**RedZone Podcast Episode #81: CIO Visualization Skills of the Top 20% – with Scott Berinato**

Bill: Well Scott, I want to welcome you to the show today.

Scott: Thanks for having me, Bill.

Bill:

[00:00:30] This topic, I am just completely pumped about because as you and I were talking a little bit beforehand, making more persuasive arguments and building a story around visualization of data it's just really near and dear to me in the world that I'm living in with security. It's funny, people talk about big data, Scott, but I think it's the little data that was where we win with the context around the big data.

Let's jump into a little bit about yourself for a second. Could you just give my audience an idea of who you are and why you're on the show today?

Scott:  
[00:01:00]

[00:01:30] Sure. I'm Scott Berinato. I'm a senior editor at Harvard Business Review. That's sort of my day job, but in the course of some of my previous work at IBG and CIO Magazine and CSO Magazine, I've always had a penchant as an editor for trying to find visual solutions to communicating. Even as a writer who loves words, there are always concepts, especially in technology and security where complexity got the best of me and I couldn't find the right words, but I could find the right pictures to do it. I was sort of always interested in it, and then when I got to HBR, it just sort of started to grow and I found myself doing it more and more.

[00:02:00] And something else was happening in the world too. The tools were getting better, so I could actually do more visually more quickly sort of more easily than it used to be possible and I wanted to explore that. I said to an editor here, "We should do a book on data visualization. This is really important to business right now." And he agreed, and we set out looking for a writer for that book and I was going to be the editor, and we couldn't really find the right person for what we wanted to do with data visualization, which was a little different than a lot of the other books.

Eventually he came back and said, "Why don't you right it?" And I sort of said, "No," and kept putting him off, but ultimately I decided yes, I think I could write this because I do have a point of view on data visualization and how important it is. And that's sort of how I got to where I am now, the data vis geek as it says in my bio.

[00:02:30]  
Bill:  
I saw that. Data vis geek. So you have a point of view and can you take us back to where the genesis of this point of view was. When did you put a stake in the ground and say "Enough is enough. Visualization of data is going to win and I need to learn this and be a leader in it." When did that happen for you?

Scott:

[00:03:00] Yeah, it happened about three or four years ago really when it solidified in my mind. But I'll tell you, it started way back in 2011. Two very specific things happened. One was HBR published an article about big data. I can still see it in my head, it had an elephant on the cover of HBR. And Mackenzie put a report out on big data and said, "This is the next big thing, everybody needs to pay attention." Companies started investing in big data big time. They were buying all the infrastructure to create it. They started collecting massive amounts of data.

[00:03:30] It occurred to me at that time, but it then sort of as time passed I realized it was inevitable, that really to make use of big data. There is so much information. There's no other way to make sense of all that data except visually. And that's when I started to think there is a future for this where this becomes not just a nice to have thing where certain people can do pretty charts and graphs, but eventually we're going to have to be able to communicate visually because there's no other way to look at all of that information and see patterns and see trends and see outliers.

[00:04:00] In fact, that sort of started to get affirmed by executives who after a few years of investing in big data said, "Well, what are we getting out of this?" It turned out that even if they were getting certain things out of it, they weren't able to understand it because they weren't being communicated with visually. So even if the big data team could create a nice chart that the big data team understood, they weren't able to present something to the executives that they understood. That's when I really said, "Okay, there really is something here where we have to get better at visual communication in order to make sense of all of this data we're collecting."

[00:04:30]  
Bill:  
Were you always someone who thought visually, or was a communicator ... when using PowerPoint for example, did you always have a knack for taking concepts and communicating them in images and finding patterns and such? Was that always something that was a key skill for you?

Scott:

[00:05:00] I felt like it was, Bill, and it's sort of funny because I always said, "I'm a visual thinker. This is how I do it." When I come across a complex problem, I want to visualize how I'll get myself out of it. And in fact, when I used to write a lot, do a lot of writing for magazines, I'd often structure the stories visually in my head first or create an outline that was sort of a visual representation of how the narrative would go. So I always said I'm a visual thinker.

[00:05:30] And then I talked to some scientists who said, "Actually, we're all visual thinkers." Vision is what the mind does and we all have about the same capacity to become visual thinkers. Some of us are just more attracted to it than others sort of naturally, but we can all learn to be visual thinkers and I think we all have to. But yeah, I would always say I liked to find visual solutions to communication problems. It's just my natural inclination was to do that.

