

Designing for the Human/Technology Tension

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By Allison Arieff

The editors of 360 Magazine invited Allison Arieff, former editor-in-chief and founding senior editor of Dwell, content strategist for the urban planning and policy think tank SPUR and a contributing columnist for The New York Times, to visit our Global Headquarters and view new solutions designed to address the tension between humans and technology in the workplace.

I was invited to Steelcase earlier this year to preview some of the company's new innovative solutions and learn what they've been doing to address the changing nature of work. It's obvious how dizzyingly-fast technological changes have completely changed the ways we work. Today we're working with multiple devices that have changed not only our work styles, but even our postures. Smaller devices are causing us to seek larger-scale places to share our information. And as video capabilities are ubiquitous in our technologies, video is rapidly becoming a dominate form of communication. Today we even use technology to locate the people we need to work with. At one time many would have concluded that the ease and ubiquity of the cellphone pointed to a future where the office would be obsolete. If everything could be done in the palm of your hand, from anywhere at any time, why did you need an office at all?

Mobility is indeed ubiquitous but not in the way many thought it would be. People can—and do—work from anywhere but they still come to the office. Recently business leaders have been asking their people to spend more time at the office, recognizing the workplace is where real collaboration and innovation occur. But what the office has to do now is very different from before because people are not working the way they used to. Everything from the way they sit to the tools they use have changed. The workplace should no longer be based solely on—or designed around—rank and hierarchy. And at a time when business leaders are questioning how do you engage people and drive innovation, designing spaces as a destination where people want to be becomes more important than ever.

That was affirmed in my mind the minute I walked into Steelcase's WorkCafé in their global headquarters building. Formerly the company's cafeteria space, WorkCafé is an on-site third place that integrates working, dining and networking in a welcoming, inspiring and wired environment where employees can choose how and where they work. The space was bustling with people—all there for different reasons: to meet with others, socialize, grab some food or just work alone.

"This is what workers want and need," says Dave Lathrop, Steelcase's director of Research & Strategy. "People have been empowered to own much greater chunks of the decisions about their work life and this is having a whole raft of effects on the work experience."

The WorkCafé demonstrates how Steelcase continues to think about space differently to empower and engage people at work. They use a human-centered design approach that allows them to understand user behavior and explore, ideate and create the best solutions that help to amplify the performance of people, teams and the organizations they work for.

It seems obvious—design products with the intended user in mind—but just as form doesn't always follow function, too often products are designed without adequate regard for who will be using them and how. Instead—unfortunately—design often forces the user to change natural behaviors to use the product.

With human-centered design, it's all about the needs of the user. Steelcase works to understand people holistically in their natural environment. Their needs, wants and aspirations are a focus at all stages of Steelcase's design and development cycle. A passion for building things with intrinsic value is entrenched in the culture. Says Steelcase's anthropologist Donna Flynn, a leader in the WorkSpace Futures team, "Human-centered design is not just a methodology; it's a mindset. It's not just a single team that's focused on the user. It's pervasive across the organization."

Take technology. It's the leading driver of change in nearly all aspects of our lives and certainly in the ways in which we work today. To keep pace with that change and get out in front of it, Steelcase is not only looking at what people are doing today but what they'll be doing in the future. Says Flynn, "We're always trying to think about the 'far' horizon. The things around us change and those things drive change over time. But our core humanness doesn't change over time. So Steelcase looks at how technology is evolving, for example, the way people sit and move and the different postures we assume."

"We're all learning together. All of these things are unfolding in front of us—that drives our innovation," says Lathrop. "In the end, you have to design with the understanding of what people do in the fullest sense."

And that's exactly what Steelcase aims to do with everything it creates. The solutions Steelcase asked me to view have been designed to help organizations create destinations that will augment human interactions. Steelcase believes you can create these destinations by creating what they call an Interconnected Workplace: one that offers workers choice and control over where and how people work for both individual and team work; a range of settings that support various workstyles; a range of solutions that encourage movement and various postures; and environments that address the needs of both co-located and distributed teams.

