Harmon on BPM Paul Harmon

Blockchain & Business Process Management.

Personal Workflow Systems

As many readers know, I started working in process improvement quite awhile ago. When I started, process improvement was mostly focused on human performers and on how to improve their performance.   We relied a lot on research on human learning. When, we asked should you provide training, and what were the alternatives. Training is designed to provide people with knowledge or skills they currently lack. (Knowledge, for our purposes, is knowing facts, like the time to start work: eg. 8am. Skill is being able to execute a series of actions at an appropriate time, such as knowing when and how to start a specific type of application on a computer: eg. Run the accounting system to get a summary of the day's transactions.)

Learn studies reveal some key things to remember. People begin to forget almost as soon as they learn something. If you want to teach people things and want to assure that they remember them, you need to get them to practice the desired sequence until they can do it without fail, and then you need to provide continual practice to assure they remember it. One obvious corollary to this is that you should teach people things just before they will need the knowledge or skill. If you teach them things months in advance, all you assure is that they have lots of time to begin forgetting what you taught.

More important, learning studies convinced human performance analysts to avoid formal learning whenever possible, and the structure human performance with "job aids" whenever possible. As I am using the term, a **job aid** is a device that prompts human performance. For example, a list of items to buy at the grocery store is a kind of job aid. A catalog listing all of the items available and their specifications is another kind of job aid. When a performer uses a job aid, he or she simply looks up desired knowledge, or follows a set of steps to undertake actions.

Whenever possible, avoid training and rely on job aids. Training is expensive. And in many cases students learn and then forget before they are called upon to demonstrate what they learned. With a job aid, a performer can wait until its time to perform, then access the job aid and perform the task. If the task is infrequent, the student can put the job aid away, wait until the task comes up again, and then get out the job aid and execute the performance. A good job aid provides a kind of memory function that human memory can rarely duplicate.

Obviously a performer needs to know that job aid exists and, perhaps, needs to know something about when and how to use the specific job aid. Beyond that, we avoid memorization and focus on creating a good, easy to use job aid. The trick is to provide just the right training and then to rely on job aids for the rest.

Obviously a workflow diagram can serve as a kind of job aid – it provides a precise specification of a set of actions to be executed. Good workflow diagrams can even include branches that may be necessary and information about decisions that many need to be taken along the way.

Similarly, a computer is the ultimate job aid presentation device. In the Sixties, I might have said that a telephone directory was a kind of job aid – you use the book to look up a phone number for someone. Today, of course, you would go online and search for the person's phone number.

The availability of digital assistants of all kinds and smartphones provide computer formats that are ideal for simple job aids of all kinds.

Going beyond theory, anyone with a performance analyst's background will use job aids for their personal work. Many of us keep lists as memory aids. I recently moved to a new town. I created a simply map of my neighborhood so I could keep track of key locations, my new dentist's location, my favorite Indian restaurant, etc. Similarly, I acquired a checklist to the local birds to help me come up to speed on my new feathered neighbors. Another guide by my computer shows a map of my condo complex with names and phone numbers of my human neighbors.

This fall I discovered that iPhone iOS12 adds a workflow app to an Apple smartphone. The app is called **Shortcuts**. In essence the app, combined with Siri, lets me automate things I do with my phone. Apple has even created a library of specific applications that you can use or modify for your use, including:

- Home ETA
- Upload last photo
- Walk to coffee
- Make PDF
- Directions to event
- Log my weight

In all cases a series of iPhone actions have been sequenced and given a common name. You tell Siri: "Siri, Log my weight" and Siri does the rest. In this specific case Siri checks my smart scale and finds out what I weighed that morning. Then it opens MyFitnessPal, an app I use to track my weight and calories, and it enters my weight. It's all stuff that's easy enough to do, but each step used to take several "strokes" and now it all happens in response to one instruction to Siri.

If a job aid is a structured set of actions to follow, then Shortcuts is an automated job aid. It performs a set of actions in response to a single command.

I'm sure there are other apps, besides Shortcuts, that do things similar to what I have described, that I don't know about. We are going ever deeper into the digital world of automation and all struggling to keep up with its promise. In essence we are being given tools with which we can program ourselves, making ourselves more efficient.

I remember a dinner conversation, two decades ago, with a group of parents, who were also computer scientists. There was a debate as to whether kids should be allowed to use calculators for math. To my mind, most of the debate was about old history. Calculators were available and they were going to be used. The real question was what should the kids memorize versus what they would do with their

calculator-job aids. It's an important question. The humans using the calculators needed an overview – they needed a "theory" or "model" that allowed them to understand the nature of the mathematical operations they were using, and to decide when to use what specific operation. Beyond that, of course, they were going to use computers to undertake the drudgery of computation. It came back to the training vs job aids problem. What minimum should we make the performer memorize and what could we store in job aids to be used as needed. The balance between the two is more important than ever.

Increasingly, I suspect the race will go, not to the fastest, or the smartest, but to the one with just the right training and the best programed job aids.

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