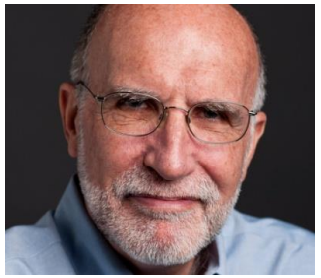
FM:SYSTEMS USER 2019 CONFERENCE
BUILDING INSIGHTS

The Transformation of Work and Work Environments

Trends and Possibilities

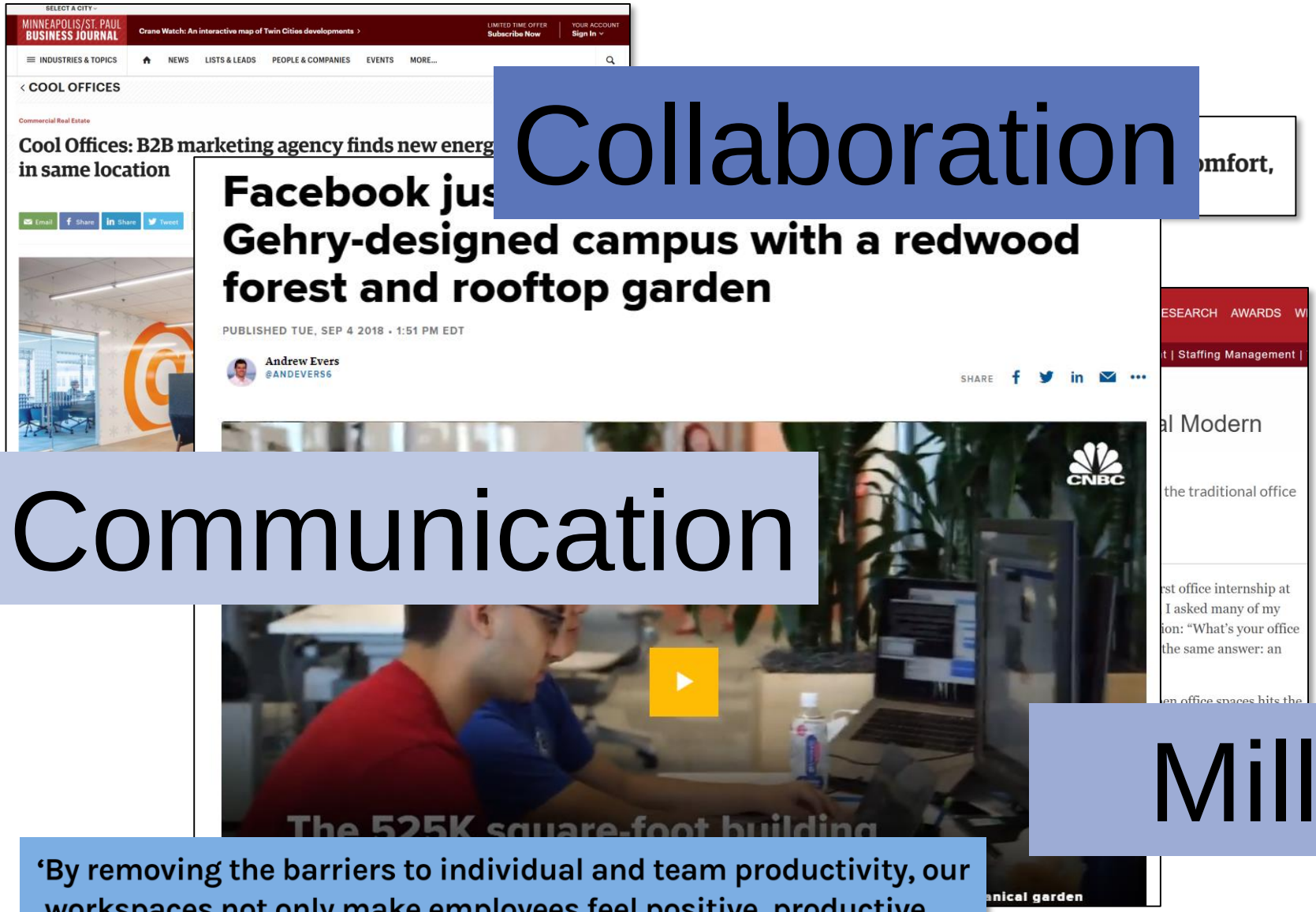
Michael Schley, Founder and Chairman, FM:Systems
Tim Nelson, Principal, Boston Scientific

About Your Speakers



Michael Schley, IFMA Fellow
Founder and Chairman
FM:Systems
Raleigh, NC

Tim Nelson, PMP
Principal, Facilities Management
Boston Scientific
Marlborough, MA



