Ten Things Data Can Do For You in 2017 - 1/2
(aka Ten Things Power BI Can Do For You in 2017)

We Interrupt Our Regularly-Scheduled Program…

Rather than talking about HOW to do things with data, let's start the new year by spending some time on WHY we care about data investments in the first place.

"BORING," I hear you say, but au contraire! Even though most of your colleagues have accepted that data is the "trendy" thing, that doesn't mean they "get it." And if they don't get it, they won't support (or reward!) you properly.

My goal with this article, then, is to help you convince your *colleagues* that Power BI (and/or Power Pivot and Power Query) is worth the investment – a hundred times over, actually. Use this as ammunition.

So if you find yourself saying "hey Rob I already knew all of this," that's OK – I'm not talking to the data gene folks here. For once I'm tailoring these messages to the *other* 15 out of 16. (And hey, maybe even you data gene types will take some new ideas away from reading these.)

Principles Guiding this Article

Before diving in to the list itself, it's important to let you know where I'm coming from. Here are the principles that I'll be following as I go through said list:

1. **If you can't explain it simply, you don't understand it well enough yet.** I believe in that principle, firmly. So I'm deliberately going to keep things "Fisher-Price" – no jargon, no esoteric examples. Just elementary-school-level explanations and illustrations, because defanging complexity is the first step to defeating it.

2. **I'm assuming that your organization has the standard problems.** And this is actually a surprisingly safe assumption, because we've found, over the years, that while the *specifics* vary quite a bit, the fundamental issues are the same old stories, over and over again. Everyone tends to think "MY organization is uniquely dysfunctional," but nope – everyone is struggling with the same handful of problems – and those problems are precisely what inform this list.

3. **The ten benefits in this list are well within your organizations' reach.** You likely already have the right people. You don't need to hire (or become) rocket scientists. You just need a new toolset and a few tweaks to the workflows.

4. **The ten benefits are cumulative, not mutually exclusive.** As in, you can do more than one at a time, and reap massive value. Each one is a big deal on its own, but when you start piling them up, they actually *multiply* each others' value.

5. **All ten benefits are readily achievable with the Microsoft suite of tools.** In fact, it's our years spent applying those tools (Power Pivot, and more recently Power Query and Power BI that have *taught* us these benefits. I'm sure you can achieve some degree of these benefits with other tools too, but my personal experience is that the competitive tools are more nizzle than steak (and the MS tools vice versa).

OK, onwards to the list!

Benefit #1: Subdivide and Segment for Effective Action

You know those reports which tell you how things are going "overall?" The ones which give you ONE set of numbers to represent the entire business? The ones which lack filter and drilldown? Those are super common. We see them everywhere we go (heck, I even saw one *on vacation in Florida* last week). Well, they are LYING to you…
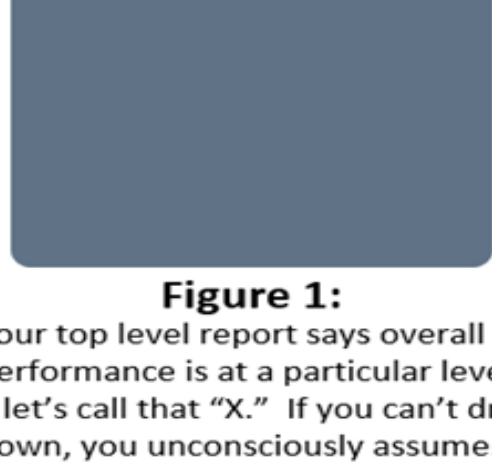