GESTURE

Not so very long ago, ergonomists advocated for one primary posture in relation to a desktop computer. But nowadays our "computers" are not limited to the desktop. We have work power in our tablets and phones so that we are no longer tied to a monitor on a desk.

"What if we could design a chair that would encourage motion rather than forcing the body to hold a pose?"

It's not just our gadgets that are different: We look at our tablets and phones differently than when we look at the desk monitor and this introduces more working postures. The interfaces of the tablets and phones are smaller and the devices are typically held in our hands or laid on a surface. The devices allow us to separate ourselves from the desk and change position...but they've also dramatically changed the "correct" posture for working.

"What has not changed is the need for us to adopt healthy postures," explains ergonomist Carol Stuart-Buttle who has been involved in Steelcase's user research. "Providing an environment that gives the opportunity to be in a comfortable, supportive position helps make that a possibility."

So if we're not working the way we used to—our tasks are different, our technology radically transformed—what about our chairs? Until now, they've stayed pretty much the same. They may look better, they may even be more environmentally responsible but they're no longer designed for the way we work—and sit—today.

This is something I've certainly experienced. As a writer, I spend a lot of time in front of a computer screen and have increasingly felt the ill effects of sitting in the wrong chair. Finding an ideal ergonomic state is no easy undertaking—I am always wondering: is my computer monitor positioned correctly? Are my wrists properly supported as I type? Am I slouching?

I saw how my concerns could be addressed when I had the chance to experience Steelcase's Gesture, a new sitting experience designed to address the impact of new technologies on the human body and the physiology of work. Whether I was on the phone, texting, or typing or sitting up straight or (I'll admit it—I do it) slouching, the chair responded to the movement of my body. I was supported even when reclining. The chair is designed to put less stress on the body. I felt supported no matter what task I was doing. I got the sense that this chair was a system, just as my body is a system, both with parts that work in concert to achieve optimum effect. When I sat down and felt the lower back support I'd been lacking for decades in any number of "iconic" office chairs, my first thought was "why didn't anyone think of this before?"

Two-and-half years ago, Steelcase assessed the seating options it offered, says General Manager of Steelcase's Seating Group, Ken Tameling. "Our initial take had more of a bias that "the world does not need another chair," he explained. And so the company decided to commission a major posture study to help determine whether changes in work and technology necessitated a rethinking of the chair or not.



The human body—my human body—doesn't want to be in one posture all day, it wants to move—and should. We've all read the studies. Sitting for long periods is terrible for us, with adverse effects on everything from heart health to life expectancy. But what if a chair could counteract some of those negative affects?

Steelcase undertook a rigorous and wide-ranging Global Posture Study to answer this question. The study, like all Steelcase research projects, follows six key steps: to understand its users, observe their behavior, synthesize findings, realize ideas, prototype concepts, and finally, measure performance. The posture study acknowledged that technology is the single greatest force driving the changes in the way we work, live and behave. However, while technology continues to advance, no one has designed for the impact of these technologies on the human body, or for the physiology of how work happens today. This presented a tremendous opportunity for Steelcase: The sitting experience had changed with technology but the chair hadn't changed along with it.

One major finding of the posture study, which included 2,000 people in 11 countries around the globe, was that a wide range of postures were being used, fully nine of which had emerged as a result of newer technologies. Most surprising, and unsettling, says Tameling was that many of these postures, including the nine, had people in pain. People were not being supported appropriately in these postures—they were “making do”. The research affirmed that the world did in fact need another chair but one that was fundamentally rethought.

Observational and medical research showed an increase in the both very small and large people in the workforce. The diversity of body types seen in the workplace is occurring just as many companies seek to optimize their real estate, which typically means smaller individual workstations. So the question here became 'how can a seating solution work for a higher percentage of smaller as well as larger people in a smaller footprint?

Also revealed in user research were clear differences in postures by generation. Gen Y often used a deeper recline than the other generations, for example.