Bill:

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[00:06:30] Interesting. What's interesting, I wrote an article a couple ... actually a year and a half ago about the bandwidth capacity of our eyes and this is well before you and I connected, but that was a presentation that was at TedX being taught by Tor Nørretranders. And he talked about the bandwidth capacity of our sight and our touch and our smell. He equated to ... I guess what he said was touch has roughly ... no smell has 12.5 megabits a second, roughly the throughput of a hard disk on a computer, touch 125 megabits a second, I guess the throughput of a USB device, and then sight has 1250 megabits, roughly the throughput of a complete computer network. Is that ... what are your thoughts on that as far as the way we're wired as a human being?

Scott:

[00:07:00] I talked to a lot of vision perception scientists when I was researching the book, Bill, and one of the said to me, "Look, vision is what the mind does." And in fact when your eyes are active, it starts to downplay your other sense, so vision is not only what the mind does, it's what the mind wants to do. Again, so far as to create phenomena like pre-attentive processing. What happens is, is say I flash something up on a screen, a really beautiful chart that has lots of color, lots of dynamic lines and shapes and there's just a lot of visual activity there, my brain sees that before I actually know it sees it and starts to think about what that might mean before I'm even prepared to sort of take it in.

Your brain is already processing visual information before your sort of even aware of it. I always think of that, even when I'm' writing that the brain wants to see and we can take advantage of that as visualizers.

[00:07:30]  
Bill:

[00:08:00]  
So one of the parts of your book that was really powerful for me, and if I may, we could use it as one of the launching points is that you in the beginning said that businesses new lingua franca, and it basically said that for competitive companies it's imperative that those that don't have a critical mass of managers capable of thinking visually will lag behind ones that do. Then you quoted a VP of Carlson Wagonlit Travel, " Business managers and leadership who can't create clear visualization are less valuable." Can you build upon that and just ... I just love that and I just want to spend a couple moments just explaining what you mean there.

Scott:

[00:08:30] Yeah sure. This is sort of a very important point to me, and I've seen it over and over again when I go to companies. The companies that invest in this are going to do better because they're going to see in all that data they're collecting, the opportunities, the risks, the sort of trends that are important, and they're going to be able to think and act strategically based on what they see. And the companies that aren't good at it are going to miss things. They're not going to see the same things. It's become clear to me that with so much data, it's impossible to operate without visualizing that data.

[00:09:00] Likewise, for individuals and managers, the ones ... and I heard this story over and over again when I was researching the book. I would talk to somebody who had gotten very good at visualization and they would say, "I didn't set out to do this, but I did it pretty well, and what happens is people are so enamored of a good chart that they would come back to me and say 'hey could you do one for me, or could you do that again, or can I show this to this or that person?'" And their influence just naturally started to spread because people were seeing the visualizations they were creating, reacting to them positively and wanting more of it. And I heard that story over and over again.

[00:09:30] So if you can actually improve your visual communication, people are going to notice that. They're going to see it, they're going to feel like they're getting insight from you they don't get from other places. In fact, I've seen this too where you create a bunch of good charts and then you do your presentation the next guy goes and his charts are not as good, not as clear, not as easily understood, there's some real comparison happening there. The bosses notice that. They see that and they think, "I'm working a lot harder here to get information from this second set of charts than I was before. Why is that?"

So I think it's really, really important that people sort of develop their skills.

[00:10:00]  
Bill:

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And I think one of the pieces that is a little bit frustrating for me is maybe we can start to breakup what it means to be a good data visualizer because I've brought up here the concept of ... when we talk about innovation and transformation a lot on this podcast and as we are trying to abstract from complexity and making things simple, there's a need to innovate in how we've always done things. Where you finding the skillsets for a lot of people ... I mean there's a lot of ... people are getting, the 40 plus crowd is 40 plus and I'm trying to get people to stop having excuses about why they've done things for 20 years and why they have to change.

[00:11:00] Once they've bought into the fact that they have to change, they come up with a different way of approaching data, how do they go about doing this? How ... what are the mechanics of what they need to do to become a good data visualizer? So maybe we can get into some of those pieces and those building blocks that you think are necessary for business leaders, business IT leaders to develop this skill.

Scott:

[00:11:30] Yeah. And I think this is a really important point and one of the reasons I think my book is different than some is my book is not a rule book about if you just follow these rules you'll become a great data visualizer, if you just always use these colors and make sure your bars are this thick and this far apart and your labels are this shape. There are some rules you have to understand, but really I didn't want to do that. I wanted a guide to help people think through the idea they're trying to show rather than think through the structure of their chart.

