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THE BEAUTY AND PERILS OF METRICS

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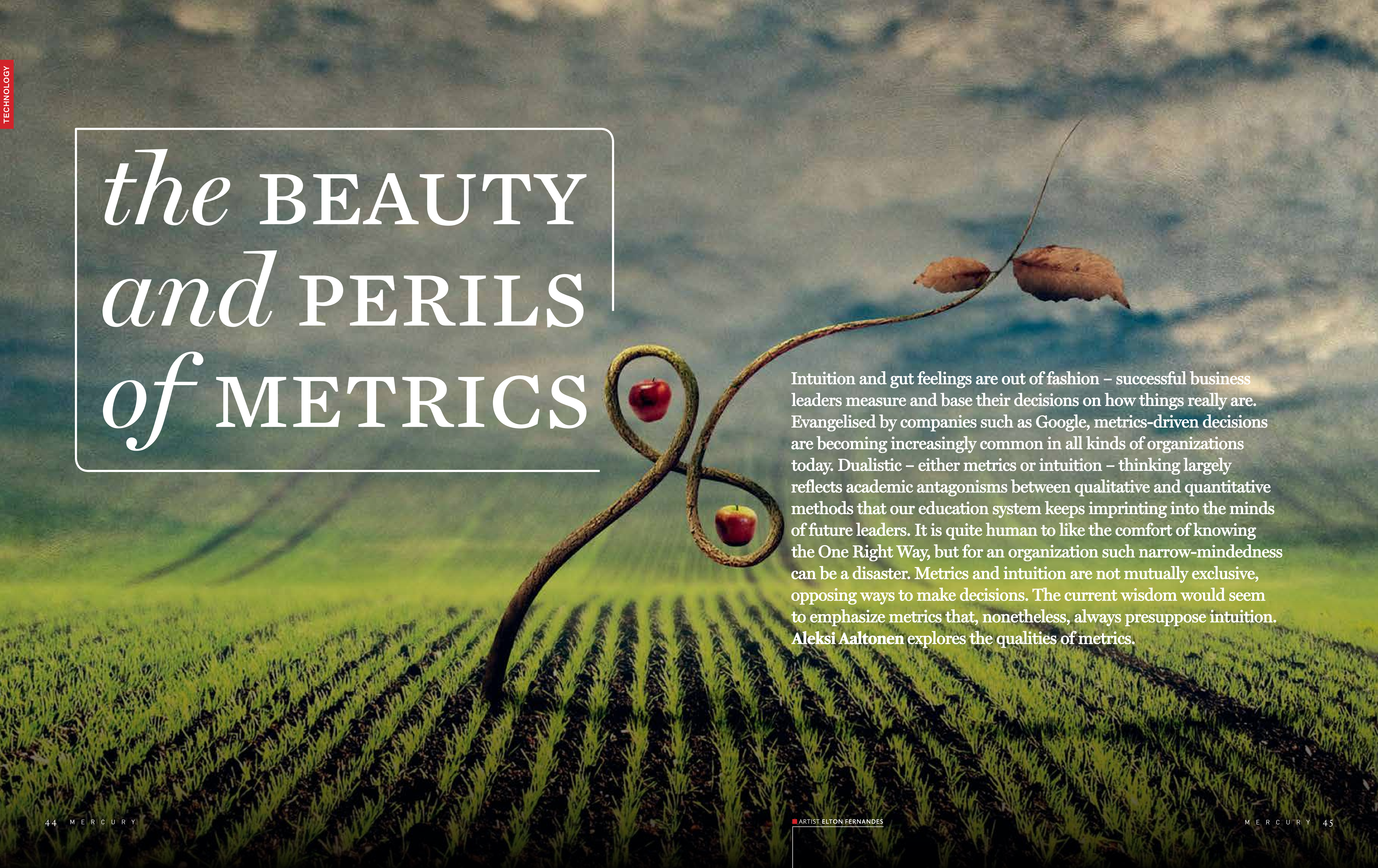

