

**Best Practices in Action Podcast Series**  
**Bob Lewis: Bad metrics are worse than no metrics**

Tim O'Bryan: Welcome to the best practices and action series, my name is Tim O'Bryan, Director of Global Marketing and Customer Relations for the Innovation Center and I will be your host for this series. This series we are bringing to you is focused on customer success stories and best practices in business intelligence and performance management.

Welcome everyone to the Best Practices in Action Podcast series brought to you by the innovation center for business analytics. I'm Tim O'Bryan, director of Global Customer Relations for the innovation center and I'm happy to be joined by Bob Lewis from IT Catalysts. Bob is the author of a number of books, one being a manifesto for 21<sup>st</sup> Century Information Technology, called "Keep the Joint Running." Another book is "Bare-Bones Project Management: What You Can't Not Do." Also a forthcoming book by Bob Lewis is being published later in 2010 entitled, "Bare Bones Change Management: What you Shouldn't Not Do – Seven Components of Business Management Plan" And, it's a companion book to the previously published book, Bare-Bones Project Management: What You Can't Not Do."

Bob, happy to have you here.

Bob Lewis: Pleasure to be here.

Tim O'Bryan: And we're going to be talking about bad metrics are worse than no metrics and one of your core principals of metrics that you talk about is you get what you measure, and that's the risk you take. What do you mean by that?

Bob Lewis: That's pretty straightforward, Tim. It's an interesting finding because, even if it doesn't affect compensation, it turns out that once any management team establishes one or more metrics, and just puts the chart on the wall or publishes them on a regular basis, people respond by moving the metric. And they'll move the metric whether or not it generates the results you want. The metric becomes the result instead of becoming an indicator of the results.

So if you establish bad metrics, if you establish a metric that for some reason doesn't respond properly to business improvement or deterioration, you'll get what you measure regardless. That's what employees will do for you. So as an example, I've told this hundreds of times. I've taught this tale of a mythical lawn mower factory

where management wanted to reduce the defect rate. And so, they put the big chart on the wall.

They measure defects every month or every week, and sure enough the defect rate starts to plummet, the problem ends up being there are two types of defect: Bad paint jobs, which blister and look unsightly; and lawnmower blades that shatter, amputating the legs of their customers.

It turns out that it is very easy to fix the paint jobs, it's very tough to fix the lawnmower blades. So, employees who are now focused on the metric instead of building good lawnmowers, neglect the blade problem in order to improve the paint job.

So, yeah, OK, so it's a little bit gruesome, but, by the way even though I'm from Minnesota, there are no Minnesota lawnmower manufacturers guilty of this, to the best of my knowledge. It is a myth. Just to illustrate the point.

Tim O'Bryan: Well, your point is well taken!

Bob Lewis: I don't want Torro's lawyers contacting me, angry as can be. It's not them!

Tim O'Bryan: Your four measurement fallacies, you want to discuss the first one, maybe we'll just go through each one, one by one, the first measurement fallacy you talk about is measuring the right things wrong.

Bob Lewis: Yeah, and this is a great example of it. The mistake that made in the lawnmower factory is not that measuring defects is the wrong thing to measure. It's that treating all defects as being equally important leads to a bad metric. You're measuring the right things wrong in that case, and when you measure the right things wrong, you'll get the wrong results. Because employees will move the measure instead of moving the business.

So that's number one. There are three other measurement fallacies...

Tim O'Bryan: The second one being measuring the wrong things right or wrong.

Bob Lewis: Yeah, and this is actually...it ought to be obvious...if you don't mind the metaphor, if you aim at the wrong target, even a bulls' eye is a complete miss. So, if you measure what's easy to measure instead of what's important to measure...For example, let's imagine that you're running a business in which what matters is process

throughput. What you care, is how much total capacity the processes has, but for some strange reason, what you measure is cycle time. How long it takes one item to go from front to back in the process.