Accordingly, a new chair would need to support a deeper recline than had traditionally been done while also allowing the user to be engaged with their technology. “The body follows the eyes, so if the eyes look down at our devices, then the body hunches over,” explains Tameling. “We needed to determine how to best support this while allowing people to sit in a range of healthy postures—including the deep recline-without slouching or hunching.”

Finally, the posture study showed that people are using a wider range of spaces, and are in meetings longer than ever. The challenge was: how to create a new sitting experience that could work in a variety of spaces and be easily adjusted for the next user, who often would be very different physiologically from the previous user?

“The user research—in particular the results of the posture study—was the key driver for the creation of Gesture,” explains Tameling. “It led us to ask some key questions: ‘What if we could design a chair that would encourage motion rather than forcing the body to hold a pose? What if we could design a chair that augments our experience with technology rather than gets in the way of it? Simply put, why not create a chair as advanced as today’s technology?’”

For more information about Gesture, see the [Product Guide](#).

V.I.A. Vertical Intelligent Architecture



The workplace has become a real workhorse. It’s no longer just a place where people go to do their job. It’s constantly evolving, reacting and responding to its occupants. It’s getting denser. It is being used for more hours in the day by more people in increasingly differentiated ways. It can’t just be a place where work gets done, it must also optimize real estate; enhance collaboration; attract, engage and develop employees; build brand and culture; and support wellbeing

“What if a wall could be as flexible and dynamic as the work cultures it’s mean to support?”

That's a tall order, and many of the tools in the traditional workspace design arsenal may not be up to the task. Take perhaps the most seemingly mundane and often overlooked asset: the wall. What does a wall do? What is it for? It divides. It's often blank, often stubborn. And it's static. It's an integral part of any building but is it living up to its full potential? Steelcase wondered, What if a wall could do more? What if it could be as flexible and dynamic as the work cultures its meant to support? What if it could express brand identity while also providing acoustical privacy? As people collaborate more, what if walls become the new worksurface?

"The vertical plane is underutilized real estate in most offices," says Allan Smith. "Many people drive smart cars in which they can display content on a screen with only a gesture. Then they come to offices where the walls are dumb by comparison. Looking to the future we see much more intelligence integrated into the vertical plane."

Enter V.I.A. (Vertical Intelligent Architecture), which not only defines space but redefines the role vertical real estate plays in the workplace. "There is no product more essential to creating an interconnected workplace than V.I.A.," explains Brian McCourt, sales director, architectural products. "It helps to think about the workplace as an ecosystem, or a palette of places... which is simply a range of diverse spaces. These spaces serve different purposes, support different activities and provide different tools. The importance of the ecosystem is that it allows people to move freely from completely private spaces such as an enclave, to semi-private spaces such as a project team room, to completely open spaces like a WorkCafe. This freedom is necessary so people can work with right levels of privacy, access to technology, and proximity to others."

V.I.A. helps improve the quality of interactions because it offers true acoustical privacy, allowing people to work without disruption or worrying about disrupting others. Technology integrated into V.I.A. also augments interactions by making it easy for teams to move their information from personal devices up onto a large scale display, helping them to build a shared understanding of their content. V.I.A. provides a sense of permanence with the speed and design flexibility of a relocatable wall. Walls aren't going away—they're just being asked to do more things.

"Clearly what we are seeing is a shift in the way people will communicate, collaborate and use technology in the future," says McCourt. "In the future there will be three primary types of technology: this includes powerful handheld devices, cloud computing, and large scale architectural displays. Thanks to the efforts of companies such as Microsoft, Dow Corning, Oblong and Cisco we will have intelligent rooms that will self-configure themselves around people, technology and process."

"Imagine walking into a room which recognizes who you are by your mobile device, configures the room to your lighting and temperature preferences, pulls your information off the cloud (because that is where your data will reside in the future), and allows you to begin collaborating with others. By simply using an interface such as gesturing you will be able to display and control your information on the architecture. Now many of these technologies do exist today in one form or another... however, it's not too far in the distance when they all come together to create these intelligent rooms," says McCourt.

