case study

"We're creating an environment for innovation and teamwork. We need to attract world-class people, to turn out world-class R&D."

James Good
President
Humantech, Inc.

Steelcase

"The Discovery Centre's state-of-the-art design is a result of the analytical approach we have taken in creating its layout."

Robert Tramontano,
Vice President, Marketing,
NCR Financial Solutions Group

"This is more than a real estate decision; we need a totally new work environment. We need total flexibility. Our business changes fast, so we need to react immediately, regroup quickly. We want the capability to move 100 people over a weekend… and have everything up and ready for them Monday morning, without missing a step." **Ray Robertson,** Head of Facilities

NCR's manufacturing facility, built in 1945, went through a number of conversions which left research and development scattered in and around production.

Strategic investment.

Organizational Goals

For over 20 years the people of NCR's Financial Solutions Group went to work in an aging factory complex that was designed for the manufacture of automated teller machines. But by 1999, NCR's executive team decided that to maintain its global leadership in ATMs, the company needed both a new way of working and a new work environment.

After months of planning, NCR chose to erect a new research and development facility within walking distance of its existing campus of buildings in Dundee, Scotland.

In return for a considerable investment in the future facility, NCR's leadership team made clear its expectations for a number of measurable improvements:

- innovation that would allow the company to maintain its market leadership
- increased speed to market
- success in attracting and retaining outstanding people
- flexible and fluid work environments that would easily accommodate new and better ways of working

Nestled alongside busy roadways that lead to the historic city of Dundee, Scotland, a sparkling new four-story research facility creates an environment of innovation and creativity.

NCR is a global enterprise that helps companies "turn customer transactions into mutually beneficial relationships" through its portfolio of transaction and data warehousing solutions.

Organizational effectiveness.

Workplace Objectives   The facility planning team in Dundee envisioned a number of ways to justify the cost of a new facility. One was to improve methods of knowledge sharing.

"Our old environment inhibited the cross-fertilization of knowledge," says Gill Tulloch, head of development, software and services "We often found ourselves duplicating work being done by others. Sometimes a new technology might be pursued by several people at the same time… a waste of time and talent."

"When we began this project, we avoided the temptation to focus on new furniture. We were much more interested in how to achieve better business results… to make the whole organization more effective. So we got down to the grass-root level, asking for ideas and opinions from the people who would work in the new building." **Ray Robertson,** Head of Facilities

"Overall, we needed to be more productive," says Mark Grossi, chief technology officer for the Strategic Solutions group. "If you can get spontaneous discussion, then you can get innovation. We saw that the way to achieve our goals was through a flexible environment that would contribute to easy communications."

In the previous office facilities, critical research and development activity was often met with annoying obstacles; of prime concern was the lack of adequate space for the various groups and teams. In planning the new facility a major goal was to help stream-line project flow and help teams stay focused.
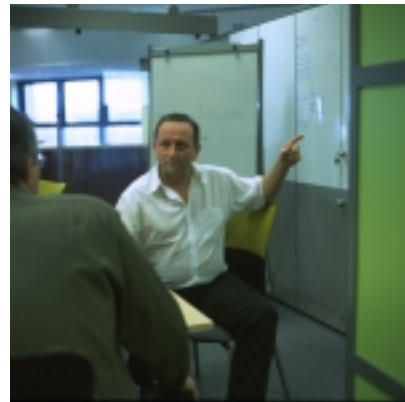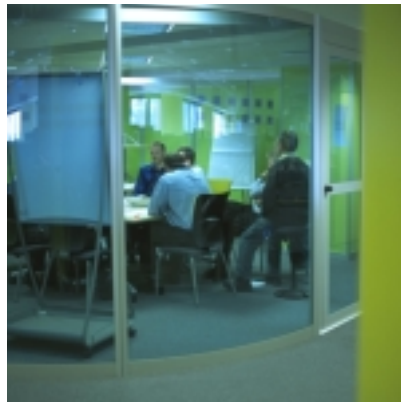
"I couldn't count how many changes of layout we did in a year. Each time, it took hours to move partitions and cubicles and rewire for electricity and communications." **Ray Robertson,** Head of Facilities

Community-based Planning.

Early on, the NCR planning team recognized that a new facility would cause people to change the ways they work—both individually and in groups. As they planned a workplace that would help employees perform at peak levels, they were wary of creating new obstacles to the tried-and-true methods they wanted to retain.