[00:12:00] So I always tell people, you don't have to become an expert designer to do this. I'm not an expert designer. I think that actually benefits me when I talk about this. And you don't have to be the perfect data wrangler to do this either. I'm not that either, right? You have to know some data and you have to know some design, and we talk about that in the book, but the real key is the design thinking process that we lay out in the book, and usually in an hour, maybe a little more sometimes a little less, you can get to really, really improved outcomes with your charts mostly just by talking, doing a little sketching and then prototyping a little bit.

[00:12:30] I think one of the reasons you hear that resistance is that it's so convenient to click the button in Excel or Tableau or whatever program you happen to be using. It's so easy to click a button and get a visualization that it seems like why would I spend all of this extra time trying to get to something else or something that might be better. Until you actually do that and you realize how much better your charts can be. We're sort of addicted to that convenience of the click and vis is what I call it, but if you just spend a little bit of time talking about your idea, sketching out possible solutions and then prototyping your final chart, you'll be amazed at how much better your charts become.

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Bill:

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So you called it click and vis, so I hear this quite a bit where I'll talk about the power of visualization, this is from a concept of a CIO or CSO really abstracting a lot of complexity out of their security environment to not overwhelm people but to give them a clear map of what actually needs to be done and so I often hear, "Oh, I did a visual. I did it in PowerPoint or I did a pivot table," or I did something, and all of the sudden it basically erases what I just said because they are the hero of data visualization right now, but I've really lost because I haven't really explained what data visualization is and what the distinction is between a world class data visual designer versus just click and vis. Like so what are the elements that the data clicking ...

Scott: Click and vis.

[00:14:00]  
Bill:  
Click and vis in Excel and Tableau, what would be the difference between the click and vis person and someone whose actually done it the way you're explaining?

Scott:

[00:14:30] Sure. There's a little bit of semantics here, but I'm going to try to play with words here a little bit. The click and vis solutions tend to visualize data cells very well. A good data vis shows an idea very well, and there actually is a difference between those things. I think because it's so easy we just say, "Okay, select column C, column D, rows one through 55 or A through Z, or whatever. And visualize, and give me my chart." And then maybe I'll tweak the design a little, I'll change the colors, change the headline, so on and so forth. But really, all I've done is taken a bunch of spreadsheet cells and visualized them.

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[00:15:30] When you sit down and put your data aside and start talking about your idea, you realize that often times the automatic output is not at all what you need to communicate your idea. I'll give you a very brief example, Bill. I was working with a consultant who had a series of bar charts, and there was four clusters of bar charts and there were a lot of problems with his charts. But one of the main problems was they were the automatic output of Excel, and each set of four bar charts had a different color for each bar, each one represented a year, 2015, 2016, 2017, 2018. And he had all these bar charts sort of lined up next to each other, and what you really saw was this sort of overwhelming stripey-ness for lack of a better term. Just stripes of colors in the chart and then the bars tended to go up over time, but it's really hard to compare differences, really to compare clusters of bars to each other.

[00:16:00] And we went through this talking and sketching process, and I said to him, "Why are the bars different colors? Is that important to you?" And he said to me, "Well no. That's just what the software did. But the color of the bars isn't important, the trend line is what's important." He actually said to me, the trend line is what's important, and he had shown me a set of bar charts. Bar charts are not trend lines, but trend lines are perfectly good visual approach.

[00:16:30] So he had been thinking about a trend line, but he just didn't get to that because he didn't talk about what he was trying to show these people, the trend line, and he just got the bar chart and he said, "That's good enough. I'll put it in my presentation and we'll go from there." And when we transformed it to a trend line, where you could compare lines to each other in the same visual space and actually the lines only had to be one color, you didn't need more color for different years because you're not comparing the years. You ended up with this much, much better useful tool to communicate to his audience. And that happens all the time.

When we start talking about what we're trying to show, the idea we want to convey, we end up at very different solutions than the automatic output of the visualization tools.

Bill: So then taking a step back with what you're saying and looking at what's the idea you want to convey to your audience, that's when the shift happened, and really he had his own answer is what you're saying.

[00:17:00]  
Scott:

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He knew what he wanted to show. Just didn't think it through, and this happens all of the time. When we do this talking it's really amazing actually. It's fun to do because when you talk, you sit down with someone and you talk and you ask them why a lot and you really challenge them to explain themselves, they'll start speaking visually. They'll say things like, "You know sales fell of a cliff," or "There was a huge gap between this and that." And you start to say well you're actually describing to me what you want to show. You want to show a huge gap. Let's find a visual solution. Let's start sketching visual solutions that show a huge gap.