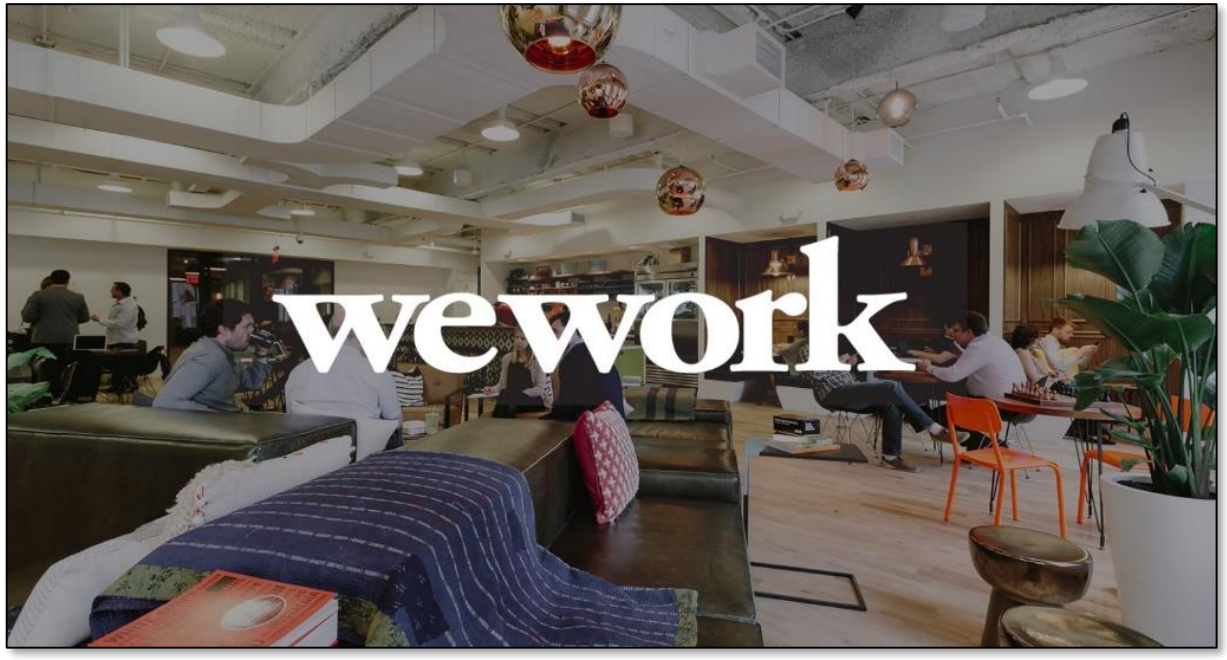
Collaboration

Communication

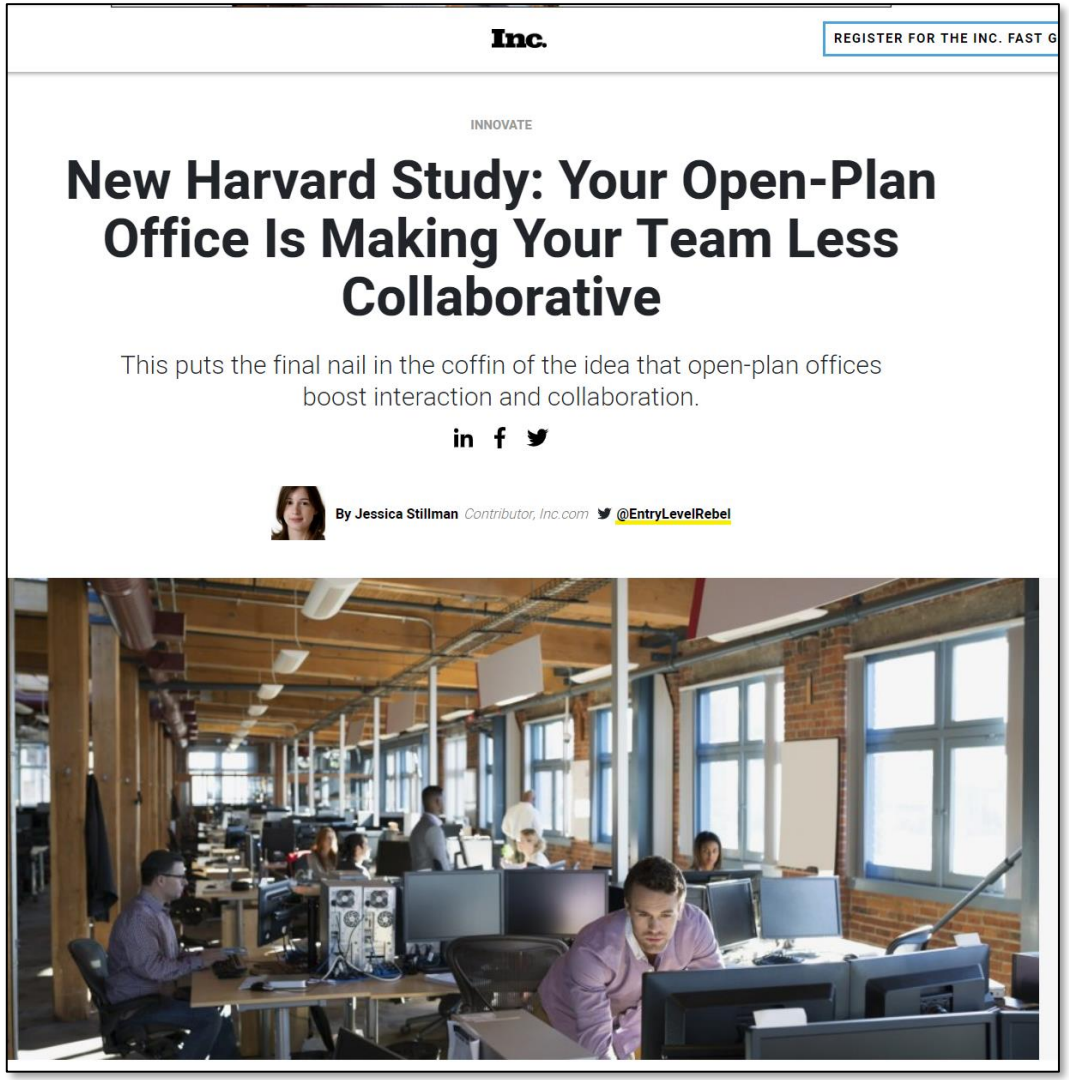
Millennials

There is a lot of interest in the workplace

'By removing the barriers to individual and team productivity, our workspaces not only make employees feel positive, productive and happy but also connect them to their company's mission.'



