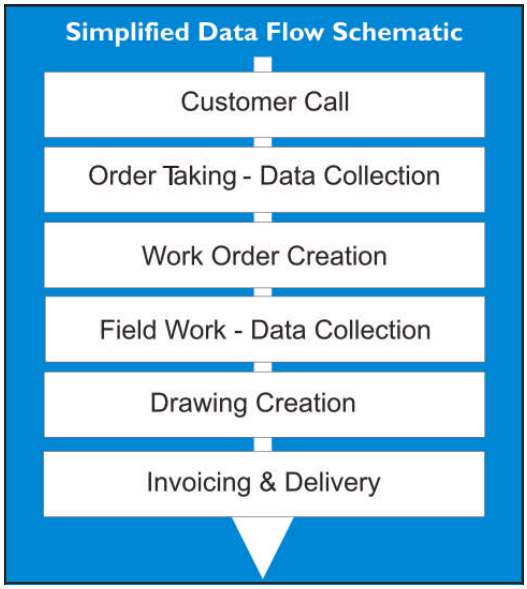
A Kaizen Approach to Data Management

Part One: Data is the lifeblood of your surveying concern, and kaizen is a useful tool for improving its management.

In this article I'll take a look at data management—organizing, storing, and protecting your data assets—using a process improvement tool known as kaizen.

First, a little bit about kaizen. A Japanese term, *kaizen* translates into English as "continuous improvement." To help you understand what kaizen is all about, I beg your indulgence as I tell the tale of my first introduction to the term and the concept behind it.

Let me set the stage: It is 1996 and I am working for a manufacturing organization in the Midwest. Their products are categorized as pressure relief devices and are a vital component in the safety systems in many industries, including the nuclear power industry. Quality is quite literally a matter of life and death. Due to a quality problem, one of our multi-million dollar customers had just rejected, again, a shipment of our products. This is the third time such a problem has occurred with this customer and we are on the verge of losing them. The president of our company goes ballistic and orders a major overhaul of our quality systems. The much-vaunted consulting firm Ernst & Young is summoned. Now I am sitting in an unprecedented, mandatory, company-wide meeting to learn what they could do to help us. We are told that improving product quality is a matter of improving the processes that go into the manufacture of our products. Improve our processes, and the quality of our products will naturally improve.



▲ **Figure 1** How data flows through a small survey shop

The speaker discusses methods of accomplishing said process improvement: "Western concepts," he explains, "are largely based on the concept of the *revolution*." The problem with revolutions, he explains, are at least two-fold: They are traumatic to a company's team members and they are disruptive to a company's workflow. Anyone who has lived through such a process can attest to the problems attendant with trying to change too much too fast. The presenter then introduces the concept of kaizen: continuous improvement. The idea is to take on the task of process improvement *incrementally*. It is an evolutionary, step-by-step approach as opposed to the Western revolutionary all-at-once concept. For example, if you can make just one small change a day, by the end of the year you will have 365 improvements. What's more, you won't traumatize your employees or disrupt the day-to-day activities necessary for maintaining your business (well, at least not *too much* anyway).

At this point two thoughts leap to my mind: What a great way to tackle the monumental task we have before us! And: Did he say "365 improvements in a year"? Does this mean we have to work weekends?

Here's the irony of the story. At the end of the nearly one-hour presentation that thoroughly expounded on the benefits of kaizen, the president of our company, an individual not known for his patience, stood up and announced, "This 'kaizen' approach sounds all well and good, but I want all of our incremental improvements right now!"

The speaker was well-trained and did not jump through a nearby window. However, I could see in my mind's eye him going back to his office and quietly closing the door. Now he is banging his head against his desk and screaming at the top of his lungs, "THEY JUST DON'T GET IT!!!"

But you get it don't you? As my sister is fond of saying, "Inch by inch, life's a cinch; yard by yard, life's too hard."

One final thought before I delve into kaizen and data management. The previous story illustrates only one important part of the kaizen concept: its incremental approach to process improvement. Another major hallmark of kaizen is the search for and removal of non-value added activities: activities that pose a cost to an organization but provide no actual value.