And this happens all the time. It's really amazing to me. People are sort of, they almost surprise themselves when they start to hear the words they're using. There was no real trend, it was all over the place. All over the place is very visually descriptive, and I can think a lot of interesting visual ways to show all over the place.

Bill:  
[00:18:00] You're mapping basically people's words and you're really capturing that as the image of what seems to describe the data they're trying to portray.

Scott:

[00:18:30] Yeah. And as I say in my book, there are certain words that map to certain visual types, right? So if you find yourself saying is made up of, a portion of, or takes up some part of, these are proportional terms. These are words that are going to lead you stacked bars, stacked areas, kinds of proportional charts. If you hear yourself saying from, it goes from this to that or it travels over this time or you hear these sort of traversing words, those are usually trends and line charts tend to be good for trends and they're some others as well. If you hear yourself talking about spatial, everything's clustered over here or it's scattered all over the place, that tends to be distributions and I think about scatter plots and histograms there, so there are ways to actually start to understand the visual language you're using and the types of charts it probably maps to.

Bill:  
[00:19:00] What are the obstacles right now? What are you seeing would be an obstacle for decision makers that want to convey ideas and concepts? What is typically getting in the way? What are the top five things that are getting in the way for people right now?

Scott: Okay, number one for sure is intimidation. People are worried that it's hard, that they're not going to be able to do it, and one of my motivations for writing the book the way I did was to say, "This isn't as hard as you think. You don't have to become an expert. Just a little bit of work will go a long way." So I think that's number one.

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[00:20:00] Number two is the tools landscape. There are a lot of tools out there. There are more every day. They're getting better every day. But there's no one tool that does everything well, and all the tools do certain things well. It's really a lot of trial and error and what are you comfortable with and what tools do you like to use and what tools do you not like to use, how much do you want to invest in those tools. The tools that tend to do more things well also require more training, like Tableau or something like that. But there are plenty of tools online that are either free or close to free that can do a lot of your basic blocking and tackling really, really well. So the tools question is always one of the first questions I get when I do talks. What tools should I use? And the answer I wish was better, but it's play around and find the ones you like and here are some of the ones I use.

Bill: Is their a favorite? Sorry to pause there, but I know you've only given us the first two of a couple. Are there some tools that are free or close to free that can cover 75, 85% of most people's needs that you find?

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Scott:

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The one I use the most and I think is great for prototyping and can create some really good final output too is called Plot.ly, P-L-O-T dot L-Y. That's one I go to a lot. But there are others, and there's one called Exploratory that I think is up and coming and doing pretty good stuff. Plot.ly is the one I use the most when I'm prototyping or trying to find visual solutions and creating output that has to get refined at some point, and that can do most of the forms I need it to, not all of them. And has just enough sort of statistical capabilities to be good for me. So I tend to use that one a lot.

Bill: Okay. That's great. Thanks for that, because I think people, I'll link onto that for the show notes. So I stopped you tools. You talked about intimidated and worried that it's hard and then some tools, and then what was the third?

Scott:  
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[00:22:00] My third is the audience. I think people anticipate their bosses are so used to seeing the output that they do that they're not going to welcome something that's new or different, or dare I say simple. I think there's a lot of courage that needs to be developed. People, and I see this over and over, I was just doing a workshop with somebody who was presenting a chart we were going to workshop, and the chart was a series of stacked bars. So you can imagine 10 bars going across and each bar had some components, with a line going over the stacked bars and then each piece of this was labeled with a number. It was extremely busy, extremely complicated, extremely hard to read, and it was supposed to be kind of a monthly update chart. You know, something that the bosses could glance at and get a sense how the business was doing.

[00:22:30] We work shopped some solutions to that that were far simpler, far simpler. Much less information on the page, and the guy, he was really uncomfortable with it. And I hear this all the time, that people are really afraid of showing something simple. And I think there's a couple of reasons. One is, you better make sure your idea is in there if it's simple, because if you have the wrong idea they're going to see something simple and say, "That's not what I need," so there's a little bit of that. If you're not sure what your idea is then simple is scary, because you might have the wrong idea. But if I put every idea in there, then my idea's in there somewhere.

[00:23:00] But also I think people want to demonstrate how much data they have, how busy they are, how much work they've done, and they think that a busy chart is somehow sort of a semaphore for the amount of work I've done. But I've never come across an executive who hasn't appreciated a simple chart.

Bill: Yeah.

Scott: It's really hard to have the courage to stand up in front of your bosses and show a chart that shows one idea really well. It's not something we're used to doing, but it works. They have to trust that it works.