WeWork Current Valuation: $47B



Inc.

REGISTER FOR THE INC. FAST G

INNOVATE

New Harvard Study: Your Open-Plan Office Is Making Your Team Less Collaborative

This puts the final nail in the coffin of the idea that open-plan offices boost interaction and collaboration.

By Jessica Stillman *Contributor, Inc.com* @EntryLevelRebel

How did we get here?
What does the research tell us?

Junk Science

Opinions and anecdotes

Small, self-selected samples

Researcher bias

Observer bias (Hawthorne Effect)

Popular press

Evidence-Based Research

Evidence from well-designed studies

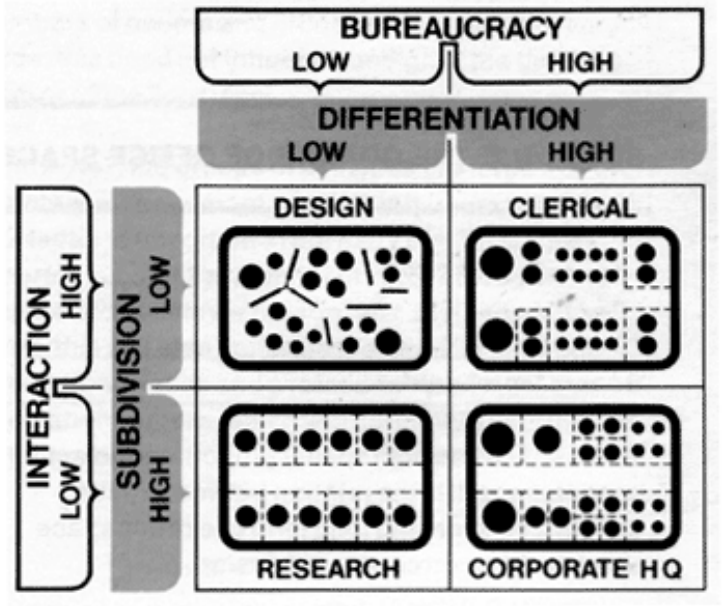