the BEAUTY *and* PERILS *of* METRICS

Intuition and gut feelings are out of fashion – successful business leaders measure and base their decisions on how things really are. Evangelised by companies such as Google, metrics-driven decisions are becoming increasingly common in all kinds of organizations today. Dualistic – either metrics or intuition – thinking largely reflects academic antagonisms between qualitative and quantitative methods that our education system keeps imprinting into the minds of future leaders. It is quite human to like the comfort of knowing the One Right Way, but for an organization such narrow-mindedness can be a disaster. Metrics and intuition are not mutually exclusive, opposing ways to make decisions. The current wisdom would seem to emphasize metrics that, nonetheless, always presuppose intuition. **Aleksi Aaltonen** explores the qualities of metrics.

ARTIST ELTON FERNANDES

Metrics, often in the form of Key Performance Indicators (KPIs), are necessary to run any large-scale organization today. It is nearly impossible to allocate resources efficiently or to motivate employees by performance-based remuneration without some sort of metrics-driven thinking. Understanding if the product offering is evolving in the right direction usually requires metrics. Metrics can offer real-time visibility into what is happening in the business, unparalleled in speed to other forms of reporting. The precision and feedback provided by metrics is increasingly important for small start-up companies with tight resources and little room for missteps. Indeed, acquiring and building relationships with online customers means groping in the dark without metrics that shed light on the business environment. There is no business without some sort of metrics.

Some metrics transcend individual organizations and may ultimately evolve into market-making devices. These are, for instance, industrial ratings that make goods and services produced by different companies commensurable, allowing new forms of economic exchange to emerge. Audience ratings make it possible to compare the price of consumer attention across different media outlets; consumer credit scores allow selling and buying subprime loans between financial institutions; the ranking of web content by search engines creates a market for search engine optimization consultants; university league tables shape the higher education market and institutions, etc. Such market-making metrics may have rather mundane origins inside an individual organization from where it gradually expands and becomes established as a vital infrastructure on which new kinds of economic exchanges take place. Market-making metrics exemplify an important aspect most powerful metrics, that is, they do not simply represent the world out there but they are heavily involved in shaping the business environment. For instance, local radio and niche magazines became economically viable only after technology and metrics was available to measure their audiences for advertisers.

What is a Metric?

A key prerequisite for a new metric is data. Is the data available somewhere or is there a cost-effective way to obtain it? Contemporary information and communication technologies can generate a massive amount of cheap data that would have been prohibitively expensive to collect before. This happens often simply as a by-product of people using IT artefacts. As more and more social and economic activity move into the online environment, also the domain of data that comes into existence expands. The digital network is truly revolutionary in this sense, for it often introduces a paradigm shift in how business operations relate with data. The problem shifts from how to obtain data to how to make sense of masses of data coming in from all directions.

Developing a new metric to support operations requires more than just the data. In fact, the more data you have the less informative it tends to become. There is significant potential in big amounts of data, but turning that potential into actual information relevant to business decisions at hand, is far from trivial. The more things we can represent by a number the less obvious it often becomes what should be measured. Today, more and more data is collected first, and only afterwards mined for purpose, whereas before, the data collection was expensive and usually executed with a specific purpose in mind.

Creating a new metric entails a semantic closure on data. This means establishing stable procedures for filtering and combining individual data items, and gaining the acceptance of those procedures by relevant stakeholders. While the actual readings produced by the metric must constantly change (otherwise the metric hardly informs about anything), the way data is combined must remain stable. This makes it possible to compare readings over time and across settings. Importantly, the way such stabilization is achieved is not in the data, but entails always intuition – hunches about what kinds of combinations might be interesting or useful. A metric is somebody's frozen intuition. The contemporary data deluge does nothing to change this, for the more combinatory opportunities there are, the more intuition it requires to pick out the relevant ones and ignore the vast amount of other ways to look at the data.

