

**W**HEN do you get your best ideas? You probably answer "At night," or "In the shower," or "Stuck in traffic". You get a flash of insight. Things come together in your mind. You connect the dots. You say to yourself, "Aha! I see what to do."

Modern brain science now reveals how these flashes of insight happen. It's a special form of intuition. We call it strategic intuition, because it gives you an idea for action – a strategy.

Flashes of insight are so important that scholars have written about them for centuries. The best description comes from an early classic of military strategy, *On War* by Carl von Clausewitz.

Von Clausewitz gives us four steps for how strategic intuition works. First, you take in "examples from history" throughout your life and put them on the shelves of your brain. Second comes "presence of mind", where you free your brain of all pre-conceptions about what problem you're solving and what solution might work. Third comes the flash of insight itself. In a flash, a new combination of examples from history fly off the shelves of your brain and combine. Fourth comes "resolution", where you not only say to yourself, "I see!", but also, "I'll do it!"

Von Clausewitz's second step, presence of mind, is a mental discipline that is very hard for many executives to do. You must stop thinking. But Asian traditions of martial arts teach presence of mind as a core skill, such as Yoga, ai-ki-do, kendo, and karate-do. And four classic works explain the discipline of presence of mind in Asian military strategy: the *Bhagavad Gita* in India, Sun Tzu's *Art of War* and Lao-Tze's *Tao te Ching* in China, and Miyamoto Musashi's *Book of Five Rings* in Japan.

In the Western world, companies typically use techniques that run directly counter to the basic truth about how presence of mind leads to flashes of insight. Three techniques are most popular: free time, creative stimulation, and brainstorming. All three make fatal mistakes about how creativity actually happens.

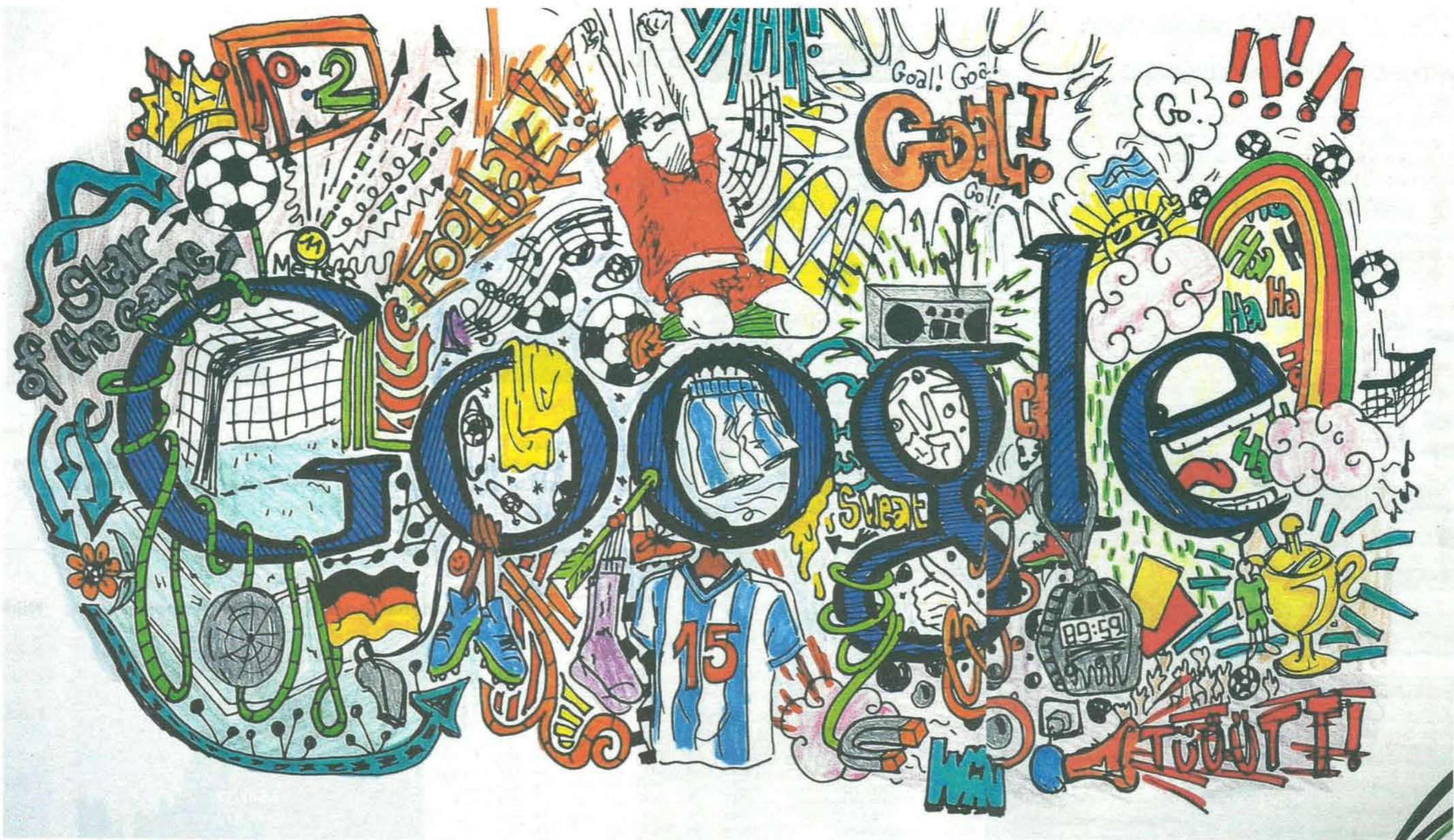
#### Good only in principle

Free time ranges from IBM, where everyone turns off their computer for a half hour, to 3M and Google, where you get to spend 10 to 20 per cent of your time on your own projects. Free time to just think – to stop working and relax – is good in principle. But the problem is, free time for my own projects simply means I work on something different, but gives me no guidance on how to work in a different way.