The quest to improve organizational effectiveness—making the switch from isolation and congestion, to openness and collaboration—led the team to consider a discipline called Community-based Planning from Steelcase.

Community-based Planning from Steelcase is a user-centered space planning methodology that enables companies to fully leverage the physical workplace to achieve measurable improvements in bottom line business results.

How to share critical knowledge quickly and on-demand? Community-based Planning helped identify existing obstacles caused by the facility, and uncover shortcuts for making knowledge more accessible.

Community-based Planning improves the effectiveness of both people and space. It helps boost personal performance, enhances teamwork, and assures that space is leveraged to meet the organizational needs identified through research and observation.

Sharing knowledge and intellectual capital among 500 R&D workers was awkward and slow in the old manufacturing facility.

NCR sought the help of Georgeson, a workplace design firm in Glasgow. Georgeson's team used a patent-pending six-step, user-centered approach—Community-based Planning from Steelcase:

1 Prepare
Prepare for significant change; verify adequate understanding of targeted outcomes.

2 Uncover
Uncover the organization's strategic intent; engage users in identifying critical issues.

3 Discover
Identify and diagnose anticipated problems.

4 Explore
Explore real-life solutions in the form of actual work environments.

5 Implement
Implement the plan with working drawings, product specifications, and installation.

6 Measure
Measure the resulting health and effectiveness of the organization.

Three unique tools.

Design

Community-based Planning evolves from specific business objectives, so it was critical to seek input from the people who would actually occupy the new Discovery Centre. Three tools were used to gather accurate information.

1

•**Network Analysis** identifies and maps internal networks that allow the company to flourish.
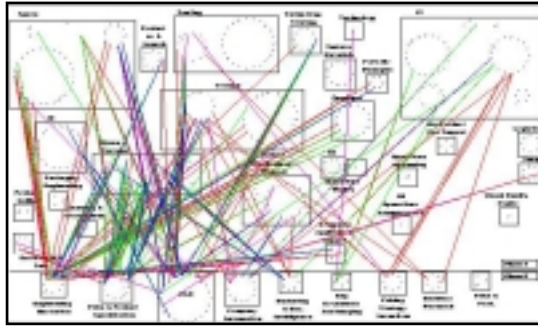
For Adam Crichton, head of development for NCR's Global Solutions team, some results were surprising: "We discovered that one of our most significant network connections was one that no one would have listed in the top three."

•**Observation** provides an up-close look at what really happens inside an organization, using cultural anthropology and ethnography.

2
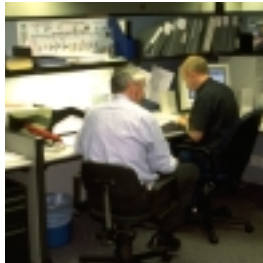
With disposable cameras in hand, NCR's project team roamed existing work areas, capturing images of the ways people really worked…and the ways in which the environment helped or hurt their efforts.

•**Co-design** involved NCR workers in the overall design process.

3

"Some of our ideas that looked good on paper were quite embarrassing when we tried them in full-size mock-ups," says marketing manager Sharon Dickie. "But our final designs worked great in the end."

"The human behaviors we observed in the old facility are supported far better in the new work environment, resulting in measurable improvements in NCR's business results." **Frances Graham,** Georgeson Account Manager

What if...