Large, random samples

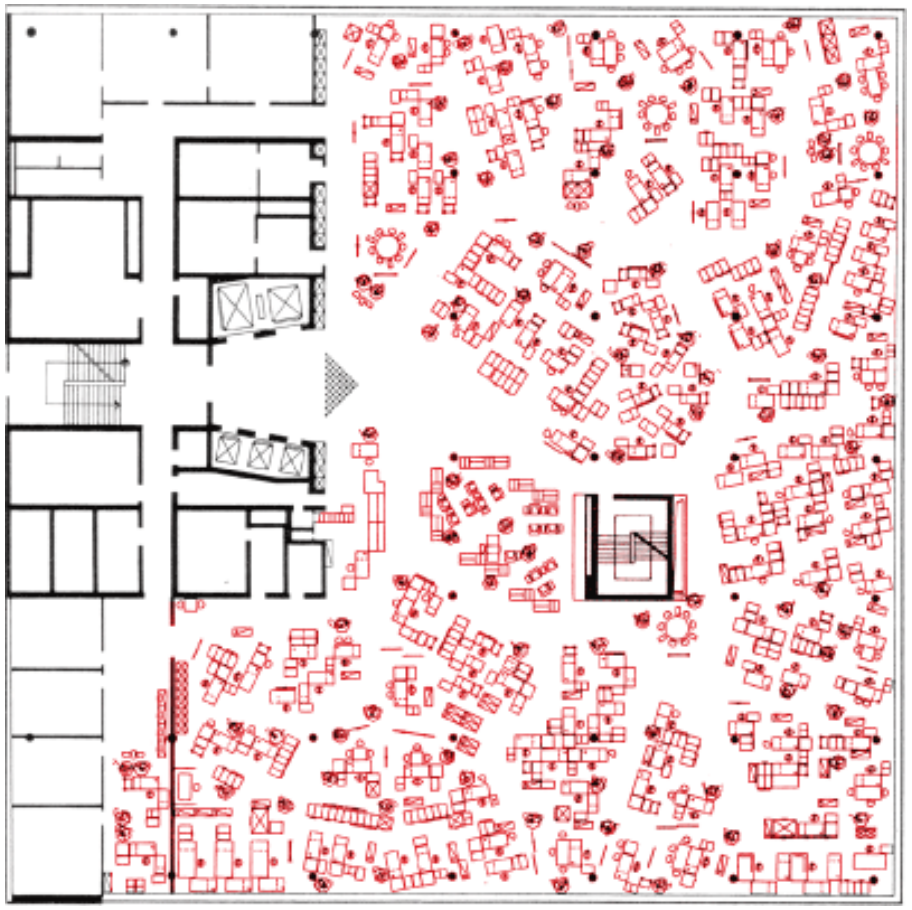
Hypothesis to provide or disprove

Correction for observer bias

Peer-reviewed journal

Proxy for Productivity Measurement

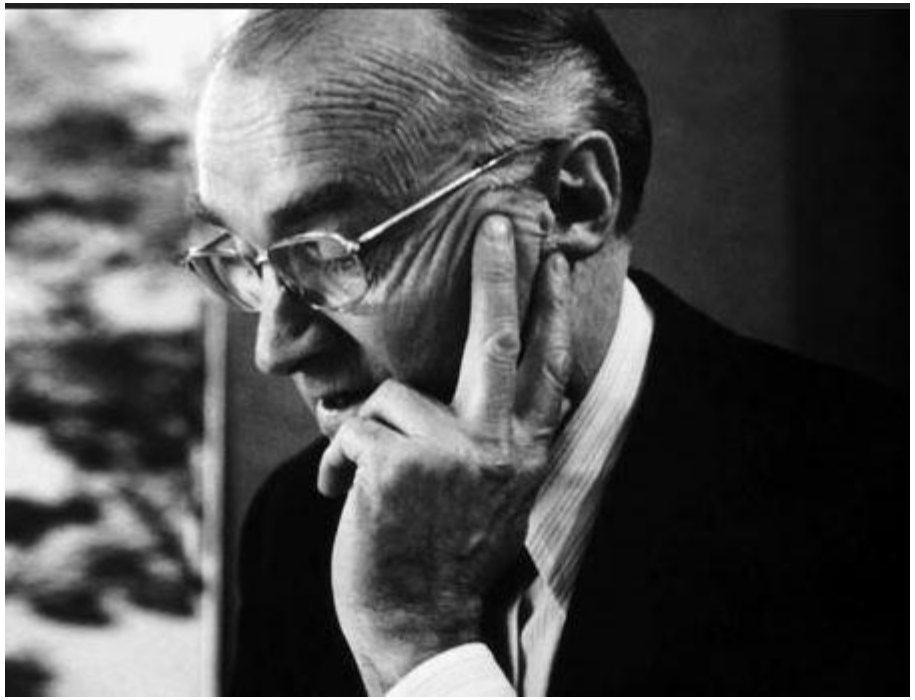


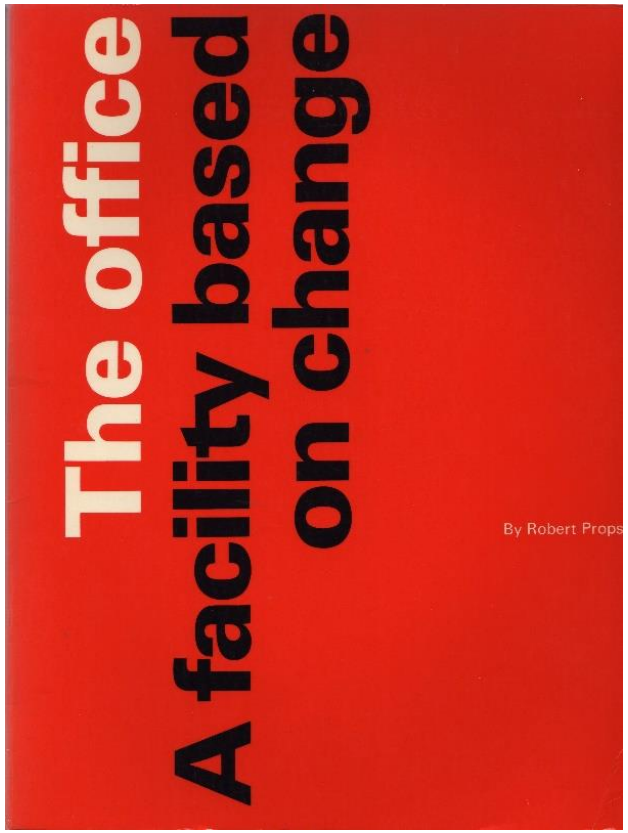


Quickborner Team, Germany, 1960's

Bürolandschaft

The rationale was based on a more complex scientific model of human relations rather than Taylorism. For the first time, widely diverse nature of kinds of office work was recognized and the Quickborner team devised criteria for fitting a particular kind of office to a specific type of layout.





