Dashboards: From Performance Art to Decision Support

Interview with Neil Hoyne, Chief Measurement Strategist at Google

Dashboards are a common tool for managers to monitor a company's performance, and since the COVID-19 pandemic they have gained popularity among even broader audiences. But what is the real use of these dashboards? Is it just performance art or is it a tool that provides managers with the information they need? It may be slightly astonishing that Google employee Neil Hoyne is no fan of dashboards, but he believes they can be toxic when taken out of context. In this interview, he explains his skepticism of monitoring the same KPIs quarter after quarter and suggests different ways to make dashboards more strategically useful to companies. In his view, dashboards should inspire questions and curiosity, reflect market context and align toward specific business initiatives. He also suggests a more professional use of data and favors the scientific inquiry of the relationship between marketing measures and business outcomes.

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David Reibstein ✕ *Most companies use dashboards nowadays. Why are dashboards so popular?*

Neil Hoyne ✕ Companies create dashboards because they appreciate summary statistics about their data, but they fall short in explaining to managers what actions should be taken next. As a result, I see little application of those dashboards apart from simply being available.

So you have a negative reaction to dashboards in general?

The negative reaction to dashboards is a symptom of a much wider problem. Companies often try to distill their entire business down to several metrics that can be easily understood and evaluated. The metrics provide a strategic focus. Value, on the other hand, comes from identifying what

to do next, which is where these higher-level KPIs fall short. Performance may have declined in a specific region. Why? Is this related to our business? The macro environment? Dashboards tend to generate more questions than answers at this point and it's not as if those are in short supply already.

So you think dashboards need to change to be more useful? What needs to change?

A dashboard must have context. Benchmarks are one example. Your business is growing. How is the rest of the market doing? For instance, if we declined 5 %, we may be upset with that unless the rest of the market declined 10 %, or if we grew 10 % that might be great unless the rest of the market gained 20 %. You need to have an objective complement, more than your own expectations.

So you shouldn't just look at your sales numbers, but at market share and use a relative basis?

Yes, performance judgments should use a lens on how the rest of the market is doing versus the isolation of internal forecasts. Few companies can predict 12 months ahead in today's market conditions. Next you need to transform a dashboard into a living document.

So another requirement would be to enliven the dashboard, adapting it to changing requirements?

Exactly. We need to know what drives change. Beyond supplementing their dashboards with more market data, companies are considering KPIs together as a basket against larger strategies while being mindful of the trade-offs. If their advertising costs are increasing, but they see accelerating growth in market share, these trade-offs may be worthwhile even if they are outside of plan. Equally, an increasing focus on customer lifetime value and high-value customer acquisition may lead to a short-term drop in total customer acquisition – a net-positive for the firm if and only if they can move past seeing the latter metric in red.

What else is likely to change with dashboards?

Managers would be right to scrutinize the presentation of the data as well. Visual design of a dashboard is usually an afterthought. The size of certain KPIs relative to others may incorrectly convey their importance. The scale of charts and the lookback window for historical comparisons are often overlooked. Even the colors may focus the audience toward the wrong problem when the difference between a red (poor-performing) or green (over-performing) metric was just set at an arbitrary forecast.

Koen Pauwels ✕ ***How could driving factors, for instance if something goes wrong, be integrated into a dashboard?***

Instead of identifying a department and person in charge of defending their particular space and explaining what they did and intend to do when KPIs signal problems, more metrics could be auto-generated to give you an insight as to where things are falling apart. Figures should be broken down into areas that are well outside the average, explaining what is special and letting you uncover why they are performing differently. It would be a diagnostic tool similar to medical labs, where if something looks wrong with, say, your kidneys, they order additional lab tests.

← **NEIL HOYNE**

ABOUT NEIL HOYNE

Neil Hoyne is the Chief Strategist for Data & Measurement at Google and the bestselling author of *Converted: The Data-Driven Way to Win Customers' Hearts*.

Mr. Hoyne serves as a Senior Fellow in Artificial Intelligence at the Wharton School and on the Board of Trustees for Purdue University Global. He has received multiple patents for his work in marketing attribution and customer analytics, been published in notable outlets such as Harvard Business Review, and has keynoted hundreds of events in more than two dozen countries.
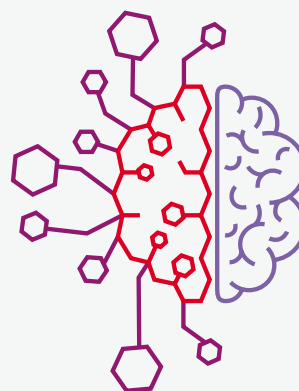
THE INTERVIEWER
The interview was conducted by David Reibstein and Koen Pauwels in December 2022.