Using the techniques of Community-based Planning, the Georgeson team gathered insights and recommendations to take back to the NCR leader-ship group. A key insight was the obvious need for more tranquil spaces for groups to gather, formally and informally.
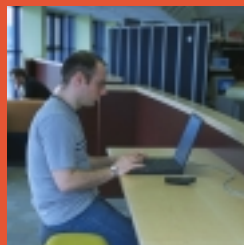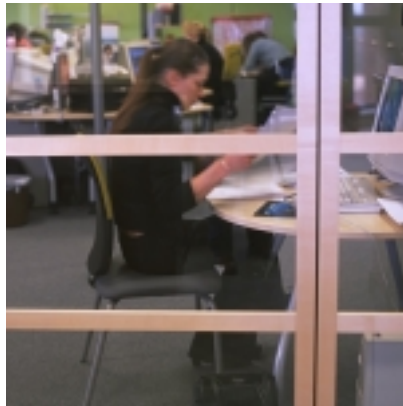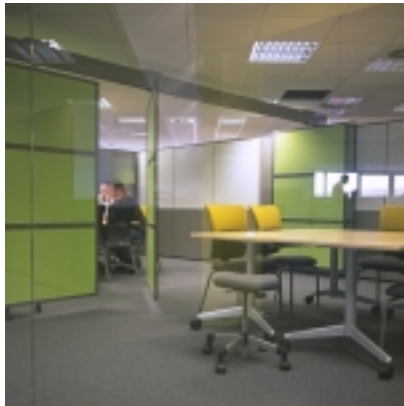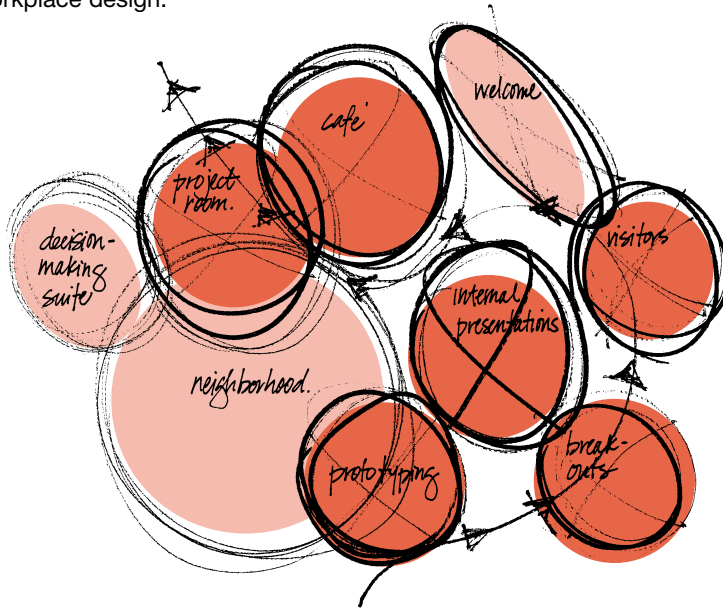
This bubble diagram developed by Georgeson's space planners illustrates both the variety and concentration of typical R&D team activities at NCR. Beyond the obvious work-intensive tasks, there are also personal needs for relaxation, nutrition, and social interplay that are often overlooked in workplace design.
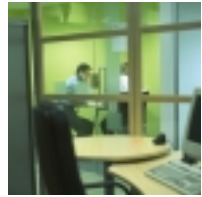
Work is not always a group activity. Sometimes it's necessary to get away from clamor and commotion … to concentrate, meditate, formulate emerging notions in quiet privacy.

% of space

old facility   new facility

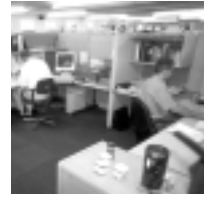■ individual workspace
■ group/team workspace
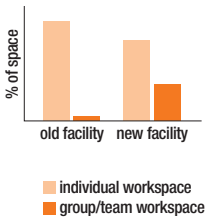
In the older facility, the nearly 500 office workers occupied 96% of floor space for their individual work areas, which allowed only 4% for group or team spaces. In NCR's new Discovery Centre, individual work-spaces represent up 70%, and group/team spaces occupy 30%.

welcome

café

project room.

decision-making suite

visitors

internal presentations

neighborhood.

prototyping

break-outs

"Success hinges not only on the people who work here day to day. Huge contributions are made by vendors and NCR people from other locations. When they're here, they need places to work effectively." **Mike Cusack,** Manager, Organizational Development

"Community-based Planning was absolutely critical to the success of this project. It's not about doing things to people, it's about involving all the people. Everyone was kept informed. And anyone with an idea about how to make it better had the opportunity to contribute. It's a fantastic process."

Mike Cusack, Manager, Organizational Development

Designing the mechanics, electronics and software that make ATMs work requires concentration as well as plenty of space for interaction. Individual isolation, along with constant visual and acoustical distraction were drawbacks in the old facility.

Getting personal.

