

CONNECTING THE DOTS*A Leadership Perspective by Robert Dugan***The Data QC Companion**

Notes from the front lines | Connecting the Dots, Part Three

Where this came from

Over the past ten months I have been asking questions — of members, of technology providers, and of people building tools for our industries. What follows is a synthesis of what I heard from people on the front lines. It is not a framework I invented.

The companies I talked with are in very different places. Some have IT departments. Some have a designee who handles technology alongside three other jobs. Some have been working on this for years and are further along than I am. Some have not started.

That means this will be rudimentary for some of you and genuinely useful to others. For those further along — I would ask you to consider walking through it with your team anyway. Not because you will learn something new, but because the conversation it prompts may still be worth having. And if you find something here I have wrong, I would like to know.

There is no score and no right answer. Nothing here is submitted to CalCIMA, collected, or compared to any other company.

One frame before you start. Our industry already knows how to run a quality control program — we sample, we test, we document, and we catch out-of-spec material before it leaves the plant. Everything below is that same discipline applied to information instead of material. You already know how to do this.

Part One: Start With What You Have

Before any of the later conversations are useful, someone in your organization should be able to answer four questions. For many of the operations I asked about, nobody could answer all four — and that finding was often more valuable than the answers themselves.

1. What systems produce data in your operation?

Every operation underestimates this list. It is never just the ERP and the dispatch system. It is the scale software. The QC lab records. The maintenance log. Fuel tracking. The batch panel that generates a report nobody reads. The spreadsheet a safety manager built in 2019 that three departments now quietly depend on.

The chronicle does not need to be sophisticated. A single page listing every system that generates, stores, or reports information is enough to start. What matters is that it exists somewhere other than in four people's heads.

Worth asking: *Could any one person in this company produce that list today? If not, who would we have to put in a room to build it?*

2. Who owns each system/data output?

In a larger company, ownership sits with a department. In a forty-person operation it may be one person — and in some cases, nobody. The revealing answers are the edge cases: where two people each believe they own the same system, or where a system critical to daily operations has no owner at all.

Ownership here is not about technical administration or who has the password. It is about who is accountable for whether the information in that system is right.

Worth asking: *For each system on the list — who is accountable if the data in it is wrong?*

3. What is each system actually for?

This is the question that produced the longest pauses in my conversations. Most systems were purchased to solve a specific problem, often a decade ago, sometimes by someone no longer with the company. Over time they accumulate other uses. Can someone state clearly and concisely what each system is supposed to do — and contrast that with what it currently does.

That gap matters, because a system without a clearly defined purpose cannot be evaluated. You cannot say whether it is working, whether it should be replaced, or whether a new tool would do the job better.

Worth asking: *If three people in a company described the purpose of their dispatch system, would you get the same answer?*

4. What outcomes do you need — and which systems have to work together to produce them?

This is the one that seems matters most looking forward, and it inverts how most technology conversations begin.

The usual question is "should these two systems be integrated?" That is a technology question, and it rarely produces a clear answer. The better question is: what do you need to know, and which systems hold the pieces?

As a hypothetical - take a specific outcome — true delivered cost per ton of material by job. Producing that number requires dispatch for loads and miles, payroll for driver hours, the plant for production cost, fuel for consumption, and accounting for allocation. Five systems. If they are separate systems, and they do not connect, you do not have that number. You have an estimate assembled by hand, and it arrives late.

Define the outcome first and the required connections become obvious — and so does the priority order. Just as importantly, systems that are not connected and do not need to be can stay exactly as they are. Not every disconnect is a problem worth solving.

Worth asking: Name the three numbers you most need and cannot get quickly today. Which systems hold the pieces — and what is standing between you and the answer?

Part Two: Five Conversations

With the chronicle in hand, these five came up in nearly every discussion I had. They are diagnostic, not prescriptive — the point is what the answers reveal, not the answers themselves.

1. Where does the truth live?

Most operations have a customer list. Many have three. The same is true for product lists, pricing, job numbers, and specifications — not because anyone did anything wrong, but because systems were added over twenty years and no one ever declared which one was **the source** of truth. The cost shows up later, when two systems disagree and nobody can say which one is right.

Worth asking: If two systems disagree about a customer, a price, or a job number — which one wins? Would everyone in the room give the same answer?

2. Who is doing work our systems should be doing?

Somewhere in every operation, a capable person spends part of every day moving information from one place to another. Re-keying tickets. Rebuilding reports. Reconciling what dispatch says against what the plant says. That is payroll spent on transcription instead of judgment — and it is usually invisible on any report you look at.

Worth asking: Name the three people who spend the most time moving information between systems. What would they do instead if they got those hours back?

3. What happens when the bridge retires?

When systems don't connect, people connect them. Usually the same people. Usually people who have been there a long time and know where the exceptions live — which face to work in wet weather, how this aggregate behaves in a cold pour, which customers need a call before a schedule change. That knowledge is real, valuable, and almost entirely undocumented.