I really like this approach: dive deep into the why. Today's dashboards typically don't have the ability to point out why something happened and then also take you to the next step of what you can do to improve, to move the needle. Have you seen any dashboards doing that?

Dashboards are part of a larger story. KPIs can be remarkably stubborn, limiting audiences to seeing the world through a very fixed view. There needs to be a counterbalance to ensure that new perspectives can be evaluated outside of the traditional planning window. This is where data science excels. Forming a hypothesis, collecting new data and KPIs, running experiments if necessary and forming a conclusion about whether it provides a more actionable view of the world. There is no reward for keeping steady KPIs in a constantly changing world.

A few years ago, real time was a hot topic and people wanted real-time reporting. Now, advertising people say they do not want real time because it just distracts, and weekly or daily reports are sufficient. What do you think about real-time dashboards?

I once worked with a company that wanted to make their website activities as salient to their C-suite as their physical stores. Their thought was to build a real-time dashboard that would show rapidly changing numbers, explosive dots as new sales came in across the country and a constant stream of interactions that followed every page click, shopping cart addition and checkout. This is performance art. Visually stunning but little value beyond awareness.

Let's talk about tech and your thoughts on voice assistants and AI. Instead of scrolling to a dashboard on your screen, wouldn't it be nice if you as a marketer could ask your question or hypothesis by voice and get a very nice answer back?

It would be if marketers were free to explore questions beyond KPIs. "What was my CPA last week?" "Are revenue numbers tracking above our forecasts?" These types of questions are all subject to the same faults as traditional dashboards: limited scope. I'd love to see more support for hypotheses and forward-looking predictions. "What might happen if we move 20 % of our marketing budget from this bucket to that bucket?" We'll get there.

> » *Performance judgments should use a lens on how the rest of the market is doing versus the isolation of internal forecasts.* «

So as yet, AI just generates what we have in traditional reports and does not add much value?

Managers rarely find themselves with an abundance of free time. They are overwhelmed by many, often conflicting, data sources and they are trying to untangle a picture. They need to meet – but ideally exceed – those KPIs. They need to manage a customer funnel, continually moving customers across an arbitrary funnel. Activities of curiosity toward the data and testing new ways of understanding the business are stubbornly deferred. AI can lighten the burden if managers can adopt the right mindset: to develop new hypotheses and invest in testing the AI-derived recommendations.

David Reibstein ✕ This is a very scientific approach you suggest. Are companies willing to act based on data science?

Companies are getting better but change is hard. They may start off with analyzing the decisions they are trying to make, studying the problem and the hypothesis they see. They invest in collecting more data, proving or disproving that hypothesis, but often fail to act. If I run a hundred tests for companies with, say, a hundred positive outcomes, meaning that if you make this change, then you will make more money, only about 60 % of those projects ever get implemented.

I am really struck by your hundred tests and only 60 % implemented. Why aren't the 40 % implemented? Is it because they don't trust the data? Or is it because outcomes are not consistent with their pre-hypothesis and so they are rejecting whatever the data say? What can you do to encourage companies to act on the data?

A large enough test is going to find something that the company can do differently. So you will have people in the organization who benefit from that change and others who will not. There is enough gray area in any experiment, in any

data set, for the "losers" to slow the organization. That's often what happens and why I generally look for an agreement on what to do with the results in advance. If I can't get agreement before the test is run, I'm not going to get it afterwards either. You need an agreement across teams, based on the possible range of outcomes on what they will do.

So to make better decisions you need to change not only the dashboards but the decision-making culture around data?

Yes, this all comes back to the organizational approach around data. What companies are not failing on is collecting data; they are failing when they discuss what to actually do with the results. They either let a product manager sell a measure or provide a lot of data and ask the boss what he or she wants to do. That's not rigorous at all. Therefore, companies are rethinking those processes, and this is really a challenge of organizational transformation at large.

Well, thanks, Neil, this was a very inspiring interview. I think we agree on what needs to be improved to make dashboards more relevant and actionable. You leave all of us – researchers, computer scientists, data scientists and managers – with lots of homework to do in order to create better dashboards and a data-driven culture for making better marketing decisions. ✕