

[HIStalk Interviews Fred Powers, CEO, Dimensional Insight](#)

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Fred Powers is president, CEO, and co-founder of [Dimensional Insight](#) of Burlington, MA.



Tell me about yourself and the company.

The company was founded back in 1989. There are two founders. We have built the company organically. We have no outside investors.

We tend to focus in industries which have complex data. Our very first customer, in fact, was a dental implants company. Back in 1990, we showed them where their product was being bought and where a competitor was taking away market share.

From that very beginning, we have expanded. About 15 years ago, we entered healthcare, which is now a major focus for us. We are focused on rules and measurements so that we can bring integrity to measures so that they are accurately displayed so that decisions can be made.

What is healthcare's maturity in using data to make decisions as compared to other industries?

In any industry, you have some that are the leaders and you have some that are bringing up the rear. The sense is that healthcare lags behind industries as a whole. I don't think that that's really true.

I think that the difference here is that the data itself is more complex. If you go into a distribution company, you're basically looking at all of finance and then you're looking at product going into the warehouse and product leaving the warehouse. That's one data domain, and in a typical manufacturing or distribution operation, it's a finite number of domains.

When you move over into the area of healthcare, it becomes much more complex. Each domain by itself is relatively easy to understand, but when all of a sudden you have 50 of them, you have different stakeholders, and the data crosses these domains — that's where the complexity comes in.

Healthcare is complex. People have been looking at this problem for a number of years. It's just taking healthcare a little bit longer to solve some of these complexity issues that don't exist in other industries. Certainly electronic health records have helped because we're gathering this data. That would be a change. But if you look even at the electronic records, there are hospitals that have had that for 15 years and some that came on board only a couple of years ago.

Healthcare is getting a bad rap when people are saying that they're way behind times. It's just that their data is complex, in terms of all of these different domains and all of the different stakeholders that they have that they have to satisfy. If you're going into a distribution center or manufacturing, you might only have one or two plants. If you take a look at healthcare, you might have 20 different facilities, maybe more, and all that has to be consolidated, and yet it has to be broken apart as well. There's a challenge.

What lessons were learned from early healthcare data warehouse projects?

The short answer is that they don't work, but that's because you're attempting to solve a complex problem. Quite often, you're better off if you chip away at the problem with a collection of data marts. The concept of bringing all of this data together has been around for well over 40 years and it's always been a problem when you attempt to bring it all together into one place.

I do believe that what's happening with the data warehouse is it's going to move more towards a columnar database over a relational database. The reason for that is that you have more flexibility with the columnar database than the relational. It also handles higher volumes of data. Right now, as this data is collected, you have to ensure that you have integrity throughout the process, and the more data that you bring together and attempt to digest, the harder it is for that integrity to take place. You really need to decompose the problem.

Here at Dimensional Insight, we're using a columnar database for our storage vehicle. If you do research between a relational and a columnar, most of your research is going to come back and say that for a data warehouse-type approach, this is actually a better approach. There is a tremendous amount of momentum in terms of what was done in the past and then bringing that forward.

Just having proper data is really not the issue. You can ensure that you have integrity of data. Your bigger question is, do you have integrity in terms of your rule management? If you're looking at, let's say, an admission or a readmit, what are the rules for that? Are they consistent across the hospital? How do the underlying rules relate to the measures that ultimately you're scoring yourself on? Because something like an admit is used across a whole collection of additional measures. Does your measure equal what CMS says or is your measure slightly different, your rules slightly different?

This is now an area that the hospitals are going to be looking at, where before, they were just saying, "I just have to get some data into my data warehouse." Then what do you do with that data? How do you measure? That's where your measures come to bear. We use the term "measures." Some might use "KPIs."

The underlying rules are very complex. We could probably spend another half hour just talking about rules management. I can honestly say that these rules are more complex than what we see in industry as a whole. This is going to be the big issue in the future.

It kind of fits under "data governance," but the word here is "data." I think it's probably better if you were to call it "measure governance." It's more focused, because if you don't have these proper measures, how can you manage? This is going to be a real issue as we move forward.