Technology-enabled architecture will be required to support intelligent rooms. In the future walls will not just define private offices... but rather define “private experiences”, explains McCourt. These experiences will be around videoconferencing, technology, collaboration and privacy. So clearly there will need to be a shift in the planning pendulum to provide more choice around levels of privacy for both teams and individuals in the future. In this rapidly evolving scenario, the vertical plane doesn’t just divide one space from another; it will now create new spaces and new surfaces. It will support data sharing, technology and furniture.

What’s most exciting about V.I.A. is not just what it can offer today but that it’s been created to anticipate future needs. Technology, as we all know, changes fast. This is a product designed to accept new technology as it evolves: “future-flexibility ” is built-in. Soon, gesture-recognition will be available, for example, and one can only imagine the myriad other possibilities on the horizon.

For more information about V.I.A., see the [Product Guide](#).

MEDIA:SCAPE, TEAMSTUDIO, KIOSK, VIRTUAL PUCK



We’ve entered an era of global enterprise. In a way, that’s nothing new—we’ve moved a dazzling array of things—from spices to textiles to oil—from one country to the next for centuries. That period of moving commodities expanded when the digitization of information facilitated international economic integration. Now we’re entering a new phase of global enterprise that has ventured beyond the moving of stuff and of capital. Today, it’s the social enterprise that’s becoming global.

“People in China collaborate with colleagues in the United States, in France. To be effective, companies now need to build not just their business but cross-cultural bonds,” explains Lathrop. “As a result, new issues emerge: how to deal with time zones, culture, language, innuendo and intent? Work is largely social, and new organizational patterns are starting to form. It’s not about moving money or data, it’s about forming new social structures and relationships so a company can behave as one integrated enterprise.”

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The media:scape family of solutions exemplifies Steelcase’s response to the need to be a globally integrated enterprise. “We believe that video conferencing will become one of the dominant forms of communication within the workplace,” says Lathrop. “It’s already happening.”

Competitive advantage has its roots in individuals—in particular making sure those individuals are connected. As companies expand their global reach they’re turning to video to enrich connections. In fact, companies are experiencing a 70 % increase each year in video traffic—an unimaginable statistic just a couple of years ago. And as many as 62 % of employees regularly work alongside people in different time zones and geographies. This is really changing the way people interact.

Steelcase’s media:scape with HDVC is uniquely positioned to facilitate collaboration between employees and help create the essential social and cultural bonds they need. After all, collaboration is about more than shared space—it’s about connections. The increasing use of video is facilitating better working relationships across time zones, latitudes and culture differences. While video may help to decrease the amount of travel necessary for employees, its even greater benefit is in how it aids in building relationships between them.

“Companies say ‘we’re investing in video so we can make decisions faster’,” says Steelcase’s Scott Sadler (who, mentions as an aside that he’s already been on video four times that day). As appealing as video is, it has presented particular challenges, creating reticence for some. Concerns about making the technology work or even worrying how they look on screen may be enough to distract people or even deter some from video conferencing at all. These obstacles had to be overcome.

“If we could make the experience more natural feeling, we could make people more productive,” explains Sadler.

At its core, media:scape allows distributed teams to instantly share and co-create content. A variety of well-considered features make this happen: The iconic PUCK™—an integral feature—allows several people to easily share their ideas, video and research as they work. This physical PUCK was also transformed into a virtual app that puts the user in control of not only content sharing, but also sound and lighting. The new additions to the media:scape family, TeamStudio and the Kiosk, have been designed to help people be focused on their work, not the tools.



media:scape has also been wildly successful in addressing “presence disparity.” That’s a terrific term for describing how most of us currently feel when beamed in for a group meeting from afar. “These solutions bring to the real (and virtual) table the things that make in-person meetings so valuable—an ability to read facial expressions, body language and other visual cues,” says Sadler. “We’re doing everything to make people more psychologically comfortable so they’re engaged in what they’re doing—not worrying about the details.”

For more information about media:scape TeamStudio, Kiosk and Virtual Puck, see the [Product Guide](#).

“The success of this room-scheduling technology was immediate apparent”

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