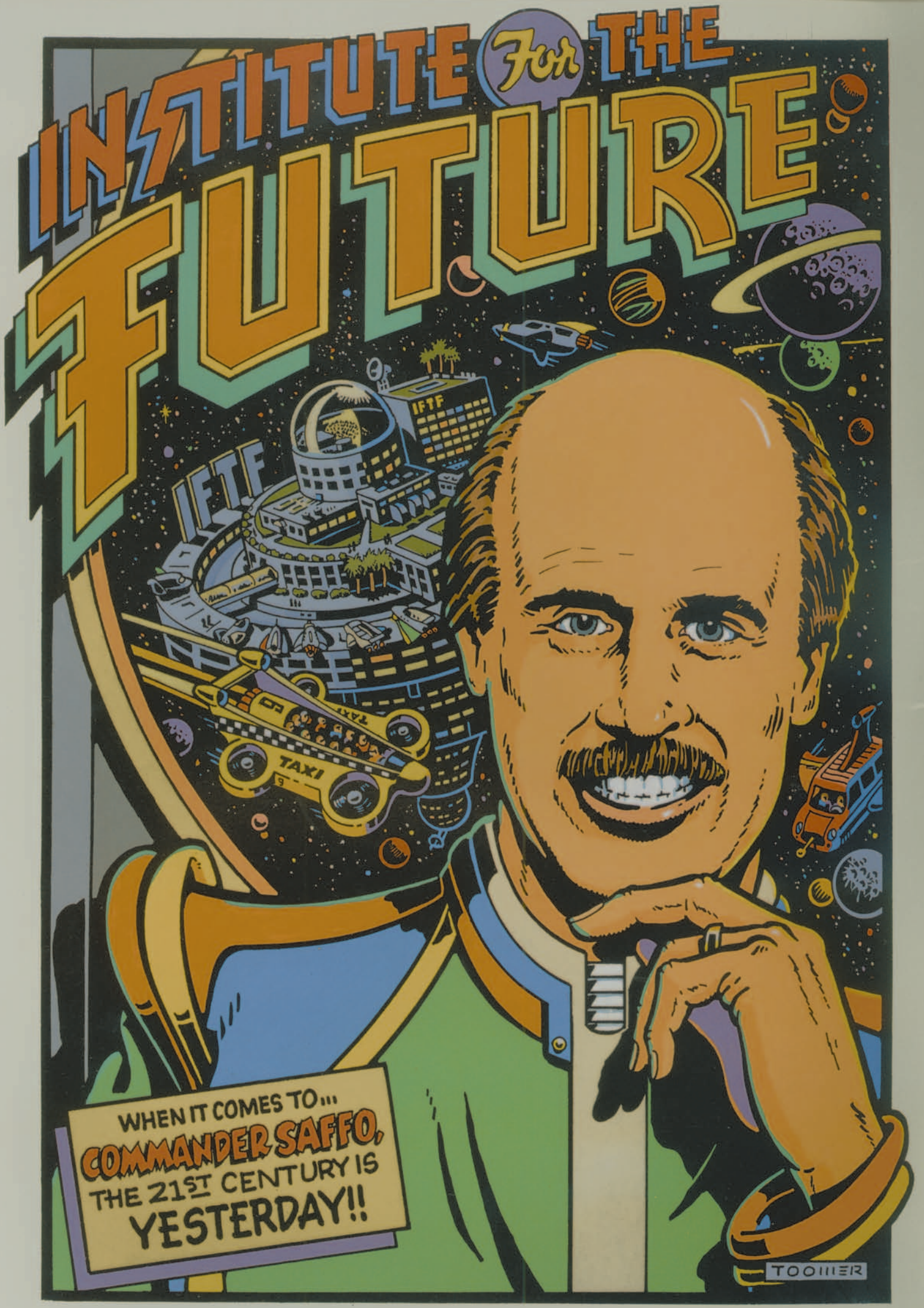
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Futurist Paul Saffo on Design

What will the future hold for business and design? Paul Saffo, director of the Institute for the Future in Silicon Valley, talks about the impact of new information technologies with Peter Lawrence, chairman of Corporate Design Foundation.