If what you measure is cycle time, what you'll get is better cycle time. And if what you need is better throughput, or reduced cost or more volume or whatever, you might get it by accident, but there is a pretty good chance you won't. You're measuring the wrong thing. And no matter how well you measure it, you're still measuring the wrong thing. So, you'll get the wrong results.

Tim O'Bryan: That makes perfect sense. And the third of the four measurement fallacies is failing to measure important things.

Bob Lewis: Yeah, this is a tough one. Because, when a business depends heavily, especially when they've been heavily in something that's very hard to measure like customer satisfaction, there's a strong temptation to not measure something that is difficult to measure.

The fact of the matter is that because you get what you measure, so any that you don't measure, you don't get. So, if you measure cost, then you measure cycle time, you measure throughput, you measure quality, you don't measure customer satisfaction. If your business depends on customer satisfaction, it's something you won't get because everybody will be distracted to provide what you do measure.

So, the issue with measurement fallacy number three, what you don't measure, you don't get, is it can cause a business to fail while all of the indicators indicate success.

Tim O'Bryan: And number four, extending measures through employees. What do you mean by that?

Bob Lewis: Yeah, oh boy. This is the one that always gets attention. This is the one that generates the most controversy. If you take a measure that matters, let's say improve quality, and then you extend that measure to measure each individual employees' quality of their individual production, it turns out, sort of counter-intuitively, that instead of this helping you get what matters the most, it gets in the way.

And the reason it gets in the way is once employees understand that they are being personally assessed on a measure, they will do whatever they have to, to game it, to spin it, to manage what management sees in this so that they look good.

And it sounds like something that an effective manager ought to hand the manager better to make sure employees doing things right, this is one of those things that extends all the way up in the executive suite.

And I think all of us have seen one too many analyzed over the ten years, the case where executive compensation, which is, it ought to be constructed by the most sophisticated metrics people in the world. The compensation committee is the board of directors (that) ought to really know what they're up to, it turns out executives are very, very good at making business metrics look excellent when the underlying company is, in fact, deteriorating. We've seen so many examples of this over the last ten or fifteen years, that there isn't any need to list them all.

But that, if you want a high-profile example, it's kind of hard to miss, you only need to look at companies like Enron to see what happens when you extend the measure to an individual employee.

Tim O'Bryan:

Yeah, absolutely. And I would imagine it's further complicated when you think about you know, changing market conditions. Maybe one of your measurements is company growth. Or your business unit growth and in actuality, if you're measured against your competition, maybe you were much further behind the competition, but you still blew your personal goals out of the water. Which means, you were metrics-wise, very successful in your role, but versus the competition and versus the goal rolling down the climate with say, your business vertical or business industry, maybe you weren't that successful. So, it sounds like one of the factors to consider.

Bob Lewis:

Yes, in fact you're absolutely right. In fact, it works both ways. Since rising tide lifts all boats, you can have a company that's losing market share if the marketplace is expanding fast enough, everything looks terrific. And nobody's going to look too closely at whether their metrics are appropriate or not during that kind of a downturn, if you only, if your revenue drops five percent when everyone else around you drops twenty in you're gaining market share, you're actually doing well. But if you are measured on absolute growth, it looks bad and you're going to make some very bad decisions which could actually cost you your most valuable employees.

Tim O'Bryan:

So, I guess the big question is then, how do you get your metrics right? And you talk about having answers to three questions. What are we trying to accomplish at the first? What does success or

progress look like? And are we sure we'll like it if it happens? So, can you extend upon those questions, maybe, in a little more detail?

Bob Lewis:

Sure. The most important thing to understand about metrics of any kind is that, the question "What should we measure? What metrics should we use?" is the wrong question to start with. It leads you in a very bad direction because what you're focused on is the number. And the point of any metric actually, is to establish clarity about what success looks like, what progress looks like towards success.

So, the first question to ask when constructing a system of metrics is, "Do we understand what success will look like when we see it?" And that should be stated in English. And finally, it's not a target. It's not the number. It's "What does progress look like?"

