

Tendency of operational routines to falter is widespread but fixable

May 30 2012

New research by a University of Illinois expert who studies process management points to the potential role of regulatory oversight in preventing deterioration of operational routines that are used to complete day-to-day tasks in business organizations.

Even in the face of managerial efforts to promote the sustainability of a system, the tendency of operational routines to move toward a state of higher "entropy" is an organizational reality, says Gopesh Anand, a professor of business administration.

"Maintaining [adherence](#) to operational routines poses widespread challenges in all kinds of businesses because people inevitably get complacent about following steps," he said. "Once that happens, the consistency of products erodes over time, which is why we need checks and balances to try and make sure that these routines are being followed."

In the study, Anand, along with co-authors John Gray, of Ohio State University, and Enno Siemsen, of the University of Minnesota, examines laxity in adherence to operational routines over time in the [pharmaceutical industry](#) by studying [longitudinal data](#) from the [Food and Drug Administration](#).

The research, which has implications for companies and regulatory authorities, determined that the drift toward higher entropy is pervasive, even in industries where product conformance is critical, and strict

regulations exist.

"One thing we as customers don't pay too much attention to in products is consistency," Anand said. "We don't consciously pay attention to it, but we're always expecting it. For example, when we buy pharmaceuticals, we automatically assume that what's inside the bottle is what's advertised on the box.

"When you look at regulated industries – airlines, pharmaceutical, anything to do with medicine – it becomes even more important to think of consistency because product quality is not really known to the customer. It's not visible, yet it's critically important to customers. On the other hand, most companies are constantly dealing with two goals for product quality – features and consistency. They have to come up with new features to sell their products, but also make sure that process standards for current products are followed with rigor. The two goals can counteract."

The research also indicates that regulatory oversight – or in the case of the pharmaceutical industry, FDA inspections – can act as a source of external renewal that tightens up processes.

"There's the sense that when you do things over and over again, you get better," Anand said. "So companies should, over time, be getting better at what they're doing, especially if they're doing it day-in and day-out. But that's not the case. You can't assume that there's going to be stability. You have to explicitly target stability in order to give consistent quality to customers.

"The FDA doesn't need to be in there every month, but we're saying companies themselves can do a better job of internal inspections and oversight."

The study also determined that the tendency toward high process entropy is exacerbated by organizational "shocks" such as mergers.

The researchers found that mergers appear to cause decay in adherence to routines.

"When you have a merger, there tends to be a lot of jostling going on, to lay down who's the boss, and how things are done," Anand said. "There are also a lot of distractions – people are in danger of losing jobs, there are product lines that need to be merged or eliminated. Such distractions could speed up the movement toward chaos."

By contrast, the research also points to the potential of being acquired by a healthier firm serving more as a renewal.

"In general, and in our data set, when there is an acquisition, it's that a weaker company is being bought by a healthier, larger one, presumably because they believe that their capabilities can improve the acquired company," Anand said. "The 'healthier' acquiring firms may have better corporate-level quality control systems than the companies they are acquiring, and this knowledge helps the weaker acquired firms improve. Hence the renewal effect."

The research was published in the journal *Organization Science*.

More information: The article, "Decay, Shock, and Renewal: Operational Routines and Process Entropy in the Pharmaceutical Industry," is available online.

Provided by University of Illinois at Urbana-Champaign

Citation: Tendency of operational routines to falter is widespread but fixable (2012, May 30)
retrieved 23 May 2024 from <https://phys.org/news/2012-05-tendency-routines-falter-widespread-fixable.html>

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