Bill:

[00:23:30] It's interesting, I was just directed to this book. I haven't read it yet but I've started to read some of the pieces of it, maybe like 20 pages called "Beautiful Constraint," and it seems we're very uncomfortable ... to your point about being uncomfortable with constraint and with simplicity and in a very complex world it's almost that people are afraid that we're not going to respect all of the complexity or respect the data by actually forcing the simpleness at the top end. Almost like that there's going to be a lack of respect for the information possibly.

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Scott:

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I find this, Bill, with data scientists especially, that they either think that simple charts are juvenile or somehow not up to their standards of the amount of data they have, or they often think they're somehow misleading or even dishonest because they don't include all of the information they've collected. They think I'm dispassionate, I've collected all this information, I must show all this information. And I like to say, and sometimes people get very upset with me, that every chart is a manipulation. Every chart is a series of decisions conscious and subconscious about what to include, what not to include, what shape to make it, what colors to use, all of these are decisions that are sort of artificial and arbitrary in some ways. In that what we have to do is use that responsibly, we don't want to be manipulative to a bad end, use it responsibly but then also understand, put ourselves in the mind of the audience and understand what is the information they need, not what is the information I have.

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Bill:  
Isn't that a design thinking principle though where from a lot of the innovation work that I've done and speakers and guests that I've had on the show, it seems to be one of the primary tenets is to really go into the world of your audience, or it might be the future customer, it might be your internal customer or it may be whoever you're presenting to, you're getting in their jockstrap of experience to really understand. Isn't that a design thinking concept?

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Scott:

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Absolutely. A lot of this is basically applying design thinking to making your charts. When you do this talking concept I talk about, you're really trying to understand that and you're really trying to get to that. You can say, "I've got this data about sales and revenues and I kind of want to show that there's this weird relationship between sales in the winter and revenues." And you say, "Okay, well why do you want to show that?" "Well I think my bosses have been wondering about what's going on in the winter." If you ask enough questions, you actually get to the point where you're not trying to show sales versus revenues. You're trying to show why winter is a bad time for us to have these promotions or something like that. You're actually trying to show an idea that is not just your data. Your data actually explains an idea, and you can only get to that if you don't just click and say, "Visualize these cells," and put it away. You have to think that through.

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[00:27:00] It actually works the other way too. When I talk to executives about dashboards, everybody loves dashboards. And oftentimes they say they've created these dashboards, they're beautiful, but I don't really use them. I say, "Well what do you need your dashboard to show?" And they'll say, "Well, I want to see revenues over time." I'm making this up quickly, but I want to see revenues over time. And I'll say, "No, what do you need it to show?" "I need to see revenues." "Do you need to see revenues?" And we'll talk about it, and eventually they'll get to the point where they'll say, "I need to know if our revenues should concern me with their trend in the last three weeks," or something like that. Or "I need to know if what's happened in the last three weeks to revenue is normal." And then I hear that word normal and I go, okay, well if I need to show revenues against normal, that's different than just showing revenues. And are there thresholds of concern and thresholds of non concern and so on and so forth.

[00:27:30] And when you talk to people about this you realize that what they need to know is very rarely the data. What they need to know is what the data is telling them.

Bill: Okay. So what's the data is telling them, not just the data. Okay. So that means you have to tell a story around the data.

Scott: Story telling with data, my favorite topic.

Bill:

[00:28:00] Interesting. I think I make a mistake when I do presentations, I try to explain a concept in five slides that I probably should spend the time figuring out how to do it in one slide. Is it true that ... when do you know when you've put too much information on a slide versus actually respecting the fact that that one slide could potentially tell the whole story? When do you know it's too busy versus it's exactly the point, it's perfect. Where would you go to know whether you've overdone it?

Scott:  
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[00:29:00] Right. There are a couple of contextual issues here. One is how familiar is your audience with the types of charts and visuals you're using? If they've never seen a dot plot before and you show them a dot plot with a lot of information on it, you're really putting yourself sort of at a disadvantage because first they have to figure out what it is. Then they have to figure out how to use it. And then they have to figure out what this particular one is saying. So with new chart forms, with ones they're not used to seeing, you should be as simple as possible. If there's a particular type of chart, a monthly forecast chart that they're used to seeing, you could probably get away with a little more complexity. But I'll tell you though, I am of the, especially in presentation settings, I'm of the mind of one to two ideas per slide at maximum.

Bill: Okay.