So, if what you want to do, this moment that we run across all the time, this is why I say we need to improve our processes. So we're going to start mapping and then doing a current state and a future state and say, wait a minute.

Before you do that, there are a lot of different things that you might mean by improved process depending on what it is that you want to optimize the process for. Are you trying to minimize cost? Are you trying to maximize speed? To try to reduce defects? Are you trying to add product features and functionalities and have them be reliable?

There's a wide variety of things that you might want to optimize a process for. First you need to know what success looks like. After you know what success looks like, then you're in a position to set specific goals which underlie that success.

So, put it this way. Success overall really talks about the contributions, the overall business success. Are you trying to improve revenue? Are you trying to decrease Cost? Are you trying to improve the risk profile of a company?

Behind that are the goals that are going to get you there. We're trying to improve customer satisfaction. We're trying to improved product quality. We're trying to make our products more desirable in the marketplace. And when you establish those goals, that's where you need to pay attention to that third metrics fallacy. You need to make sure they're complete.

In other words, if you achieve all the goals you've laid out, will your business be successful or are there missing factors that are important to success that aren't on the list?

If there are any missing factors, once you are heading down the metrics path, you won't get those. And something that is very important to your success either is left to chance or you're going to risk neglect. So, you need set important ant goals, the main being make sure your goals are complete. Once you do that, you're ready to translate the goals into math. Which is where we're talking about: actual metrics.

So, English is a language. Math is a language. We're just creating the equivalency between...we're trying to reduce cycle time, and we are computing the elapsed time between when a work order enters the assembly line and when a finished product rolls off. So that's why, that's to move from English into Math, you then decide where you're going to set targets.

And by the way, targets are one of those double-edged swords you need to be very careful about.

Let's imagine we are focused on cycle-time. Let's say you want a ten percent improvement. The upside of setting a target of ten percent improvement is, everybody knows what you are trying to achieve. And even if it's a stretch, everybody will work hard to get there.

The downside is, once they get there, their job is done. If you set a target at ten percent, you achieved the targeted ten percent; everybody relaxes instead of achieving even better.

So, targets are a mixed blessing. They're situations where they are very important. And they're situations where they're counter-productive.

In any event, once you've got your metrics established with without targets, now it's time to figure out how you're going to collect the data. Because if you can't effectively collect the data in an unbiased way that leads to a reliable data set—and Tim, you live with business intelligence, which is all about having data that you can count on, fully-scrubbed, fully-reliable, and appropriate for analysis, so that when you compute your metrics—you can count on them.

So you need an effective data collection mechanism that isn't so expansive that you're going to give up on it after a couple of months.

- Tim O'Bryan: Right. Currently, people are debating the numbers, one person to one number for the same metric; another person to another number, clearly that's going to throw into doubt the credibility of the information and therefore, no one is going to get any value out of that information because it's all going to be considered wrong, if you will. So, after...
- Bob Lewis: Yes, absolutely.
- Tim O'Bryan:: ...we must get the data right and delivered to the appropriate folks in a timely fashion to measure progress against these metrics that have been define in those quote, unquote, key performance indicators, right?
- Bob Lewis: Yes, right. And, the other piece of it, is as you think about it when you collect the data, you need to make sure that the cost doesn't exceed the value. At some point you might decide that the best way to collect the data is something that's going to cost 5 to 10 times the business value that you'd get out of the analysis, and now it'd be because of one of those academic exercises that adds a three or four months...the executives are going to pull the plug on it. Because you literally can't afford it.
- Tim O'Bryan: There's obviously a number of metrics you can measure against people's performance or business unit or function or performance...But you're absolutely right, I think a very, very key point to make is that, sometimes the effort required to compose those numbers (on a) consistent basis (you) might want to actually not (be) measuring that, for that particular indicator if you will.
- Bob Lewis: Yeah, and in general, if the data collection isn't built right into the process in as automated function as possible, ther'es a pretty good chance that eventually it's going to turn oyut to be too expensive to continue with.
- Tim O'Bryan: Right.
- Bob Lewis: So, that's the key to this is that the...all of the data that you need for your metrics system, that collection should be built right into your processes and systems so that they happen with very little additional effort.
- Tim O'Bryan: So Bob, now tell me that next step now. What are the properties of good metrics, and you call them the 6 c's. Connected, consistent, calibrated, complete, communicated and current...Why don't we

walk through those, maybe one-by-one, talk about connected, what do you mean? Connected to important goals...

