BlueSpace:

The Office of the Future Has a Mind of Its Own

by Gerald Levitch

Imagine an office that instantly responds to your arrival by adjusting its temperature, lighting and airflow to your preferred settings. It then unlocks sealed personal information folders on your computer, and with overhead lights, visibly announces your presence to your colleagues. Simultaneously, it alerts a "buddy list" of your team coworkers and signals through an exterior electronic message board if you are ready for visitors, your day's agenda and anything else you wish to announce to the world at large. And that's just BlueSpace's way of saying, "Hello."

BlueSpace is a unique joint research and development venture between Steelcase and IBM's Pervasive Computing Division. For the last two years, they've been exploring the potential for combining office furniture and microprocessors to create a new kind of intelligent workspace. "By combining IBM's technological expertise and Steelcase's knowledge of the workplace, we're able to embed computing into the physical office and create work environments that fit the needs of individuals," says Rod Adkins, general manager of IBM's Pervasive Computing Division.

"When you empower people to make choices that enhance their workstyle and work process, you open the door for increased effectiveness and a more satisfied worker." says Mark Greiner, vice president of the research department at Steelcase. Likewise, says Greiner, "not only is there the impact of new information technologies, but the nature of work itself is changing. We have to find new solutions that respond to those changes – ones that are not strictly furniture or design or architectural solutions, but hybrid solutions that themselves employ new technologies." It's a radical approach that, as far as Greiner knows, is unique to Steelcase and IBM.

For example, many employees who work long hours at their desks are doing different kinds of work – such as software development – that have contradictory space requirements. Sometimes they need total privacy and concentration; other times they need the ability to work collaboratively in teams. "With BlueSpace, we're discovering new ways of providing people with increased flexibility and control of their workspace," says Greiner.

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BlueSpace has several unique answers for the perennial question of how to make an open-concept workstation feel like an enclosed, private space. “Threshold” is an L-shaped partial ceiling and wall panel that’s less than two-feet wide and moves on a rail that crosses the width of the cubicle. It contains a brilliant array of adjustable LED, providing variable overhead lighting that can change with the time of day. Sit under it, and it adds a third dimension to the cubicle, becoming a virtual door and ceiling.

In another iteration, Threshold can incorporate special MIT-developed loudspeakers that can be focused into a very narrow dispersion pattern. The BlueSpace user can invite several colleagues to sit under or nearby the Threshold and share a conference call – without disturbing neighboring coworkers.

On the outer wall of the Threshold is a flat-screen electronic message board that can display schedules, current projects and whatever the user might wish to convey to passersby without inviting unwanted disruptions. An overhead Status light can flash blue, red and green to indicate that the user is present, and whether or not visitors are welcome.

“In the typical workplace,” says Joe Branc, leader of the Steelcase R&D team, “people spend a surprising amount of time just trying to communicate with each other. This includes getting recorded messages, leaving messages, trying to schedule meetings and physically walking down a hall only to find an empty office or a closed door. BlueSpace should make ordinary office interaction a lot easier and less time-consuming.”

BLUESPACE'S UNIQUE ARRAY OF DISPLAY AND WIRELESS SENSOR TECHNOLOGIES CAN OFFER AN INNOVATIVE SOLUTION TO A VERY CONTEMPORARY PROBLEM: HOW TO ALLOW TWO OR MORE PEOPLE TO SHARE THE SAME OFFICE SPACE AT DIFFERENT TIMES.

Branc smiles when discussing the companies’ concept for Monitor Rail, a completely original computer display. It replaces the fixed computer monitor screen sitting in most offices today with two monitor screens mounted on a support arm that can be twisted 270-degrees in any direction. The support arm for the monitors rides on a rail across the width of the workspace – shifting the configuration of the workspace so that the screens can be viewed from any angle.

“It gives people the ability to manage their work environment,” says Branc. “They can hunker down in a corner, like sitting in a cave, or they can turn it around into a wide open space for presentations.” With two screens, you can multitask, display twice as much information simultaneously or use the second screen as a touch-activated control panel – dubbed BlueScreen – to adjust the physical environment (temperature, airflow, lighting and humidity).

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Other unique features include sensors that can be located in the chairs and elsewhere. These can automatically trigger pre-sets for ambient lighting levels, temperature preferences and noise levels, including white noise to reduce distractions from noisy neighbors.

There's also an elaborate projection system, called Everywhere Display, with a 180-degree range that projects still images on dividers, walls, floors and conference tables, making any space into oversized flip chart boards for sharing e-mails or other documents. Wireless sensors can be activated by the presence of a visitor's badge, instantly switching sensitive or confidential displays to a generic image.

BlueSpace's unique array of display and wireless sensor technologies can offer an innovative solution to a very contemporary problem: how to allow two or more people to share the same office space at different times. Consultants and other employees who typically spend long stretches on the road are losing their right to a traditional private office or workspace because their empty offices tie up expensive real estate. Instead, in some cases, their private space is being reduced to a locked file pedestal on wheels – what the office equipment industry calls "hoteling."

Says Branc, "The BlueSpace solution is to computerize the equivalent of your own cluttered desk top, flip charts, marker-board project schedules, even family pictures – displaying it all only when you are personally present to access it with a coded company badge that would be read by wireless sensors." When you go on the road, you can electronically lock it away, and someone else can use the same office space – and feel equally at home.

At present, BlueSpace is still a one-of-a-kind, hand-made prototype. It's an on-going research project – the office furniture equivalent of a fantasy concept car at an auto show. BlueSpace represents a future direction that can either offer a portfolio of features working together in an integrated system, or separately, as individual products.

Blue Space is full of the latest technology and has been created to specifically support end-user needs. It is an exciting expression of the kind of work spaces we might see in the future.