Scott:

[00:29:30] If you have more ideas then you should break it down into many simpler slides. And it's sort of fun, I do this because my presentations are actually very rarely more than one idea on a slide. I'll ask people at the end of my presentation, how many slides they thought my presentation was. And the guesses usually range between 30 and 70. And my typical presentation has between 130 and 160 slides.

Bill: Oh, I see. That makes sense. So you're not shying away from the amount of slides. You're just really respecting the one to two ideas per slide, but you're just moving through it.

Scott:  
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[00:30:30] The number of slides is the wrong metric to think about. The right metric to think about is how many ideas per visual field, per slide in this case. And really, when you have one idea on a slide, guess what? You only have to spend four seconds on that slide. People will see it and get it and you can move to the next one. This is really great for visual storytelling too, where I can build a story but very simple ideas sort of sequenced. I do this a lot with one of my storytelling presentations where I'll take a really simple chart. It is a chart of the price of peanut butter over a decade. Literally time on the x axis, price on the y axis and one trend line. And I say to people, how many smaller sort of visuals you think I can make this to turn this into a story, and they say three. And I can actually break that down into seven smaller pieces to tell a story.

[00:31:00] Now every piece I'm only spending two to five seconds on rather than putting the entire story up there and explaining what everybody's looking at while they're looking at it. And it's a really great way to get your audience to focus on one idea at a time. You're not making them guess where they should start. You're not making them guess which is the most important part of the visual that you're showing them. You're only giving them one thing to focus on.

Bill: Can you back up for a moment? So this is interesting. So you had the price of peanut butter over time and instead of just showing that in one graph you're saying I'll stop there ... what did you say would be a good strategy for presenting that idea?

Scott: I'll actually walk you through it if that's okay.

Bill: Sure, yeah.

[00:31:30]  
Scott:  
So normally you just say, here's the price of peanut butter over the last decade. And then your audience, especially in a presentation setting, your audience is looking at it. They're looking at the line. There's two other marks on the page, I should say two lines at certain points in time that intersected [inaudible 00:31:43] the line of the price, and they're looking and they're trying to figure out what everything means and where the price is going and why am I showing you this.

[00:32:00] So this is what I do. I take the X and Y axis and I say, "What happened to the price of peanut butter" as a headline and I have an X and Y axis and it says time on the X and it says price on the Y and it's blank. And I say, "We're going to talk about peanut butter prices." And then I click and then part of the trend line appears, and I say, "For five years, peanut butter prices were steady." And people can see that because it's the only idea. It's sort of a flat line.

Bill: Okay, I see what you're saying. Okay.

Scott:

[00:32:30] And I say, "But then something happened" and I draw one of the lines that intersects. There was a drought. And I say, "What do you think happened to peanut butter prices after the drought?" And I actually invite people to speculate, because now I'm getting them to engage in the presentation. I'm getting them to think ahead what's coming. I'm activating the narrative juice in their head, what's coming next.

Bill: This is the storytelling piece. Okay, this makes it come home. Okay, keep going.

Scott:

[00:33:00] And then they say, "Well we think prices went up after the drought." And I say, "Actually, no they didn't." And I show them that the line keeps going flat after the drought. I said, "Actually, you know the drought didn't have much of an affect on price until you see that it starts to go up at the end there, at the end of the season because people were worried about the next harvest. And what do you think happened then? Another drought." And I draw the next line. "What do you think happened to prices then?" And people speculate again. And then prices shoot up, and I say, "Okay, and then do you think they've returned to normal now?" And they haven't.

[00:33:30] So this very simple line chart becomes this exercise in me presenting one idea at a time, just asking them to think about it and think about what's coming next to activate that narrative approach and it becomes a much more powerful approach. Now, to get from the blank visual to the final visual probably takes 18 seconds. If I did it with just putting the chart up and letting everybody sort of study it and understand it and then started talking over it, I'm still going to take 18 to 20 seconds to do that, but I haven't created nearly the same comprehension or delight or sort of narrative resolution that I did by breaking it down into the simpler story.

[00:34:00]  
Bill:  
This is great. I think this makes it come alive from the parts I was reading in the book about it. I love it, because I made these mistakes last week. I think we all have. This is a common mistake we make in our presentations.

Scott:

[00:34:30] I like to tell people who worry, they say I have a slide quota, and I tell them to tell their bosses slide quotas are the dumbest thing in the world, because it's not the number of slides, it's the amount of information on a slide that matters. So 100 slides that each have one simple idea are better than 10 slides that are trying to stuff 40 ideas on each page. It's just a very strange thing to me that slide quotas exist.

