be very important.

This is in a major online travel company where we outfitted their entire headquarters with badges. Hundreds of people, the vast majority of them are programmers.

For them, their code depends on the code of hundreds, or even thousands, of other people. If those people aren't talking to each other, that's where the bugs pop up. There's actually some great research at IBM — where I also worked — that has shown that if my code depends on your code, [if] we don't talk, it takes 32% longer to complete it.

We saw something a little bit weird: some people always ate lunch with almost exactly 3 other people, and other people always ate lunch with almost exactly 11 other people.

We were trying to figure why people were consistently sitting in these size groups. Then, we went to the cafeteria, and — maybe you guessed it — by one door all of the tables had 4 seats, and by this other door all the tables had 12 seats. What was happening is that people would walk through the cafeteria with at least one other person and then sit down at a table — it's not like you would come to lunch in a 12-person group, you'd come in smaller groups.

The people eating lunch at the larger tables were much more likely to talk to the people they ate lunch with later in the week. Because these people are programmers, they were much more likely to talk to people who work in different groups. That had a significant impact on code completion and on job satisfaction.

When this company had layoffs, everyone's job satisfaction dropped, but it dropped 36% less for the people who sat in these bigger tables. Which is a lot.

Again, 36% is a very significant statistic.

And that's from how big the lunch tables are. I mean, what CEO is thinking about how big the lunch tables are in the cafeteria? It seems like such a minor issue. But that's something that our data has consistently shown: the importance of things like physical space that are traditionally viewed as either a cost center or just an afterthought in terms of how we manage our companies. But they're actually really essential to how people work.

I think that after learning this, the company wanted to temporarily duct-tape tables together so that people wouldn't sit in small-group tables.

My working hypothesis would be if you kept changing the size of tables, you would actually increase productivity more.

It's interesting. I'm not sure. There's definitely some limit because if you have a 50-person table you can't actually talk to everybody there. I know the size at Google, and yeah, the size of their lunch tables is also 12.

So, is that the magic number about 10 or 12?

It looks like, especially for programming teams, that number is pretty good.

Your technology integrates online communications, too, not just face-to-face interactions, right?

Yes. We pull in email, IM, phone calls, calendar data. We pull in all of that. For some organizations, that's more useful than for some others.

I'd say that in organizations where people are actually co-located, the only thing email data consistently tells you is how unhappy people are. Seriously. Essentially, the more email you get, the less happy you are. Maybe not so surprising, but it is interesting that we've just consistently seen that.

I can see why, if I'm a manager, I'm all over this. With very small tweaks, I can really improve the performance of my employees. But what about employees themselves? How do they feel about it? You said they get to opt-in on the program?

There's a lot we do around privacy and around how we roll out the technology that I think is critical for getting people to actually want to use our system.

First of all, yes, we do this on an opt-in basis. We give people consent forms that show them the database tables of what we collect. We don't go into a company and just say, "Here, everybody. You're going to wear this sensor." It's a 4-week rollout process, and mostly what we're doing is explaining what the technology can and can't do. We don't record what you say. Your boss doesn't get to look at your data. We don't count how many times you go to the bathroom. Once we answer those 3 questions, that makes people feel a lot better.

On top of that, as I mentioned earlier, employees own their own data. They get feedback on their own data and

get to compare themselves to, say, either the average or top 10% of employees. They get to see those differences. And they know what it means.

Say they're a salesperson. I can say, "Here's what the best salespeople do, and here's what you do. If you do this, if you talk 10% more to people on your team, here's how much more you're going to sell." They will literally get paid more money by doing that.

On top of that, it's also a fun thing for lots of people to actually see how they stack up in general to everyone else. Not just a specific person, but to the group overall.

Is it a tough sell?

It does take a lot of work with the first groups that we roll out with at a company. But once we've rolled out with at least one group, then it becomes very easy to roll out to the rest of the company. Then it's not just me saying, "Hey, here's our consent form. Your company doesn't get to look at your data and this is really helpful for you," but I can bring out one of your coworkers and they'll talk about what a great experience it is, how they don't feel like their privacy is being compromised.

The Wall Street Journal and *The New York Times* interviewed our end-users and asked them about the experience. It's universally positive because we do a lot of work to make sure that they're happy, that they're comfortable with everything we're doing.

We feel like we're dealing with privacy in the right way, and we can deploy pretty much in any developed country in the world with no changes to the way we deal with data. We've gotten over 90% participation since we started the company, so we feel like we've been pretty good about getting that buy-in.

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