Kaizen Your Way to Better Data Management

To better understand the concept of data management improvement, let's look at the flow of data through a typical small land surveying company (**Figure 1**). A customer calls and places an order for a survey. The data necessary for completing the survey is captured in a work order and the job scheduled. The field crew takes the work order, goes into the field, and collects the data necessary for completing the job. Upon their return, they download the data points into a computer. The drafting

department then imports the data points into their CAD program to create a survey drawing. After review by a licensed surveyor, the drawing is plotted. The job is invoiced and mailed with copies of the drawing.

Now I'll show you how I used a kaizen approach to improve a few aspects of our data management in a small land surveying shop in eastern Colorado. Not all of these examples may be relevant to your situation; however, perhaps they will provide food for thought on your own data management challenges.

Kaizen your order-taking and work-order processes. Years ago when I first moved from the field to the office, I found opportunities for improvement in the process of order taking. First, I examined the existing procedures; there weren't any. So I asked my bosses, "What data should I be getting from the customer when taking an order?" There were two emphatic and almost simultaneous answers: "Enough to get paid!" and "Enough to do the job!"

So with these two organization objectives in mind, I set about creating a written procedure for anyone taking a survey order. Additionally, I looked at the work order itself. Heretofore all work orders were handwritten on a very basic hard-copy form that we copied as necessary on a day-to-day basis. Seeing another opportunity for kaizen, I developed a new, more comprehensive work order using MS Word (**Figure 2**). Further, this form was saved as a template and filled out on the PC whenever we needed a new work order. This satisfied the data requirements of the field crew, i.e. getting them all the necessary information on what job to do where and how. It also satisfied the data requirements for accounting, i.e. who is the financially responsible party. Finally, by making it digital, work orders were easier to create and to read (not everyone's handwriting is perfect, especially mine).

Work Order
Acme Surveying, LLC

Due Date	5-27-05	Job #	**05002**
Customer	John Smith	Date	5-23-05
		Phone	555-555-5555
Contact	Same	Fax	555-555-5555
Billing Info	PO Box 5555	Cell	555-555-5555
Street		City	Funkytown
State	CO	Zip	55555

☐	Improvement Loc. Cert	☐	ISP
☐	LSP	☒	Foundation
☐	Topo	☐	Site Plan
☐	Boundary	☐	Sketch
☐	Legal Description	☐	Subdivision Plat
☐	House Stakeout	☐	Points On Line (POL)
☐	Other		

Legal description	Lot 3, Gold Creek Estates, first Amendment	Bucolic County
Job Address	2552 Something Drive	Funkytown
Other info	Gate code: 1-7-9 (Turn right past twice-then-Left-Right)	Send 1 copy of survey to BC Building Dept. w/ Permit # 05-0321 written in top right hand corner in RED
	Cost	$350

▲ **Figure 2** Improved MS Word-based work order

Kaizen your file nomenclature. Another opportunity for improvement was our inconsistent approach to naming files. While we had a system for naming our files, it wasn't well thought-out and certainly not consistently implemented. Basically our system consisted of a spiral bound log book where we listed the jobs and issued job numbers. The nomenclature consisted of year-job#: 06-002 for example. Then when the job got to the drafting department the drafter would, based on his or her mood and/or possibly the phase of the moon, add a descriptor suffix: 06-002-LSP for example. On the other hand, also depending on the same aforementioned factors, no descriptor might be added at all. You'll pardon my sarcasm here but blaming them really isn't fair. For no one told them any different and, in the absence of formal written policy, common sense (or the lack of it) ruled. So we created a standard that looks something like this: 06-002-LSP-REV1. The "REV" was added to handle the numerous revisions some of our clients put us through.

Kaizen your file directories. Our file directories were in better shape. Data points were arranged in subdirectories by year in a directory clearly labeled "Points." The directory and subdirectories for CAD drawings were well-organized. We had to create file directories for our newly created digital work orders, job number logs (now digital), and a number of directories for our newly created archiving process. (We'll cover archiving in the next article.) Having your files in well-organized directories is mandatory for efficient file searches and data backup.

Next issue: In part two of this series, we'll look at kaizen approaches to file searches, data storage, data backup, database management, and archiving and imaging your files.

Jeff Salmon *helps his clients with land-use and a variety of general business issues, including marketing, in Elizabeth, Colorado.*