Paul Saffo is director of the Institute for the Future, a 30-year-old foundation that provides strategic planning and forecasting services to business and government. Renowned as a forecaster of long-term information technology trends and their impact on business and society, Saffo served in 1997 as a McKinsey Judge for the Harvard Business Review and was named one of the 100 "Global Leaders for Tomorrow" by the World Economic Forum. He is a member of the AT&T Technology Advisory Board and the World Economic Forum Global Issues Group.

In this increasingly digital and virtual world, is the design of physical things still important?

Absolutely. I think physical design is more important than ever because we are not just designing inanimate objects anymore. Computers, now in everything, are making objects interactive. That means that designers must design physical things that are seamless links to the electronic. They must think less in terms of designing an object and more in terms of designing a process.

Why is the shift from object to process important?

When objects were inanimate, you built an artifact that remained inert until someone picked it up and did something with it. Now we're beginning to see more devices with rudimentary intelligence and the ability to respond to the environment around them.

How is this a change from the desktop computer days?

It means that the age of interface is over. Interface as a concept made sense when computers just squatted on our desks and waited for us to do something. It made sense when we had two parallel worlds – the physical world of "reality" that we occupied, and the purely symbolic "cyberspace" world that computers occupied. We peered into cyberspace through the porthole of the computer screen. Computers, for the most part, had no idea that anything was on the other side of the screen. But now through a combination of sensors, bandwidth and everything else, we've blasted that screen away. Computers are invading physical space, moving ever deeper into our lives. That's why designers need to eliminate the word interface from their vocabulary and think in terms of interaction.

Define the difference between interface and interaction?

With interface, you can pretty much predict everything. It involves a limited number of formal, very stylized exchanges. With interaction, you must design for the unexpected. Computers no longer wait for us to do things; they're doing things on our behalf, and we may not even know that a computer exists inside. Interaction implies a deeper symbiotic relationship. That can have a down side, as we witnessed in the 1987 stock market crash, where program trading software – basically computers talking to other computers – were so busy talking to each other they didn't have time to let humans in on the conversation.

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Is interaction also about connecting the analog world with the digital world?

It's a big part of it. The reason computers are becoming so abundant is due in no small part to the sensor revolution. Carmakers are already adding microsensors to everything from emission systems to tire hubs, and microsensors are finding their way into other applications. We're basically hanging eyes, ears, and sensory organs on the computers, asking them to observe the physical world on our behalf and, not stopping there, we're asking them to manipulate it. The more you connect computers to the physical world, the more the issue of interaction becomes important.

How will supercomputing and sensor technology change the design of things?

They are giving us the ability to dematerialize things, put less stuff in our stuff. For instance, in the past, the way to change the performance on a car engine was by boring out the cylinders differently and building a lot of physical stuff. Now we can just swap in a new chip. What we're really doing here is making ever more efficient physical stuff – lighter, cheaper, faster, more effective.

What is obsolescence in a cyberspace world?

Everything is obsolete. That's one of the really dark sides to all this. The moment you put a computer into something, you accelerate its obsolescence. The obvious reason is that it's going to get replaced by better computers. But the subtler problem is that bits rot and software rots, it falls apart, it degrades and becomes unreliable. So you're going to see people having to replace perfectly good devices because the software part is aging too fast and becoming unreliable.

What role can designers play in responding to this?

Designers are keepers of the larger picture. In some ways, designers are the conscience of our artifacts, they look at things from an outside-in perspective. They can add dimensionality in a way that traditional engineers and computer scientists can't do because they're too close to their machines. I think that designers live on the edge of that point where artifact and the physical world interact. Their job is almost one of material alchemy, reconciling the object with the world and making the two coexist.

Is this view of designers widely shared?