Worth asking: If your longest-tenured operations person retired next month, what would stop working — and how long would it take you to find out?

4. Would three departments give the same number?

Ask production, dispatch, and accounting for last month's tonnage. If the answers differ, that is not an accounting problem. It is a signal that people have built their own records because they don't fully trust the official one. Once shadow spreadsheets exist, the official system is no longer the system — it is just one more opinion.

Worth asking: Where do shadow spreadsheets exist in your company, and what does their existence tell us?

5. Would we trust the answer?

If you turned on a new technology/AI tool tomorrow and it gave you a recommendation on production scheduling, pricing, or maintenance — would you act on it? For most operations right now the honest

answer is no. The question worth asking is why, because the reason usually has nothing to do with the technology.

Worth asking: *Is that because we don't trust the technology — or because we don't trust what it would be reading — or because we don't trust its ability to interpret what it is reading?*

Part Three: Getting a Useful Answer

The second thing I heard consistently — particularly from members already using these tools — is that the difference between a useless answer and a genuinely valuable one has almost nothing to do with the technology. It has to do with how the question is framed. Four things came up repeatedly. None of them are technical, and all four are things an Executive can apply immediately.

One. Define the disconnect precisely.

Vague in, vague out. "How can AI help my business" produces a brochure. "Our dispatch system and our payroll system don't share job numbers, so someone re-keys about two hundred tickets a week" produces something you can act on.

The precision of the problem statement determines the precision of the answer. And here is the part worth noting: if you cannot state the disconnect in one clear sentence, that is the first piece of work — and it is work worth doing whether or not you ever touch an AI tool. Most of the value in this exercise happens before the technology is involved.

Two. Say what you want to walk away with.

Are you looking for options, a recommendation, a list of questions to ask a vendor, a draft of something, or an explanation you can take to your board? Say so explicitly. "Compare dispatch software" and "give me five questions I should ask a dispatch software vendor about how their system handles integration" are different requests, and they produce dramatically different results.

The clearer the outcome you name, the better the output. This is the single easiest improvement most people can make and the one most often skipped.

Three. Tell it who you want it to be.

This is the one that surprised me most, and it is the one I had not heard anywhere before a member walked me through it. These tools respond to role assignment.

Asking a general question produces a general answer. Asking the same question of "a twenty-five year paving estimator" produces different expertise, different vocabulary, different assumptions, and a different tone entirely. "A compliance officer who has filed certified payroll in California for a decade." "A plant manager who has taken a batch plant through three ERP conversions." "A CFO evaluating a capital expenditure in a thin-margin business."

The role sharpens both the substance and the judgment. It is the difference between asking a question of the internet and asking it of someone who has done the job.

Four. Decide in advance what you are willing to put in.

Before anyone in your organization starts using new tools, settle one question: what information is acceptable to enter, and what is not. A utility executive I spoke with uses a three-tier rule that is simple

enough to adopt in an afternoon — public information is fine anywhere, internal information goes only into approved tools, and confidential information never goes in at all.

Customer pricing. Employee records. Legal strategy. Bid numbers. Whatever your list is, make it before someone is curious on a Tuesday afternoon rather than after.

What this looks like in practice

Instead of this	Try this
<i>How can AI help our company?</i>	We run four ready-mix plants. Our dispatch system and our certified payroll system don't share job numbers, so an administrator re-keys roughly 200 delivery tickets a week. Acting as a compliance officer who has managed California certified payroll for a decade, give me five questions I should ask a software vendor about whether their system could close that gap.
<i>What software should we buy?</i>	Acting as a CFO in a thin-margin materials business, walk me through how to evaluate whether we should fix our existing systems or replace them — and what I should be able to answer before I take a recommendation to my board.
<i>Tell me about AI in aggregates.</i>	Acting as a twenty-five year quarry superintendent, what would you want documented from a retiring plant operator before their last day — and what is usually forgotten?

Part Four: The One Thing

If any of this landed and you want a first step that costs nothing — no purchase, no vendor, no consultant — here it is.

Pick one place where two systems don't talk to each other. Just one. Ask the person who bridges that gap how many hours a week they spend doing it. Multiply by fifty. Then multiply by a fully loaded hourly rate.

That number is your starting point. In most operations it is considerably larger than anyone expects, and it makes this conversation real for a management team in a way that no article or presentation ever will. You do not need a strategy to find it. You need one conversation and a calculator.

Most of the first stage of this work costs nothing but attention. Deciding which system is your source of truth. Agreeing on how job numbers get named. Writing down what your longest-tenured people know. None of that requires software. It requires decisions — and decisions are free.

Everyone I talked with who has been through this said a version of the same thing: the companies that buy software first and fix their data later spend more and get less.

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If this was useful, if it was too basic, or if you have already solved something here — I would like to hear it. The most valuable thing CalcIMA can offer on this subject is not what I have read. It is what members have actually learned.