Bob Lewis: Yeah, well, and I'm glad you asked me that. That's exactly the issue. If you remember the process of establishing good metrics begins with understanding what success looks like and establishing goals. So, any good metric, the starting point is that it's connected to a goal. It isn't connected to, for example, one of my favorite questions, what does everybody else measure? Which the answer to that question is only useful if it's, we run our business exactly the way everybody else runs it and we have no differentiators. So, the starting point is: knowing your goals. Then a good metric is connected to one.

Tim O'Bryan: OK, and then consistent?

Bob Lewis: Consistent is, this is my favorite. I like connected, but consistent is my favorite. Any good metric always goes one way when the situation improves and always goes the other way when the situation gets worse. Otherwise when the metric moves, it might be interesting, but you had no idea improvement has happened. And there are some very high-profile managers around the industry that violate this rule. You and I have talked privately and, what the heck, there's a very popular metric out there called total cost of ownership. Total cost of ownership is a problem metric, the reason that it's a problem is you can cut costs by cutting training, which means you get less value. You can also cut costs by operating more efficiently, which increases value. So, if TCO goes down, you have no idea if the situation is improved or gotten worse.

Tim O'Bryan: And calibrate? No matter who takes the measure, they get the same result.

Bob Lewis: Yep. I think that's self-explanatory. That's, if you take a measure and I take a measure and you measure it being 12" long, and I measure it being 8" long, we don't have a calibrated metric. If the measurements that you are taking depend on who is taking the metric, it's difficult.

Now, sometimes, by the way, there are limits to what you can do. I think the HR profession has gotten into serious trouble by making metrics too calibrated. Not all managers have exactly the same standards, for example, because we're all human.

And so, so two managers looking at the same employee might give you a very different evaluation.



At some point that (inaudible) just have to be OK. But the best metrics, no matter who takes the measure, you get the same result that's how you can rely on the data.

Tim O'Bryan: OK. And complete, you talked about this earlier? Complete with respect to what importance of the metrics improve, the real situation improves?

Bob Lewis: Yep. That's it. Since the reason to implement a system of metrics is to drive behavior. And as the metrics do, if you keep them to yourself, you're not going to have the opportunity to drive that behavior. People need to know about it.

Tim O'Bryan: ...than have them in a little black box in the corner...

Bob Lewis: Well, you can, it's just not a good idea.

Tim O'Bryan: (laughter) And lastly, current. Current because if they aren't in your metrics and your goals are no longer connected, or your metrics are no longer complete...

Bob Lewis: Yeah, this is a mistake a lot of companies make and especially with all the effort you go through to set up a quality system of metrics, the business changes. And, there's either a change in strategy or a change in focus, or you attack a new market segment, or release a new product, all through your strategy.

And if you don't change the underlying system of metrics, that everybody uses to recognize when a success has happened, you're going to have a serious case of organizational dysfunction because you'll be measuring the old business, not the new one.

So every time that there's a change in the business, you need to review your system of metrics to make sure you haven't invalidated or changed something that you're using now to define what success looks like.

Tim O'Bryan: OK. That makes good enough sense, and lastly, there's a section you call good metrics, step-by-step, and it starts with basically, you've got 8 things outlined. It starts with defining success.

Setting important goals. Making sure your goals are complete. Translating your goals into math. Setting targets, who you call, by the way the one an optional one.

I want to jump back to that in a minute. And then, determine how to collect the data. Certainly talked about that earlier too, and then fine-tune each metric and then lastly, communicate the result.

Some of these, we talked about in getting the metrics right, but others are new to the discussion. And maybe you could give kind of, your overview of this section, good metrics, step-by-step.