No. Designers are the Rodney Dangerfields of the industrial age. "They don't get no respect." Occasionally, one or two famous designers are paraded out in front of the public, kind of like a trained seal, but then people don't understand what designers do. Designers still struggle for relevance. The good news is that the role of design is going to become steadily and ever more central to the future of what's going on here.

Does that mean designers are going to get more respect?

No, I think they're going to get less. I think the struggle is going to continue. It's a lot easier for computer scientists to pretend to know something about design, even though they're ignorant on the subject, than for

designers to pretend they know computer science. Computer scientists and engineers are going to end up driving the process. Hopefully, they will be willing to collaborate with designers.

What other responsibilities must a designer assume?

It used to be that designers made an object and walked away. Today the emphasis must shift to designing the entire life cycle. For instance, designers can make a plastic bag that's not just an object, but a process designed to photodegrade under sunlight. Some things you want to become part of the natural environment, other things you want to last forever. If you're merely thinking in terms of designing an object, you may or may not be giving people what they actually need.

Is technology affecting current aesthetic trends?

Inevitably, whenever things get faster, too technologi-

cal, they start out being very utilitarian and then swing to the baroque. In the '30s, toasters with streamlined fins were definitely baroque. The personal computer has gone from "you can have any color you want as long as it's putty" to the candy-colored iMac. Things always start out utilitarian and then get stylized.

I've noticed that you take notes on paper but use the latest technology.

Yes, I write in a paper journal, use a paper calendar, and carry a Palm Pilot V. But it's not a retro thing. There's a word that's leaking into our vocabulary: prostalgia. A nostalgia for things that don't yet exist. I think too many people suffer from prostalgia when it comes to computers and are not asking hard questions about what will really serve them. Some people use a Palm V for a calendar. If they are sharing their calendar with others and constantly changing dates, that's great. In my case, I absolutely value my Palm V as an address book, but not as a calendar. If someone wants to see me, they must contact me. I purposely make myself hard to schedule.

I use a journal for notes because I like to integrate graphics, images and text. For me, computers are not good enough yet for note taking. However, what I don't get from my notebook is pure searchability, but that's not enough to push me into electronics. That day will come eventually. That said, I still carry enough electronics – my Palm V, pager, cell phone and laptop – to get nervous in a lightning storm.

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Your tools let you take your office with you. Will offices as a physical place become obsolete?

No, I don't think that offices will disappear, just change. History shows us that the shape of our offices has been driven by the reality of information technology. For instance, the introduction of telephones allowed companies to separate their executive offices from their factories. While it decentralized the company, it centralized functions. White-collar workers became concentrated in Manhattan, and highrises were built to accommodate them. In the future, new concentrations of workers are likely to form. Places like Aspen, Colorado, may turn into a knowledge enclave for the very wealthy, and places like Santa Fe, New Mexico, may be favored by middle-class computer commuters.

How can business and design use technology to get closer to customers?

One way to reach them is through the World Wide Web. A company's website, in particular, is ground zero for collaborative design with customers. The Web is an extraordinarily plastic medium and lends itself to rapid consumer feedback.

Do old technologies die away?

More commonly I think they get reinvented. TV did not make radios and movies obsolete. It displaced radio from our living rooms as a central medium, but at the same time, radio co-evolved with the automobile and the suburbs into being the audio wallpaper for our cars. TV displaced movies as the main visual medium in our lives, but the movie industry responded by restructuring itself to deliver a more complex entertainment experience. The technologies didn't disappear; they were simply redefined to serve consumer needs in new ways.

Will people soon be working only in cyberspace?

People work best in teams when they trust each other. For that, you need face-to-face interaction. That's why more people are traveling in airplanes. If you don't want to fly, kill your computer. The more you communicate electronically, the more you're going to need face-to-face meetings. And once you meet face-to-face, you're going to continue the conversation electronically. It's a feedback loop; there is no substitute for face-to-face interaction.