Then they have to be centralized. Hospitals today are buying a lot of what I call point solutions. Each one of these point solutions has some BI in it, some dashboards, and of course this is based on a collection of rules and measures. What happens if those rules and measures in Point Solution A don't agree with Point Solution B? Which one is right? Do you have a central location for controlling these rules and measures? How does that affect the point solutions?

Over the next two or three years, we're going to start to see the industry look at this and say, "I've really got a management issue here that I didn't realize I had, because I was pulling the data out of my data warehouse." Let's assume they have a data warehouse. The rules were not in there, or if they were in there, it was just piece parts, and now all of a sudden, I don't have integrity when it comes to those rules. This is going to be some interesting times for these hospitals. In my opinion, they really haven't given enough thought to that.

How much help do hospitals need in understanding their available data elements and then finding low-hanging fruit to give them a faster payback?

Each hospital is in a different position. Larger systems will no doubt have some form of a data warehouse. They're wondering how they can maintain it and how they know it has integrity. You move into a smaller hospital, they might have no data warehouse. They have no governance. Depending upon the environment you're in, it's going to have a difference in terms of how you approach the problem.

We have some customers that are small hospitals and they're trying to see their data for the very first time. They're really not interested in doing anything that's fancy. You know, "Just give the numbers. I've been blind. Show me the numbers over time so that I can at least see trends." Then you move into a large entity and they're interested in doing more because they've already crossed that threshold.

That's another challenge that we have from healthcare. When you go over to industry as a whole, they're all pretty much kind of at the same level, where when you move into healthcare, that's just not the case.

Obviously, whether it's a large entity or a small entity, the goal is to pick some problem that they have and then solve that problem. Then solve the next problem and the next problem. It's kind of like eating one grape at a time. If you attempt to eat too many grapes at once, if you've got a young child, you know that that's not a good thing. We try to avoid that.

Let's focus on something that's important, something that you need today, and then what data sources you need for that. Let's ensure those data sources have integrity. What rules are required? What measures are required to support that need? Let's make sure that's in place.

Let's ensure that you have the necessary support staff, which I might add, is not necessarily IT. A lot of it will be a nurse practitioner, as an example, or a doctor who has left the fold and now they're into the analytics and they understand what's necessary. They understand the data. Quite often an IT professional might not understand that. They're more a technologist. You need that business manager. This is a real issue because a lot of hospitals don't have those people.

Is the key to analytics adoption providing pre-built applications or perhaps finding a data-curious department expert or that rare technologist who wants to work with users to answer their questions?

It gets down to where are they on the adoption curve. Let's assume that this hospital is just starting out. You want to give them a package containing a collection of measures, predominantly CMS, so that they can track where they are. Now, if it turns out that they have history — which they should have, depending upon when they converted, because quite often when you convert, you leave your history behind with the older system — they can go back and look at how those metrics have performed over the last two or three years and which way are the curves going.

Executives obviously like this a lot because they can see the trends. You've got to get something in front of the executive quickly, because he or she has to buy into it. They have to see value in it. At the executive level, they're interested in a certain amount of information and they want the ability to dive into the underlying detail. Then your detailed analyst obviously might want even more information, and they become what we call a diver. In other words, they can just go in and they can swim in this data however they choose to understand what they have. But without question, you need the executive.

The other thing that's happening is herd mentality. We've been doing this since 1989 in a multitude of industries. Let's say that you've got an early adopter and they're doing their thing. Then you've got another early adopter and then you've got three and four and five. Pretty soon, you start to get this herd mentality, like everybody's got to do this. That's what's happening in healthcare. If you went back 10 years, you still had the problem. People just didn't recognize that they had to solve the problem.

Now you have a certain amount of herd mentality. "Oh, they're doing this at this hospital. That's pretty cool. I think I have to go do that." You can't leave the emotion of the decision-maker out of the equation. There's a lot of emotions in these decisions. Hospitals tend to be very political.

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