

The One Best Way to Play Baseball

Many would argue that modern Business Process Management really got its start with the work of Fredrick Taylor in the early years of the Twentieth Century. I read an article about Taylor, recently, and was interested to learn that he dropped out of college and actually worked at several assembly jobs, rising to being a supervisor, and then gradually introducing his ideas about observing work, determining the “one best way” to do a job, and then introduced training and motivation to convince the workforce to shift to using his prescribed methods. Industrial Engineering was founded largely to promulgate Taylor’s ideas, and the Japanese engineers who created the Toyota Manufacturing System were students of Taylor’s work. Those involved in process work are well acquainted with the ideas involved: Watch the best performers, define the best sequence, get everyone to practice that work sequence, and then work on incrementally improving it.

I thought of Taylor as I read a wonderful article in a recent McKinsey Quarterly: “How the Houston Astros Are Winning Through Advanced Analytics,” an interview with Jeff Luhnow (The Astros general manager) by Aaron De Smet (a senior partner of McKinsey) and Allen Webb (the Editor in Chief of McKinsey Quarterly) (<https://www.mckinsey.com/business-functions/organization/our-insights/how-the-houston-astros-are-winning-through-advanced-analytics>) (For those not familiar with US sports teams, the Houston Astros is a baseball team based in Houston, Texas.)

Right off, one might think that playing baseball is a far cry from assembling a car, or machining a gear assembly. It’s a sport – it’s played by world-class baseball players who are hired because of their great, proven skills. Of course, we all know that baseball teams have coaches, and that individual players are sent to training camps and are not only given fitness training, but coached in each specific baseball activity. It’s not uncommon to see players sitting in front of video units, watching a slow motion playback of something they did as a coach points out exactly how they could have done it better. Baseball players, just like car assembly workers, seek to identify and perfect the best way of doing things. Detailed stats are kept on each player and his income and future depend on exactly how well he performs.

The McKinsey article describes how Coach Jeff Luhnow is using data and analytics (Artificial Intelligence or AI) to improve Astros performance. In effect, Luhnow uses analytics to identify patterns that lead to better results. One example considered in the article had to do with where the shortstop should stand. Apparently the analytics program determined that the shortstop was more successful more of the time if he was closer to third base.

Convincing the batter and the shortstop of that wasn't easy. Every time the pitcher threw a ball that got batted closer to second base and was missed by the shortstop who was now standing closer to third base, the pitcher and the shortstop were upset. It was easier to notice when the changes failed than to see when they succeeded. It took the coach a lot of work to convince the players that the data wasn't wrong, and that, in the long run, they'd make more points if they shifted. In fact, Luhnow said it took about four years and constant work to make the shift and get enough feedback from actual results to convince the players that the analytics program had analyzed the pattern correctly.

Luhnow goes on to talk of other problems being addressed by their new emphasis on data and analytics. He explained that a baseball organization is a lot of silos. That coaches, players, scouts, main team and farm team all constituted groups that didn't always cooperate and had different ideas of exactly what they were supposed to be doing (maximizing). Defining data-derived goals and convincing all of the different groups to work together to maximize the same goals proved a major challenge. As he mentioned in the context of getting everyone to agree where the shortstop was best positioned, it took about four years of constant pressure and constantly providing feedback to everyone so they came to realize that the analytic patterns identified by the software program were really useful.

Of course everyone realizes that baseball is a very dynamic process. If the shortstop is moved, for example, and the other team notices it (if they have their own data and analytics programs, for example) then they may change their batting coaching, and start to shift the pattern. Presumably the Astros own analytic program will notice any changing batting pattern and suggest moving the shortstop accordingly.

The article provides a fascinating glimpse into the intelligence and skill used in managing a baseball team – in defining and training players to generate the best ways to perform baseball processes.

More important, for most of us, it provides an idea of the power and flexibility of analytics – of using AI techniques to examine large amounts of data and identify subtle patterns that would otherwise be overlooked by human observers. It also underlines the way modern AI techniques have allowed analysts to gather data from video and other media and use that data to identify patterns.

Obviously gathering, reviewing, and analyzing massive amounts of data costs money. It's not a technique that one would use on a trivial problem. On the other hand, if the problem is key to the successful performance of your organization – as sales performance, or various kinds of skilled manual performance are, it might be worth considering how you could gather data and then analyze it. Taylor and the Toyota teams relied on watching workers perform tasks and often used stopwatches to define how long specific actions took. Videotapes, voice recordings and analytic software that mines the data for patterns is an updated approach for our time.

AUTHOR



Paul Harmon

Executive Editor and Founder, Business Process Trends In addition to his role as Executive Editor and Founder of Business Process Trends, Paul Harmon is Chief Consultant and Founder of BPTrends Associates, a professional services company providing educational and consulting services to managers interested in understanding and implementing business process change. Paul is a noted consultant, author and analyst concerned with applying new technologies to real-world business problems. He is the author of *Business Process Change: A Manager's Guide to Improving, Redesigning, and Automating Processes* (2003). He has previously co-authored *Developing E-business Systems and Architectures*(2001), *Understanding UML* (1998), and *Intelligent Software Systems Development* (1993). Mr. Harmon has served as a senior consultant and head of Cutter Consortium's Distributed Architecture practice. Between 1985 and 2000 Mr. Harmon wrote Cutter newsletters, including *Expert Systems Strategies*, *CASE Strategies*, and *Component Development Strategies*. Paul has worked on major process redesign projects with Bank of America, Wells Fargo, Security Pacific, Prudential, and Citibank, among others. He is a member of ISPI and a Certified Performance Technologist. Paul is a widely respected keynote speaker and has developed and delivered workshops and seminars on a wide variety of topics to conferences and major corporations through out the world. Paul lives in Las Vegas. Paul can be reached at pharmon@bptrends.com

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