Organizational Impact As NCR discovered, Community-based Planning supports systemic changes in the ways an organization actually works. It helps develop a clearer understanding of the entire enterprise, its cultural distinctions and social networks. By applying that knowledge to the workplace, substantial improvements can be made in innovation, communications, work process, learning, and decision-making.
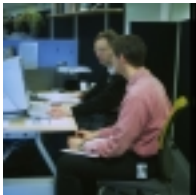
Every worker affects—and is affected by—an identifiable network of co-workers. Productivity improves when everyone in the network connects quickly and easily throughout the organization.

The new work environment at NCR's Discovery Centre is only 600 meters away from its old facility, but decades different in the way it supports the effectiveness of getting work done.

After six months of occupancy, surveys among employees who moved into the NCR Discovery Centre showed that organizational effectiveness was improved in five key areas that affect business results.

| Decision-making	Innovation	Learning	Communications	Work Process
150% improvement	**40%** improvement	**75%** improvement	**14%** improvement	**14%** improvement
60-point increase	20-point increase	30-point increase	10-point increase	10-point increase

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Getting together.

How to get new NCR products into the market faster? Make it easy for workers at every level—and across various disciplines—to get together to share new knowledge, update project information... then quickly make vital decisions.
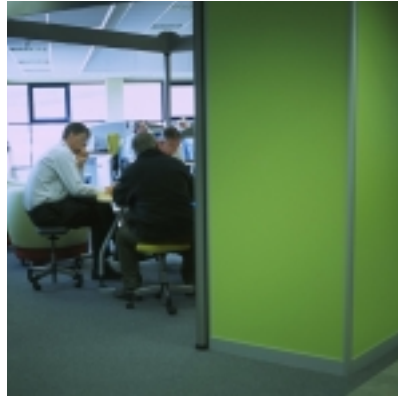
Areas designed for inspiring creative activity, collaboration, or brainstorming were missing throughout the old facility. Cluttered meeting rooms offered very little to inspire innovation.

Common creature comforts: adequate sunlight, reliable heating, ventilation, and air conditioning were missing in the original building.
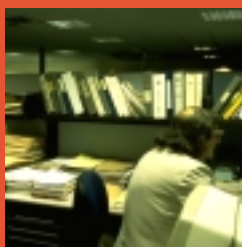
Scattered throughout the aging facility were clusters of one-size-fits-all cubicles, forcing engineers, researchers, and product developers to find ways to overcome the buildings' shortcomings. Lack of group spaces and shared storage encouraged duplication of reference materials and the isolation of important information.

New opportunities.

Solutions

"We've been happily surprised by a few unexpected bonuses," reports core team member, Jim Piggot. "For example, improvements in our internal communications—getting together faster and easier—helped us uncover an extraordinary opportunity for a new service business that we think will contribute nicely to our bottom line."


The open plan design incorporates movable screens that liberate its occupants. Tall post-and-beam assemblies help establish group "neighborhoods," encourage spontaneous assembly, and subtly direct users to activity areas.

Visitors, including transient NCR employees and contractors, had no place on the premises to perform quiet individual work.
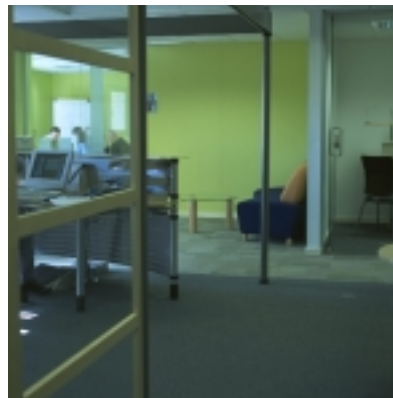
In a cordial, appealing environment, the contemporary worksetting of the Discovery Centre supports speed, innovation and excellence. It's a place where job satisfaction is rewarded with improved work effectiveness throughout the entire organization.
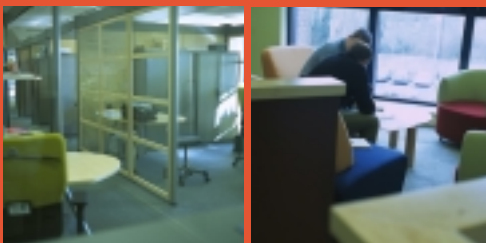
"Getting people together is so much easier, both formally and informally. We get things done faster because everything is at our fingertips: technology, information display, the network." **Jim Piggot,** GST Leader, Software and Services

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FreeWall®

Communicator®

Frisco®

FlipTop®

Let's B®

TNT®

Ponte®

Pathways® Universal Storage

Credits

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