Bill:

[00:35:00] One of the things I get stuck with in putting these ... because I get it, I really understand where you're going here, but the problem what I would have is the images that support that. I would know that what I would want but then I would basically try to go to steal images from Google Images on the concepts I'm trying to make and of course I've already had to pay fines for doing that before, and I'm trying to figure out how to ... like where would I go to build some of these ... the images that I want?

Scott: The images in terms of the charts?

Bill: Yeah, the images in terms of the charts, yeah.

Scott: Well I mean ...

Bill: Are you stealing them from the tools? Because that would just be building them from the tools?

Scott:  
[00:35:30]

[00:36:00] You build them from the tools, yup. Okay. I've gone so far and I think a lot of organizations have started to do this and I think it's important, you develop templates. So you use the tools to get some raw output and then you plug that version into your template, and my templates have a headline style, an axis line style, axis label style, so by the time, no matter which kind of chart I'm using I have a style sort of in place, and I don't have to worry about all of those decisions about what colors am I using, how thick should my axis line be, how big should my labels be, where should they be put. I've taken the time to develop templates, so now I just dump it in and tweak.

That's really good if you're going to be doing a lot of this, to actually invest a little bit of ... penny saved is a penny earned kind of thing, a little bit of doing that investment up front will save you a lot in the future as you're trying to create more and more charts.

Bill:  
[00:36:30] That ... do you ever spend time ... one of the pieces in your book that I haven't read from it yet, but you talked about, what I really like is the image of ... I think it's a wood craftsman where you talked about that you're not going to be perfect in this. Building good charts is like building good cabinets, to be able to be a cabinet maker you mentioned here that you have to start off as an apprentice. Are you finding that's a helpful metaphor for people as far as building their skills?

Scott:  
[00:37:00]

[00:37:30] I think so. I think it frees people up to feel like I don't have to create the perfect chart every time. I think I say in the book something about when you start building cabinets, the first thing you do is just build boxes, very simple boxes. Forget about fancy hinges or ornate designs on the front or carving or anything. First you have to learn how to build a box. And once you can do that, we can move on to some of the finer details and some of the refinements that way and maybe you even come up with your own styles and innovations. But all we're trying to do right now is just get to the point where we can reliably build really good boxes, good cabinets. And I think that has helped people.

[00:38:00] I think in general, I wanted my book to feel approachable and I wanted this topic to feel approachable, because I do believe there is some intimidation. When people start to research data vis, when they go to Twitter and look up the hashtag data vis, there is a bit of an impressiveness and a judgy-ness to it. Everybody's judging everybody's charts, talking about what they like, what they don't like, and people sort of are intimidated to get started. What we're trying to say is it's going to be okay. I'm putting my armor on the reader saying, "Don't worry about all that. That's fine. We're just going to get a little bit better than the standard output you're used to doing, and you're going to see an out sized impact from just getting a little bit better."

Bill:

[00:38:30]

[00:39:00] So you mentioned the part about the courage needs to be developed. I have a question just to reverse it. So what happens if you feel pretty strongly about your ability to tell a story around the data, but you're just not as comfortable with the data itself? Do you find that there's multiple types of skills that are needed here as far as do you need to have a certain type of person that appreciates ... the data talent around you, is that come first and then this comes second, or can you just tell the story and then build your team around you around the data experts? Have you ever come across the reverse, where they've been stronger on the visualization side but less so on the data or they don't trust the data?

Scott: Absolutely. All of the time. And I always tell people, I say, "You want to get better? Do you think you're more the data type or more the design type?" If they say more the design type, I say, "Take a stats class. Or do an online stats class." Just get yourself familiar with data, data processes, don't become an expert, just get the basics, some of the basics. And likewise, with data people, I say, "Take an intro design class just to understand."

[00:39:30]

[00:40:00] I also like to say that whenever possible, especially in organizations, if you really want your organization to get good at this, don't look for unicorns. Don't look for the guy who's really good with design or the girl, the guy, or the woman who's really good with design, who is pretty good with stats and knows what the subject matter as well. I really advocate for building a team where you have a subject matter expert working hand in hand with a designer and a data expert. And maybe one person has two of those skills but not all three. Maybe one person has one of those skills really strong and a little bit of the others. It doesn't matter, but start thinking about working in teams, and bringing together people to work on this together and appreciate what each brings to the table.

[00:40:30] I've seen a lot of companies start to do this, and it really pays dividends. This is how I work on them here. Oftentimes, I have a little kitchen cabinet of folks both data folks and design folks who I can turn to when I have a challenge and say, "This is what I'm trying to do. Can you help me?" Or I'll use them to bounce ideas off of and it's really important to start thinking about this as a team game again, because that's the way it was for a long time. The thing that changed it and people assume that if you were going to the trouble of making a visualization you should put a team on it. Well what changed that of course was chart wizard and the click and vis, and it just became so easy that the convenience kind of trumped the quality and I think we got to get away from that.