1968

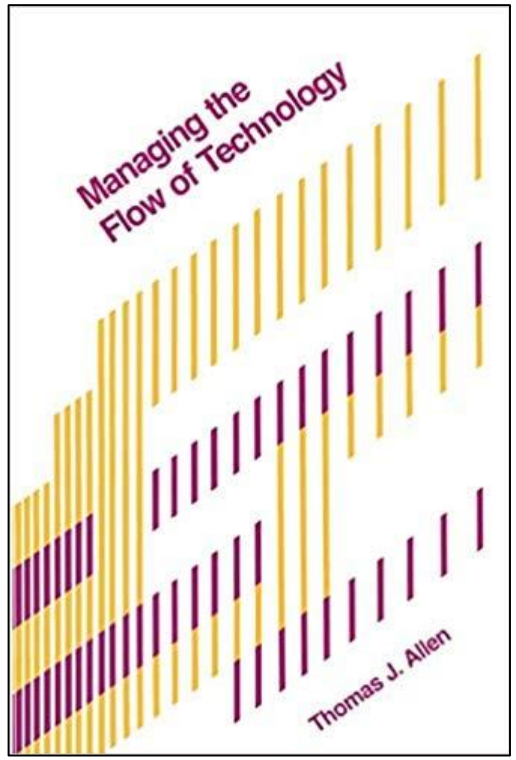
Robert Propst

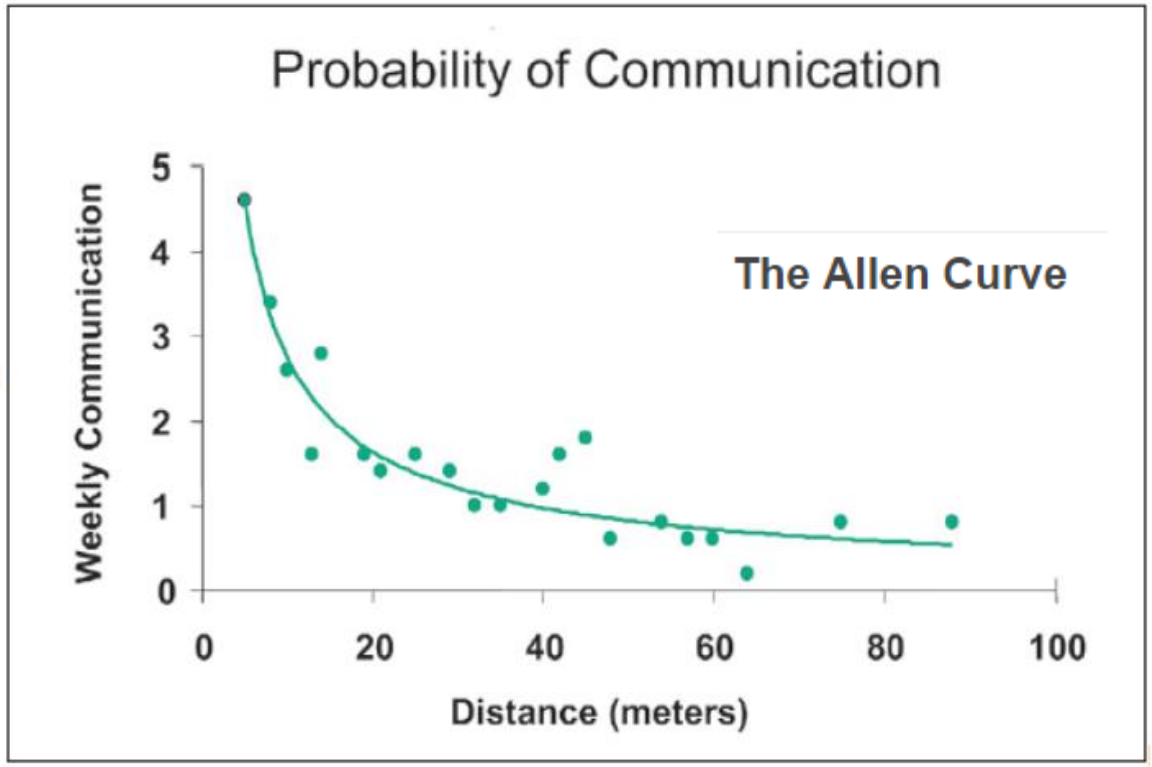
Herman Miller's Action Office

..and a manifesto

Flexibility

Communication





6 The curve shows how as the physical distance between two individuals increases, the likelihood they can communicate at least once a week declines exponentially. (Allen, 1984 in Allen and Henn, 2007:57)

1977

MIT Researcher
Thomas J. Allen

The Allen Curve

Proximity results in increased communication between coworkers

Workplace Strategy Summit 2012

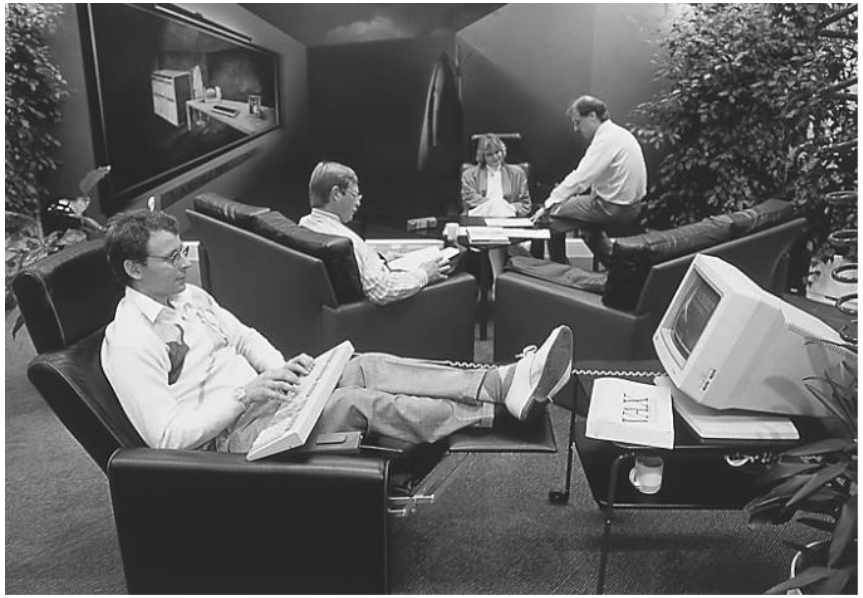
Francis Duffy
DEGW

Frank Becker,
Cornell Univ.

