(Re)-Designing Organisations in the Age of Algorithms

By Phanish Puranam , Roland Berger Chaired Professor of Strategy and Organisation Design at INSEAD

Strategy execution still requires organisation design and development skills. But here's what it may look like in a world of big data and AI.

The skills needed to be a top-tier organisation development and design expert have changed almost overnight. Until recently, the typical profile involved an education in one of the social sciences or humanities, a career trajectory anchored in the HR function and first-hand experience in several major organisational transformation projects. These are all still useful, of course. However, what's new and invaluable appears to be the ability to understand how big data and algorithms can be used to re-design organisations.

Organisation design has always been about creating a pattern of interactions among a group of members that help accomplish the organisation's goals. What has changed is the availability of fine-grained data about these interactions, and the computational power to analyse them. Consequently, we also need new ways to think about organisation design that link individual

actions and interactions to organisational outcomes.

My new book for researchers, **_The Microstructure of Organisations_**, outlines one such perspective that my collaborators, students and I have been working on for a decade now. But I want to focus here on the practical implications, and in particular on how we can make organisation development professionals more sophisticated about the use of algorithms.

Perception, prediction and prototyping

My collaborator **Julien Clément** and I have developed a simple "ladder of sophistication" to systematize our thinking about how algorithms can aid in organisation design.

The first and most basic step in deploying data is _perception_ – using and analysing existing data and algorithms to better understand how an organisation works. Simple descriptive statistics and hypothesis tests can illuminate the true nature of a problem, or bring to light problems you were unaware of.

Data can also fuel _prediction._ Applied to descriptive data sets, machine learning can produce best guesses about the future, such as which employees are likely to quit, the probable performance of a team and the likelihood of success for a given employee.

The third, most advanced step is also the most potentially valuable. Borrowing a concept from product development, organisation designers can engage in rapid _prototyping_, i.e. trying out bold, even radical configurations, and scaling up the successful ones where appropriate.

For example, companies often change seating arrangements to encourage (or discourage) certain types of interactions between employees. But uprooting people carries the risk of severing fruitful network ties. Will the change be worth it? Similar questions can arise about **Agile management practices**, skip-level reporting or crowdsourcing.

There are two main types of experiments we can use in prototyping. Ideally, we would use both in a two-pronged attack on the problem.

The least speculative but most expensive type is a field experiment, or randomised controlled trial. A cheaper version of this experiment could be conducted in a behavioural laboratory or under laboratory-like isolation from

the normal work environment (e.g. through gamification).

An alternative way to experiment is to build agent-based computational models based on actual organisational data. This allows designers to simulate proposed changes and gauge predicted consequences at relatively low cost.

What organisation designers need to know

Does adopting these new techniques require a deep knowledge of computational techniques and algorithms? Not really. But it does require what we call "functional understanding" – an understanding of what algorithms can and cannot do, as well as a general sense of how they do it. This, we have discovered, can be conveyed quite rapidly **even to those who have neither prior background nor knowledge**. One thing does seem very clear: To remain effective in the years to come, organisation design professionals will need to get up to speed with how to use algorithms.

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