Bob Lewis:

Yeah. Actually, we walked through some of this before, so let me focus on that, on the fine tuning page. Because we talked about success, revenue cost and risk, goals, and the goals needing to be complete, because otherwise, something that's important to your business, you won't up getting. And the rest of that, then we talk about fine tuning.

In fine tuning, is where you'd fix that lawnmower factory we talked about at the beginning. So, if you start off with a metric, a defect rate. And it turns out that the defect rate is merging, it's not fairly distinguished between bad paint jobs and amputated legs. There's an easy way to fine-tune the metric. And that's to apply a waiting factor in this case. So, if we say every bad lawnmower blade counts for ten thousand paint jobs, now your employees, they are still going to try and game the metric, because that's what employees do. They move the measure.

Only now, they say, wow, if I fix only one lawnmower blade or prevent one, that's as good as taking care of 10,000 paint jobs. I know what I'm going to do, I'm going to go for the bad blades.

And now, you're taking care of what's important first. So fine-tuning the metric is really second-guessing all the possible ways that somebody can game the system so that the metric becomes inconsistent.

Remember, consistent means it always goes one way when it improves, and it always goes the other way when it deteriorates. Fine-tuning, really is the matter of making sure that the metric will be consistent.

And it is, how you avoid the so-called law of unintended consequences, which usually, by-the-way, means we didn't take the time to think through what they would be. They're not unanticipatable, we just didn't bother to anticipate them. So, this is the step where you avoid that.

Tim O'Bryan: And overall, Bob, any overall concluding remarks you want to make about bad metrics worse than no metrics?

Bob Lewis: Well, actually, that was going to be it! (laughs) Setting up quality metrics is a lot of work. It's not the sort of thing that you do lightly in an afternoon and then go off to the golf course, sad to say. (laughs) Which, by-the-way, is an entirely different system of metrics. Which system made my game look good?

I think Mark Twain once said, it's not what you don't know that gets you into trouble, it's what you do know that ain't so.

One of the challenges that you have when you head down the road of business metrics is you might be, if you don't do it well, substituting what you do know that ain't so for what you don't know.

So, the take home message on this is, be very, very careful before you decide to pursue this discipline of systematically running your business by the numbers. There are pitfalls every step of the way.

Now, by-the-way, if you don't do it, then you end up having to run your business far too much on impressions. So, there's a whole of reason to head down this path, and there's some alternatives. We haven't had the time to dig in to it. I'd encourage anybody to review the webcast.

There's an alternative, which is to take a more tactical approach. Which is to take a particular aspect of the business that you want to improve, focus on it, establish metrics recognizing that they aren't complete. But to then, stop measuring it once you are already on the right path. And then focus on something else. So that you approach this categorically in a set of short-term bursts instead of trying to run your business by a consistent set of numbers over and over again.

A lot depends on how stable the business is. A lot depends on the overall business culture, whether it lends itself to it.

Tim O'Bryan: OK, that's great, Bob. Appreciate your comment, and then Bob, alluded to we do have a webcast available which goes into more detail on bad metrics are worse than no metrics. Some of which, we've talked about today, but Bob certainly elaborates further in this webcast which can be found at [ibm.com/cognos/innovation-center/webinars4.html](http://ibm.com/cognos/innovation-center/webinars4.html) or just go to [ibm.com/cognos](http://ibm.com/cognos) and you should see banners there regarding the business intelligence strategy webcasts.

Bob Lewis, thank you for your time. I want to also remind everyone that Bob is the author of a couple of books around information technology. Around identifying the right key performance indicators for your organization. Around change management and project management.

One is a manifesto for 20<sup>th</sup> Century information technology, "Keep the Joint Running." A forthcoming book in the latter half of 2010 coming is "Bare Bones Change Management – What you Shouldn't Not Do." It contains seven components of business change management, change management plan.

Bob, thank you again, and thank you all for attending this installment of the best practices in action podcast series brought to you by the IBM Innovation Center for Business Analytics.