Figure 1:
Your top level report says overall performance is at a particular level – let's call that "X." If you can't drill down, you unconsciously assume…
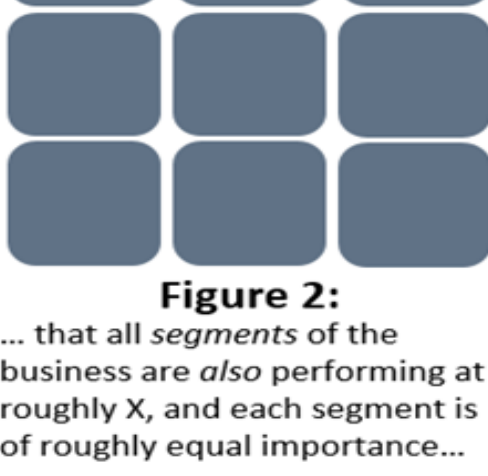
Figure 2:
… that all *segments* of the business are also performing at roughly X, and each segment is of roughly equal importance…
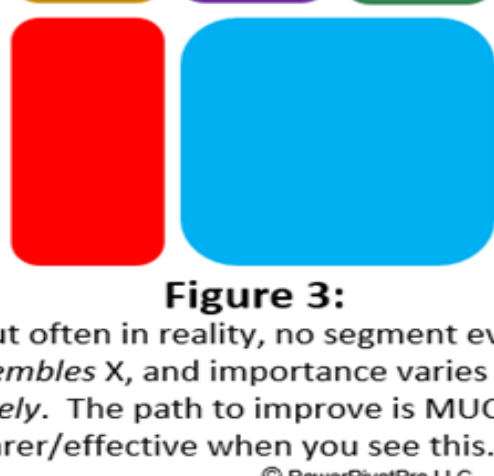
Figure 3:
…but often in reality, no segment even *resembles* X, and importance varies *widely*. The path to improve is MUCH clearer/effective when you subdivide.
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Do you know what Fig. 1 and Fig. 3 have in common? They both have the exact same average color! That's right, the color we call "X" in Fig 1 has an RGB of 96,114,134. And the average of the RGB's in figure 3 (weighted by their respective areas) is *also* 96,114,134!

Well the same thing happens in real life: the top-level average ALWAYS obscures critically-important variation under the surface. Whether we're talking about employees, locations, products, services, customers, website visitors … you name it. Even if some segments are performing precisely in-line with the overall average, there are other (and important!) segments which are divergent – and in both positive and negative directions.

Yes, the top-level average IS important! It tells you, after all, where the entire business is heading. Do we even have a problem, overall? Are we trending better or worse? Crucially important to know these things, of course!

But accurate and effective ACTION – aimed at *improvement* – REQUIRES you to drill down. Poorly-performing segments, for instance, are the most important to address – why spend time and effort "squeezing" corners of the business that aren't a problem, and which have less room for improvement? You may end up even demotivating top performers that way (if the segmentation corresponds to people, which it often does). No, you need to focus on the problem spots. And not all problem spots have the same problem – they may need a few *different* approaches.

As an aside, maybe drilling into the healthy places is a good way to discover HOW they are performing well in the first place! (And vice versa – you'll learn a lot from following up on the underperforming segments as well).

Here's a clearer way to say it: if you're trying to improve the numbers on the top-level report, and you're doing that without drilling down, you're on a fool's mission. Take a step back, breathe, and trust me: it's going to be ok. It's not hard to produce the subdivided picture, especially not with the Power BI / Power Pivot toolset. The time spent getting started is not "lost," but the time you're spending "squeezing" the whole biz… yes, that IS lost effort, so stop it.

Benefit #2: Get the Whole Picture in One Place (aka "Stop Drowning in Reports")
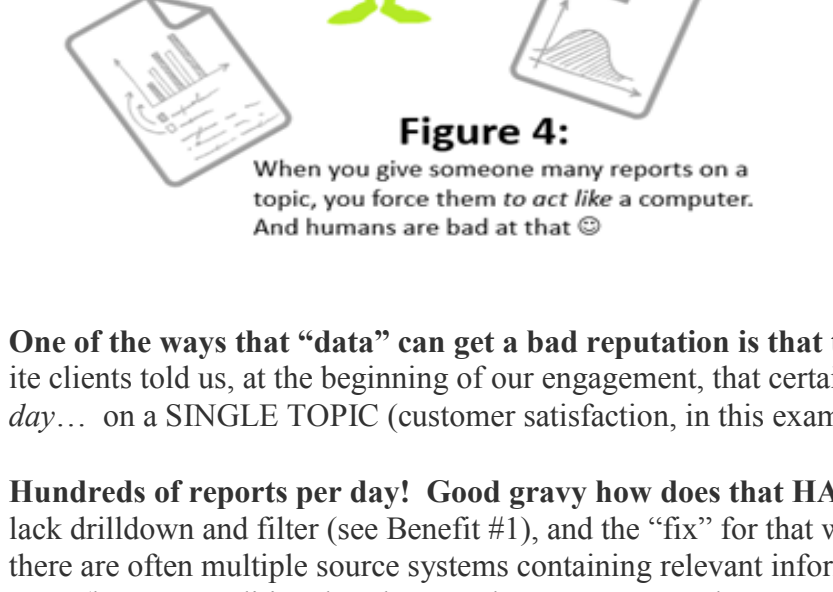