Bill:  
[00:41:00] Do you have a ... where would someone go to kind of on demand build that team. Is it something ... does it have to be a full-time staff position or could they go to like upwork.com for example or could they go to a community of data vis people that you found that you can kind of quickly get access to this type of talent? What are your thoughts on that?

Scott:

[00:41:30] Yeah, I think that the discipline of information design, that's a good term to plug into your search engines, is a growing one. If people are looking for a career, information design is a really interesting growing one where people actually sort of have some statistical background but take a design approach or vice versa. That's one place to start. A lot of firms do this now, there are firms that are starting to do this. There are college courses on this, on data visualization and data vis literacy and that kind of thing. But information design is the term of art that I think will get people down that road and you don't have to have it full-time depending on the size of your shop.

But a lot of shops have designers and have data scientists and have subject matter experts. It's just a matter of getting them to sit together and talk.

[00:42:00]  
Bill:

[00:42:30]  
What's really interesting is that you talk about, you use the word prototyping and a lot of times in the innovation and transformation space, they're this lean and kind of rapid prototyping and this design thinking model, I think sometimes we have to remember that sometimes some of us are in the soft space where we're thinking and designing, making data. Our product is data versus our product being widgets or a project being something we can hold and is malleable. So it's interesting what you're talking about here, some of the concepts is how we approach data as a design thinking process versus the outcome being something that is physical and tangible.

Scott: Absolutely. Couldn't have said it better myself.

Bill:  
[00:43:00] Well so how do we wrap this up here today? What would you ... so if you were in an audience ... so what do you consider yourself world class at? What is the thing that you're on the planet for, that you are ... if I lined 100 guys up in your industry, Scott, you are going to be in that top 1%. What is that? What is that unique capability?

Scott:  
[00:43:30]

[00:44:00] Oh boy. That's a tough one, but I think it's the craftsmen approach to this. I think it's the ability to ... in some ways, I am a generalist in a world of specialists. I do know some of the data. I do know some of the design, but I'm neither a data scientist nor a designer, but I understand this as a craft and something that can be sort of developed as a skill over time by understanding the craft, understanding the science, understanding the art of it. And appreciating every piece of that. I think when you free yourself from sort of the biases of data science and the biases of designers and just think of this as its own unique craft, as cabinet making. Cabinet makers aren't necessarily contractors and they're not necessarily architects or designers, furniture designers. They're something in between.

I think the ability to live in that in between space is actually not a detriment but a powerful differentiator in a lot of ways. A powerful place to be in order to develop the craft and improve the craft and think about the craft.

[00:44:30]  
Bill:

[00:45:00]  
I really appreciate that and I think I'm going to leave the show kind of with that theme that you just mentioned, because a big thing I want the CIOs and CSOs listening and business IT leaders that are listening here is how can they move from the ... so if they're in this concept we're talking about, if they feel like they're at the JV level right now, and they want to varsity and then they want to move from varsity and they want to be able to perform at the next level, at the college level and then the national class and the international class and then be a world class expert at it, I think this conversations a great place to start and then your book, you know, Good Charts, the Harvard Business Review guide to making smarter more persuasive data visualizations and I think you've given us a really good starting point with some real kind of evocative ideas that we can take and start to experiment with. So I really appreciate you for this.

Scott: Well thank you for having me, Bill. Its been a lot of fun and great questions.

[00:45:30]  
Bill:  
What's the best way for people to reach out to you if they have a questions? Clearly they can go to Amazon to buy your book which I'm going to encourage they do. I'm always going to leave show links on our show notes page to a lot of information about you, but where would be a good place for them to get your most current information and potentially to reach out to you?

Scott:  
[00:46:00] Sure. I think the easiest way is our Twitter, which is @ScottBerinato. I think the spelling of my name will be part of this package I'm sure. S-C-O-T-T B- E-R-I-N-A-T-O and I'm easily findable on LinkedIn too. There aren't many of us Berinatos in the world, so you might get my brother or something but most likely you'll land on me. So Scott Berinato on LinkedIn as well.

Bill: That's great. Well, I'll put both of those on the show notes page. Well this has been a real treat, Scott, and I appreciate you very much for spending time helping educate my audience.

Scott: Thanks a lot Bill.

Bill: Okay. Have a great day.

Scott: You too.