Alexi Marmot
Univ. College London

Michael Joroff
MIT

DEC Finland- Office of the Future, "Offices that Work", Franklin Becker, 2004



1990's

Frank Duffy, DEGW

Frank Becker, Cornell University

- Free Address System
- Workplace Strategy
- Non-Territorial Office
- Hive and Cluster

Macquarie Bank Project, Sydney, Australia by CliveWIlkinson Architects

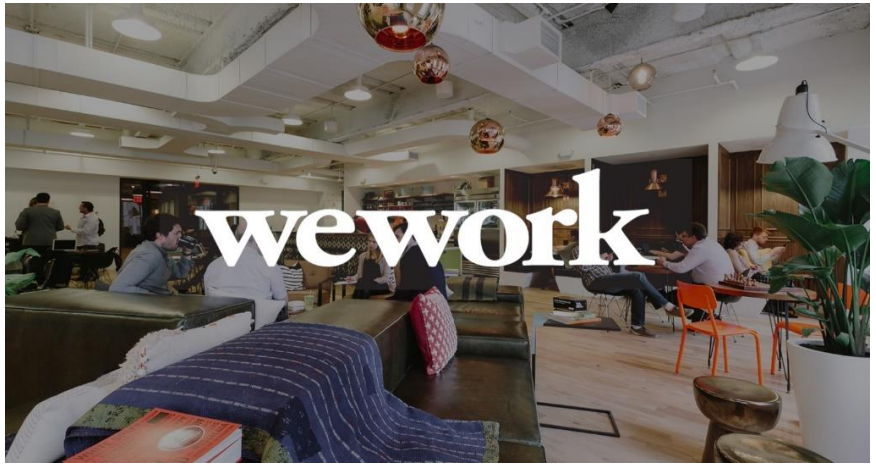
1995

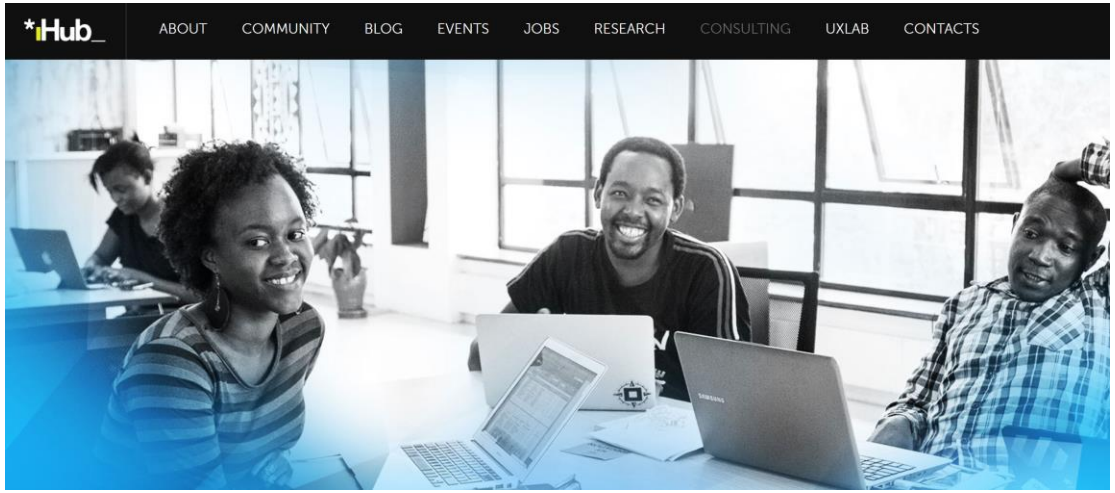
ABW

Activity Based Working

Erik Veldhoen

Work in the place that best suits the activity you are doing.