Figure 4:
When you give someone many reports on a topic, you force them to act *like* a computer. And humans are bad at that
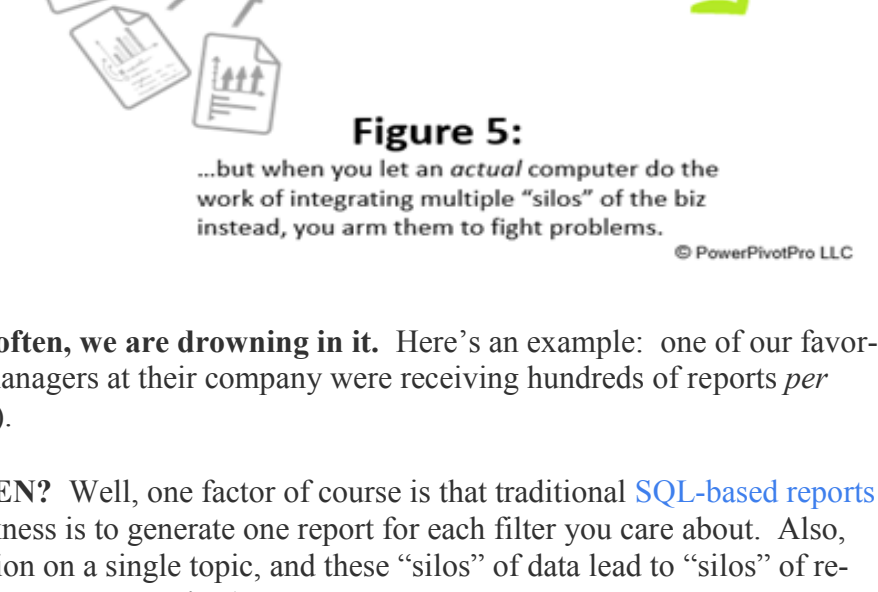
Figure 5:
…but when you let an *actual* computer do the work of integrating multiple "silos" of the biz instead, you arm them to fight problems.
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One of the ways that "data" can get a bad reputation is that too often, we are drowning in it. Here's an example: one of our favorite clients told us, at the beginning of our engagement, that certain managers at their company were receiving hundreds of reports *per day*… on a SINGLE TOPIC (customer satisfaction, in this example).

Hundreds of reports per day! Good grays how does that HAPPEN? Well, one factor of course is that traditional SQL-based reports lack drilldown and filter (see Benefit #1), and the "fix" for that weakness is to generate one report for each filter you care about. Also, there are often multiple source systems containing relevant information on a single topic, and these "silos" of data lead to "silos" of reports (because traditional tools struggle to "see" more than one source system at a time).

And it doesn't have to be hundreds of reports to be a problem. Frankly, even five is enough to overwhelm the human brain. We're just not built to be computers.

But when you put all of the relevant information in one place, you allow the human/business brain to work as designed (i.e. read, think, act) – as opposed to like a computer (read, remember, switch reports, read, remember…) And that's all the difference in the world.

The client in this example is now saving $25 million a year, and can prove it. Collectively, we unified the disparate silos of data into a single scorecard. And that's the difference between "no one has ANY IDEA how they're doing" and "everyone knows PRECISELY how they're doing, AND where/how they can improve."