Innovating with Metrics

Creating a new metric is useful for making certain aspects of the organization, its environment or customers more visible. Once something is visible, it is possible to plan interventions and see how the object of interest changes. Sometimes the mere visibility is enough to change behavior, since people react to things they see about themselves. Make employees' performance visible in new way and they certainly react to what they see about themselves and their colleagues. Metrics can allow reacting faster and in a more direct manner to emerging issues, and curb biases introduced by information cascading through the layers of managers below as well as by the opinions from above. Yet, they are not objective measures of reality but frozen intuitions that have become taken as facts over time.

The recent years have seen the rise of big data and business analytics services that promise to turn the wealth of corporate data into useful information. In this sense, the development and provisioning of metrics is a rapidly growing business in itself. Whether many such companies will be able to provide long-term value to their clients remains to be seen. This is not because there would not be value in the big data, but going beyond fancy numbers and visualizations often requires an in-depth understanding of the particular business. There are low-hanging fruits that the new breed of big data companies can help their clients to pick, but once those have been depleted it may be difficult to sustain the business.

Finally, some adventurous companies can try to establish and remain in the control of a new market-making metric. This is extremely difficult and often happens over a long period of time. Nevertheless, the rewards can be significant for a company that establishes itself as the provider of a metric that others depend on in their business. Take for instance audience ratings, the currency in which advertising space is traded. The production of ratings for a particular media market is shaped by the available measurement technology, and usually monopolized by a single company; new opportunities for measuring consumer attention makes it possible for innovative actors to capitalize on new spaces for advertising.

The Perils – Metrics are Variables

The wealth of numbers and colorful visualizations turns easily into confusion. The first impression is often: what do all these readings mean? The lack of intuition in the development of metrics usually results in more variables being incorporated into reports and displays to increase the likelihood that at least some of them are relevant. This merely increases the confusion and cannot hide the fact that intuition is an indispensable guide that helps distinguish relevant metrics from mere variables.

Even relevant metrics are quantitative variables that break the lived reality into atomistic units such as advertisement impressions, repeat purchases, merchandise sales and so forth. This opens the door to mindlessly optimizing every individual aspect of business while losing the sight of the entire customer experience, which can be all but impossible to measure. You simply cannot squeeze the experience of driving a BMW or being a fan of Tottenham Hotspur into a single number.

Forgetting that metrics show only what the underlying variables define is the first step toward a competency trap, that is, churning out products that look optimal on a spreadsheet tailored for markets that are bound to disappear. Competence-destroying innovations cannot be seen through today's metrics because they are, by definition, outliers for any variable-driven model. There is no other way to radical innovation than intuition, gut feeling and improvisation which can cope with genuine uncertainty without trying to reduce it into a calculable risk.

Toward Intuitive Use of Metrics

My own academic work is based on qualitative methods, and in business and personal life – I am also a start-up entrepreneur – I believe that the best decisions are made intuitively. However, this often requires carefully studying the numbers and understanding what they can and cannot tell you. Many times I have found my intuitions simply wrong when I have been forced to look at the numbers. Metrics can be extremely intuitive!

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A good metric is often one that you can interact with, that is, take actions and see immediately how the readings change. This is because, instead of merely observing how the world is, we learn much more from observing the changes that result from our own actions. For instance, Google has perfected an environment in which advertisers can intuitively develop experiments and learn from the metrics how to best advertise their products. Such an activity is based on metrics but driven by intuition.

The message I try to convey is not new. This makes it even more surprising that lots of people are still, both in business and academia, trapped in dogmatic beliefs on the One Right Way to grasp the world. It may be that an individual is better off by perfecting his or her skills in, for instance, statistical modelling, but it does not follow that the entire organization should do so. Smart people can cultivate one type of activity while appreciating those who think differently. Yet, when it comes to making decisions that affect the whole organization and perhaps even our own wealth, we often feel uneasy to trust people who reason differently. ■

ABOUT THE AUTHOR
Aleksi Aaltonen holds a PhD in Information Systems from the London School of Economics (LSE) with twenty years of industrial experience in digital service innovation and information systems development. He is currently a researcher at Hanken School of Economics, Finland, and serves as the chairman of Demos Helsinki think tank. Scan the QR-code above with your smartphone to find out more about the author or contact him directly by sending an email to **aake@iki.fi**