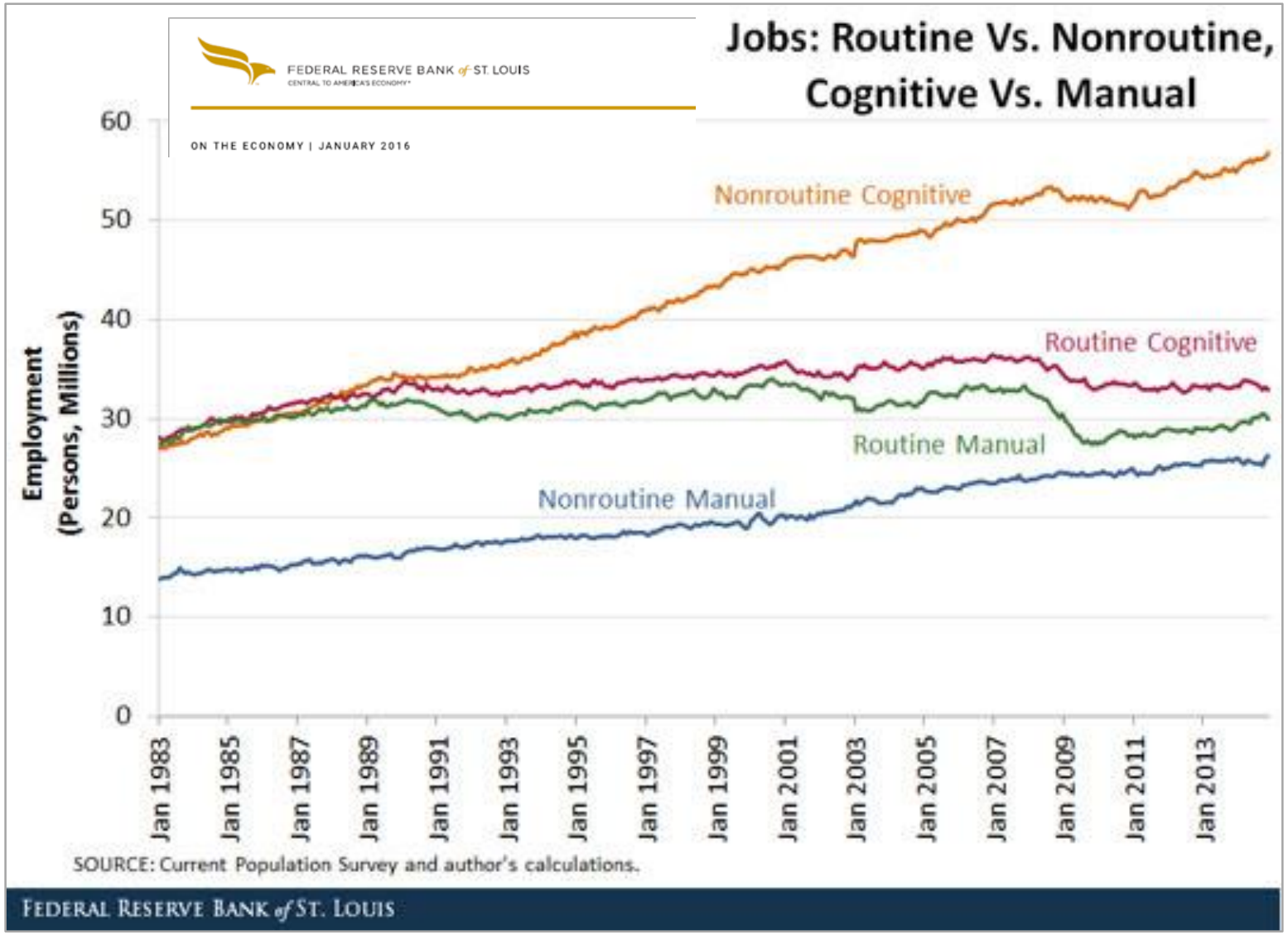
Coworking

1995- C Base in Berlin

2005 San Francisco Coworking Space

Tech Incubators

2008 – Greendesk, later to become WeWork



2016

Federal Reserve Bank of St. Louis Study on Job Trends

Growth in Nonroutine Cognitive Jobs

Collective Intelligence

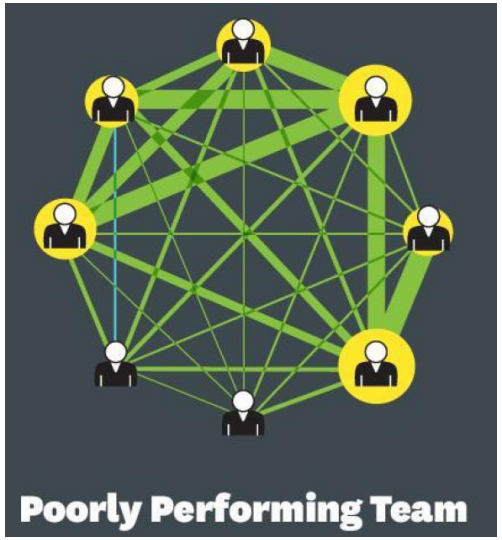
Science Home News Journals Topics Careers

Evidence for a Collective Intelligence Factor in the Performance of Human Groups

Anita Williams Woolley,[1]* Christopher F. Chabris,[2,3] Alex Pentland,[3,4]
Nada Hashmi,[3,5] Thomas W. Malone[3,5]

Psychologists have repeatedly shown that a single statistical factor—often called "general intelligence"—emerges from the correlations among people's performance on a wide variety of cognitive tasks. But no one has systematically examined whether a similar kind of "collective intelligence" exists for groups of people. In two studies with 699 people, working in groups of two to five, we find converging evidence of a general collective intelligence factor that explains a group's performance on a wide variety of tasks. This "*c* factor" is not strongly correlated with the average or maximum individual intelligence of group members but is correlated with the average social sensitivity of group members, the equality in distribution of conversational turn-taking, and the proportion of females in the group.

Courtesy Science Magazine, October 2010



Study

Aspects of Communication:

- Energy- Number of interactions among team members
- Engagement – Distribution of energy among team members
- Exploration – Interactions outside the team

Call Center Average Handling Time improved by 20%

“The best predictors of productivity were a team’s energy and engagement outside formal meetings.”

Weekly beer blasts- no effect

Longer tables in cafeteria – big impact

MIT News

ON CAMPUS AND AROUND THE WORLD

“Moneyball for business”

Startup’s behavioral analytics on employees uncover ways to increase workplace productivity, satisfaction.

Rob Matheson | MIT News Office
November 14, 2014

Sociometric Sensors

Measure:

- Face-to-face communication
- Conversation time
- Physical proximity to others
- Body motion

PHILOSOPHICAL TRANSACTIONS B

rstb.royalsocietypublishing.org

Research

Cite this article: Bernstein ES, Turban S. 2018 The impact of the 'open' workspace on human collaboration. *Phil. Trans. R. Soc. B* **373**: 20170239. http://dx.doi.org/10.1098/rstb.2017.0239

Accepted: 3 May 2018

One contribution of 11 to a theme issue 'Interdisciplinary approaches for uncovering the impacts of architecture on collective behaviour'.