Speaking of scorecards…

Benefit #3: Drive Org-Wide Behavior Change with Scorecards

Many problems/opportunities can ONLY be addressed by making *thousands of small behavior changes, on an ongoing basis, out in the "trenches." In other words, there are some which CANNOT be addressed by a small number of smart decisions made at the top of the org. Improved pricing behavior by the sales force for instance. Improved quality of service by field technicians, for another.
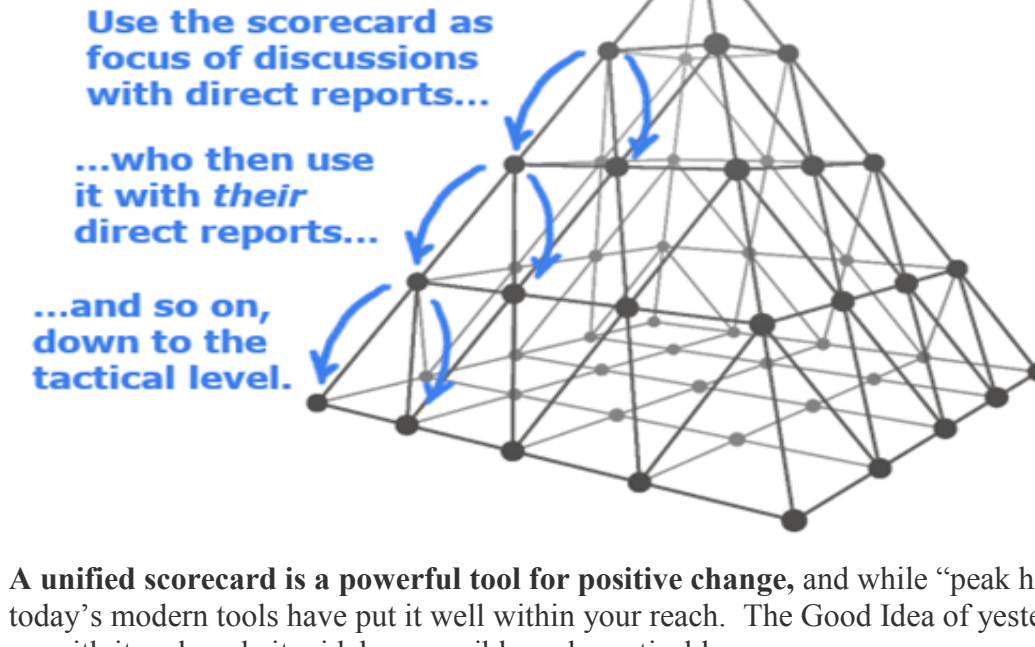

This level of the org understands what NEEDS to happen…

…but those changes need to HAPPEN here.

How do you make that happen? The way you influence a large number of people to behave differently on an ongoing basis, especially when they operate at a distance (both organizationally and physically) from you?

Fancy management consulting firms charge six-seven figures to do this, but with Power BI and/or Power Pivot, it's no longer necessary to make that outlay. We've seen organizations crack this nut with in-house resources, modest budgets, and short timelines – even though the impact is absolutely enterprise-wide. It takes some thought and iteration, for sure, but primarily, you "just" need to build a good scorecard.

A redacted/anonymized example of one of those scorecards appears below. We enjoyed working with this particular client immensely. Few things are more satisfying than helping people to solve an "unsolvable" problem, adding millions to the bottom line, and leaving their colleagues wondering "how exactly did they DO that??"

Performance Summary	Market Groups		TMP	MVP	Overrides and Others		
	Prior Yr Score $	Prior Yr Margin %	Prior Yr Score $	Prior Yr Score $	Prior YTD Score $	Prior YTD Margin %	Prior YTD Score per step $
Sales	654,423,029	25.06%	2,576,469	374,629,457	25.12%	2,560,955	
Item Sell	491,316,748	26.01%	1,934,318	283,066,710	26.01%	1,938,813	
Item Nofl	163,106,281	22.18%	642,151	91,562,748	22.16%	627,142	
NetProd Price	42,945,195	22.08%	169,534	57,406,872	19.10%	180,345	
NetProd Nofl	57,511,451	20.49%	226,423	32,497,252	20.23%	222,584	
NetProd Price	138,136,170	23.64%	535,969	79,702,870	25.56%	545,910	
NRC	465,249,225	24.76%	1,831,690	264,033,712	24.97%	1,808,450	
DOP	316,045,234	24.76%	1,244,273	183,460,107	24.26%	1,258,576	
GOP	338,377,795	25.89%	1,332,196	191,169,350	26.61%	1,309,376	
Private Brand	3,373,331	57.07%	13,281	1,777,424	57.92%	12,174	

	Prev Sonr $	Prev Sonr %	Current Sonr $	YTD vs PY YTD	Sales Per Invoice Line	Cost Line	GM % (Excl)
Sales	24	(27)	74	$341	$88	100.00%
Item Sell	22	(27)	72	$335	$60	73.17%
Item Nofl	35	(36)	114	$358	$63	26.83%
NetProd Price	33	(54)	76	$267	$66	6.31%
NetProd Nofl	91	(12)	42	$270	$61	9.66%
NetProd Price	(38)	14	62	$454	$119	20.72%
NRC	46	(27)	88	$348	$89	71.53%
DOP	46	(42)	95	$329	$83	49.62%
GOP	47	(49)	107	$354	$94	50.38%
Private Brand	(210)	70	(203)	$85	$30	0.67%

Slicers allow you to drill down to any level/person in the org

Use the scorecard to focus of discussions with direct reports…

…who then use it with *their* direct reports…

…and so on, down to the tactical level.

