

The Discussion Forum provides a medium for airing your views on any issues related to the pharmaceutical industry and obtaining feedback and discussion on these views from others in the field. You can discuss issues that get you hot under the collar, practical problems at the bench, recently published literature, or just something bizarre or humorous that you wish to share. Publication of letters in this section is subject to editorial discretion and company-promotional letters will be rejected immediately. Furthermore, the views provided are those of the authors and are not intended to represent the views of the companies they work for. Moreover, these views do not reflect those of Elsevier, Drug Discovery Today or its editorial team. Please submit all letters to Rebecca Lawrence, News & Features Editor, Drug Discovery Today, e-mail: Rebecca.Lawrence@current-trends.com

The optimal fragmentation principle ▼

This December, I was a speaker in a symposium on Computational Toxicology at the National Library of Medicine (NIH, Bethesda MD, USA), presenting a glowing outlook on new advances with data mining tools for chemists and toxicologists. Ann Richard (EPA) quickly reminded me that, as nice as the tools were, the resulting predictive information 'would never reach the light of day' because they were designed for the pharmaceutical industry where proprietary interests would prevent access to the rest of the scientific community.

Of course, she was right, but rather than sulk on the flight back to San Francisco, I decided to read the *Wall Street Journal*, hoping to find that the rotting carcass of dot.commery was not contaminating the chemoinformatics and toxicology fields. Or better yet, the US Supreme Court had taken a break from deciding elections and ordered the release of all proprietary pharmaceutical information to selected *in silico* toxicology entrepreneurs from California.

But, alas, while reading *The Ideal Form of Organization* by Jared Diamond¹ the cold reality of Richard's comment gave me pause for gastrointestinal discomfort (there might have been a synergistic



effect when I turned over the chicken entrée finding it was not anatomically correct). Diamond was applying the *Optimal Fragmentation Principle* to a discussion of the demise of China's prominence in ocean shipping in the fifteenth century versus Europe's political fragmentation that stimulated 11 European countries to build ships and vie for colonial bounty – and the local monopolies (an example of isolationism) that have always hampered the Japanese food industry versus the openness (trade) of the Japanese steel, metal, automotive and electronics industries. Diamond concluded that a certain fragmentation with competition and open communication is the ideal model for business and government. It struck me that this is what Richard was also saying.

In order for the pharma industry as a whole, as well as the scientific community and healthcare in general, to make real headway in predicting potential toxicity from chemical structure, the industry must be willing to 'share' information. We have technology today that will enable this to happen. A centralized warehouse of information can be created where proprietary information can be encrypted and maintained secure. Large datasets of chemical information could be sorted through fragments without necessarily being able to reconstruct the chemical structures. The entire research community could use this encoded information in several *in silico* systems and it is possible that we could really start to reduce or eliminate major side effects of new drugs before they happen.

Is this possible? It will take innovative and forward thinking – more than just making an entrée look like an entrée.

Reference

- 1 Diamond, J. (2000) The ideal form of organization. *Wall Street Journal* 12 Dec, A26

Dale E. Johnson
Chief Scientific Officer
ddplatform LLC
Emeryville, CA, USA

More clinical input required for R&D decision-making? ▼

Tremendous technical advances in drug discovery technologies have taken place during the past few years. However, the number of new drugs is not increasing at the rate desired by the pharmaceutical companies and the drug development costs are still rising. A major contributing factor to the rising cost is the high attrition rate of drugs in development and failure in clinical trials. These factors are recognized by the industry but there is little discussion