If I'm plugging away on Project K, without any creativity, what makes you think I'll be more creative if I plug away on Project L instead? The key question is, how can I get more flashes of insight, and take more advantage of them, whatever project I work on?

Creative stimulation is even worse. Creative stimulation ranges from beanbag chairs and dartboards throughout the office. Creative stimulation aims to turn the left side off and the right side on. But modern brain science no longer believes there are two sides of the brain that work in two different ways. Flashes of insight happen when real information stored in your brain come flying off the shelves in new combinations.

The right pieces on the right shelves is



BLOOMBERG

# Learn the successful strategy behind Google's birth

Forget creative stimulation and brainstorming. Brain science gives us techniques such as reverse brainstorming and the insight matrix. **By William Duggan**

analysis, and the automatic connection to new combinations is intuition. The best way to stimulate creativity is to first, put more things on the shelves of your brain, and then second, relax to let your brain make its own connections. For these two steps, none of the popular techniques of creative simulation are any help at all.

Brainstorming is by far the worst technique for creativity. The idea that you can schedule a flash of insight on a particular topic at a particular time on a particular day is completely misguided. What you find in reality is that someone says something that strikes you as interesting or important, and then while brushing your teeth the next morning, or the next week, or the next month, it connects with some-

thing else in your mind. The result is a flash of insight. That's the opposite method of scheduled brainstorming meetings.

So what is a manager to do? First, stop using techniques that work against presence of mind and flashes of insight as they set everyone off in completely the wrong direction for creativity to strike. Current brain science gives us three techniques to try instead: reverse brainstorming, sleep on it, and the insight matrix.

The insight matrix is the most important of all. It comes from GE in the late 1990s, when Jack Welch as CEO and Steve Kerr as chief learning officer made new combinations of previous elements the basic problem-solving method of the whole company. The insight matrix takes what

your brain does in flashes of insight and turns it into a step-by-step team method.

Here's how it works. At the top of the insight matrix you write down your current understanding of the situation. Then comes analysis: you list as rows what actions you think you might need to do to succeed in the situation. Then you ask the most important question: has anyone else in the world ever made progress on any piece of this puzzle? The sources to search go across the top, as columns. The team then searches for previous elements for the list of actions across the sources to find a good combination.

This matches how your brain works when you have a flash of insight. Your mind wanders from piece to piece of the

puzzle, searching all the shelves to find pieces that go together. The insight matrix turns it into a team exercise, and the shelves to look for pieces of the puzzle stretch across the whole world. The team stops when a combination strikes them as promising. It usually happens in pieces, as people come in with connections that struck them overnight or in weeks. You can't force it. But the insight matrix helps you try.

Let's look at an example to see how the four steps of strategic intuition apply in action. Let's take Google.

The three founders of Google are Rajeev Motwani, Larry Page and Sergey Brin. Page and Brin were Motwani's graduate students at Stanford University in California. Were they working on search? Not at all. Page and Brin were working on how to apply data mining algorithms from brick-and-mortar retail to e-commerce companies. They used AltaVista to search for companies to study. Page was on AltaVista one day and noticed something: on an AltaVista search page, you could type in a URL and find other sites that linked to that URL. In a flash of insight, that combined with something else on the shelves of his mind: academic citations.

As an academic, Page knew that academic journals and publishers kept track of how many times other people cite you during a year. They rank you according to the number of citations. Page thought of ranking websites the same way: many citations give a site a high rank. He told Brin, who adapted a data-mining algorithm to do it. And they both cloned AltaVista on

the Stanford computer system to try out their new method. When they opened their new software to all of Stanford, the users came back to tell them they had just invented the best search engine in history.

Their new search engine still had no way to make money. Then one day Page noticed a site called Overture. The site sold advertising and displayed the ads as search results as a nice clean list on the right-hand side of the page. Presence of mind and another flash of insight. He and Brin wrote a version of Overture and folded it into Google: from there, Google took over the world.

#### Strategic intuition

Here we see that the founders of Google had the presence of mind to combine existing elements and change their goal according to where the combination led them. The Google story is but one of countless examples of how strategic intuition works in practice.

But perhaps the most important idea from this brief account is this: strategic intuition turns even the most ordinary business problem into an adventure. When you cultivate presence of mind, you never know when flashes of insight might come to either you or your team. Stay open to them, and grab them when they strike.

**William Duggan is a professor at Columbia Business School, where he teaches strategic intuition in graduate and executive courses. He will be leading Strategic Intuition programme at Clariden Global Institution in October this year.**

The founders of Google had the presence of mind to combine existing elements and change their goal according to where the combination led them. The Google story is but one of countless examples of how strategic intuition works in practice.