And how does this work in practice? Each manager sits down with their direct reports, usually individually, and goes over the "target" metrics (the color-coded ones) and discuss action plans to turn the red and yellow ones green, while consulting the secondary (non-colored) metrics for a more complete picture. At higher levels of the org, those direct reports are managers *also*, and so they repeat this process on down the pyramid.

Notice the Subdivide and Segment theme here? That's no accident – I told you these ten things are cumulative in their value! And guess what? A good scorecard often *also* "channels" Benefit #2 (Get the Whole Picture in One Place). And here #2 more Benefits to come!

A unified scorecard is a powerful tool for positive change, and while "peak hype" for scorecards happened probably 10+ years ago, today's modern tools have put it well within your reach. The Good Idea of yesterday was in fact Good, but technology has finally caught up with it and made it widely accessible and practicable.

Benefit #4: Eliminate Confusion. Achieve One Version of the Truth.

Talking about unified scorecards transitions nicely into the next benefit: unifying ALL data-driven information, period. Central IT/BI can never, ever keep up with all the needs of the business, so the business is forced to produce their own reports. That in itself is not fundamentally a bad thing, but the fragmentation that follows? Not so great. Even the definition of supposedly-simple concepts like profitability end up drifting when implemented hundreds of individual times, and that's before we get into outright mistakes and/or deliberate deception.

"My spreadsheet can beat up your spreadsheet." You know this game? The one where each manager shows up to the meeting with a completely different spreadsheet, each of which is purported to measure the same set of metrics, but they all return different numbers for the same things? Then the meeting devolves into figuring out whose numbers are correct, rather than the original agenda.

With Power BI (and/or Power Pivot), that ability to generate single authoritative (and well-audited) models, and publish *them centrally*, is finally in the hands of the Business. Responsible behavior, efficiency, and everyone pulling in the same direction. Even IT should rejoice!

Benefit #5: Free Your Valuable Thinkers from "Spreadsheet Debt Service"

"For someone who is good at Excel, one of the worst things they can ever do for themselves is to create a spreadsheet that is truly useful." That's a joke I tell in my live classes, but it's based 100% in truth, because anything that's valuable to the team will require continuous maintenance – and the only way for its creator to escape that responsibility is literally to change jobs.

"Debt service" is a concept from the finance world, and loosely speaking it's the total cost of interest on all the loans you carry. There comes a critical level – for an organization or individual – at which the total cost of debt service becomes too high, as a % of total available income/revenue, and after that, the debtor falls into a death spiral, and they get crushed by their debt.

I think there's a very strong parallel in the world of spreadsheet-driven analysis and reporting, which is where the business world overwhelmingly lives to this day. The time spent pumping the latest data through Excel, into dashboards/workbooks, as well as making "small" modifications on behalf of their colleagues (cough cough, subdividing and segmenting, anyone?)… it piles up. And sooner than we'd like, an incredibly-valuable employee and teammate is now spending the majority of their time simply "servicing" their portfolio of spreadsheets!

If you manage one or more of these people, or otherwise depend on them for information, it can be quite confusing and frustrating – "why can't my people do any more new work?!" It even gets uncomfortable – because "poor Joe/Jane? can't I'm loatham what I actually going on in these spreadsheets, there's little chance of explaining it without sowing the seeds of doubt – is the Excel guru bad at their job? Have they become lazy? I've seen these perceptions seeping in around the edges many times. But trust me, your Excel gurus' pushback is legitimate – there truly IS a breaking point past which your skilled data people simply are "full," and cannot take on any significant new work.

Now to be clear, I'm talking about traditional Excel here, not "Modern Excel," because the latter benefits from the Power BI technologies of Power Pivot and Power Query. Auto-refresh can keep their reports/dashboards up to date with literally ZERO intervention. In fact, the organization will remain informed with the latest and greatest, even if "the creator" is on vacation. And we've already covered the Subdivide and Segment benefit, which means that data can update instantly produce new takes, and answer new questions, without re-inventing the wheel (which is what traditional Excel forces them to do).

Without hiring a single new person, you can MULTIPLY the work capacity of your data-driven thinkers and purveyors of information. It's like "getting them back" again – remember these days before they started saying no? Of course, the people you will "get back" are FAR more capable than even a team 4x the size as before, working with the old tools.

……. to be continued

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