Subject Areas:
behaviour, ecology

The impact of the 'open' workspace on human collaboration

Ethan S. Bernstein[1] and Stephen Turban[2]

[1]Harvard Business School, Boston, MA, USA
[2]Harvard University, Cambridge MA, USA

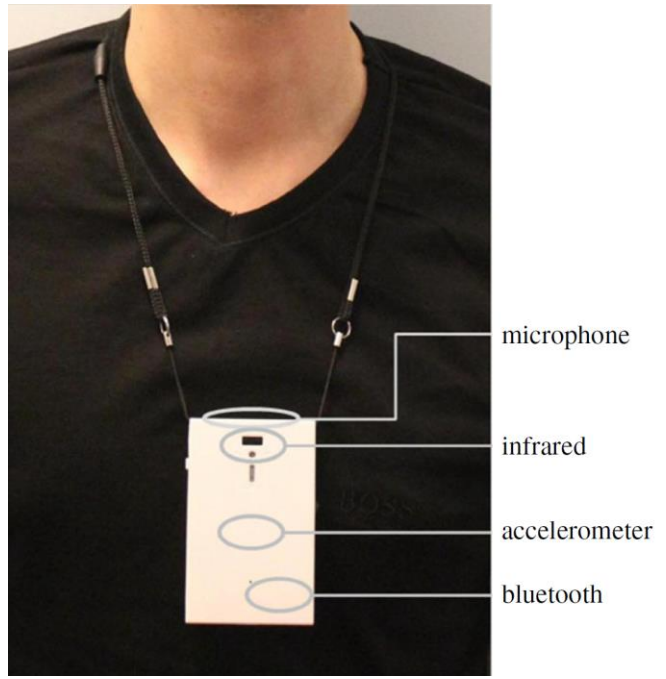
ESB, 0000-0001-9819-0639

Organizations' pursuit of increased workplace collaboration has led managers to transform traditional office spaces into 'open', transparency-enhancing architectures with fewer walls, doors and other spatial boundaries, yet there is scant direct empirical research on how human interaction patterns change as a result of these architectural changes. In two intervention-based field studies of corporate headquarters transitioning to more open office spaces, we empirically examined—using digital data from advanced wearable devices and from electronic communication servers—the effect of open office architectures on employees' face-to-face, email and instant messaging (IM) interaction patterns. Contrary to common belief, the volume of face-to-face interaction decreased significantly (approx. 70%) in both cases, with an associated increase in electronic interaction. In short, rather than prompting increasingly vibrant face-to-face collaboration, open architecture appeared to trigger a natural human response to socially withdraw from officemates and interact instead over email and IM. This is the first study to empirically measure both face-to-face and electronic interaction before and after the

The 2018 Harvard Study – This Changes Everything

The Study

2 tests, Fortune 500 companies, 52 and 100 voluntary participants moved from traditional workspace to assigned open workspace. Communication patterns analyzed before the move and 3 months after.



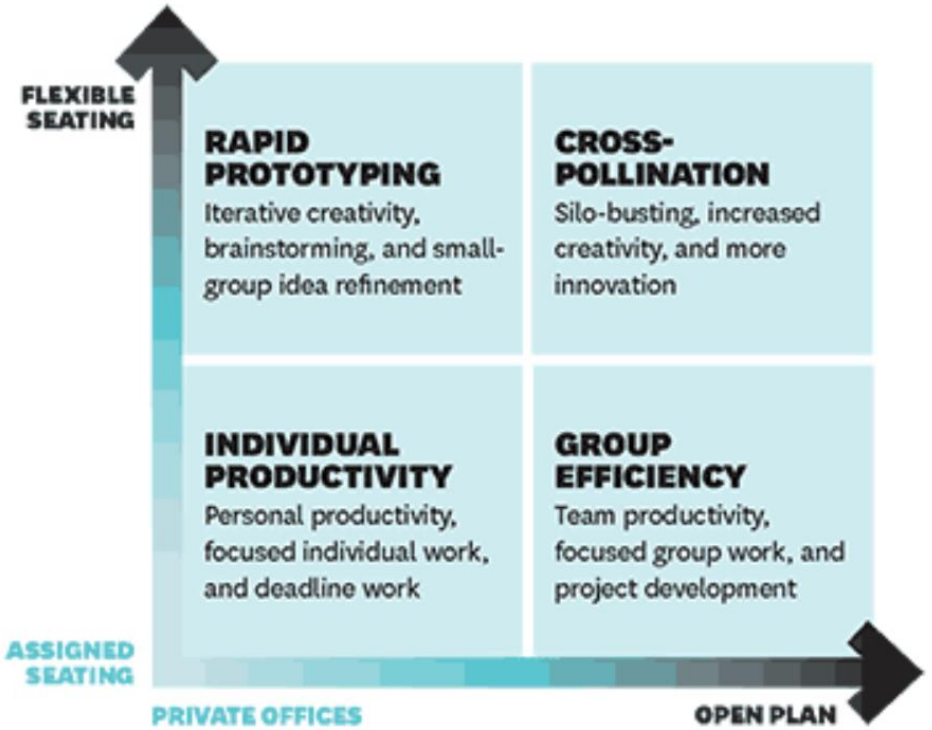
The Finding

Participants who moved to open workspace spent 72% less time in face-to-face communication and 75% more in messaging. Productivity declined.

Not Known

Subject company's industry, what the before and after space looked like, any other factors that might have affected outcome. If unassigned seating would have changed the outcome. But . .

" Open, "transparent" offices may be overstimulating and thus decrease organizational efficiency."
– Ethan Bernstein



Space and Interaction

3 Types of Interaction:

- Exploration
- Engagement
- Energy

Example of Exploration: “When a salesperson increased interaction with coworkers on other teams by 10%, his or her sales also grew by 10%”

"Leaving the office to work at home or in coffee shops or libraries isn't the answer – at least for he long term. Too much remote work creates its own set of problems, such as diminished knowledge transfer, decreased engagement and cultural disconnect."

Balancing Privacy with Collaboration

Organizational Strategies for Privacy

- Protocols
- Signaling
- Strategic Space Planning
- An ecosystem of spaces

It is a matter of balance

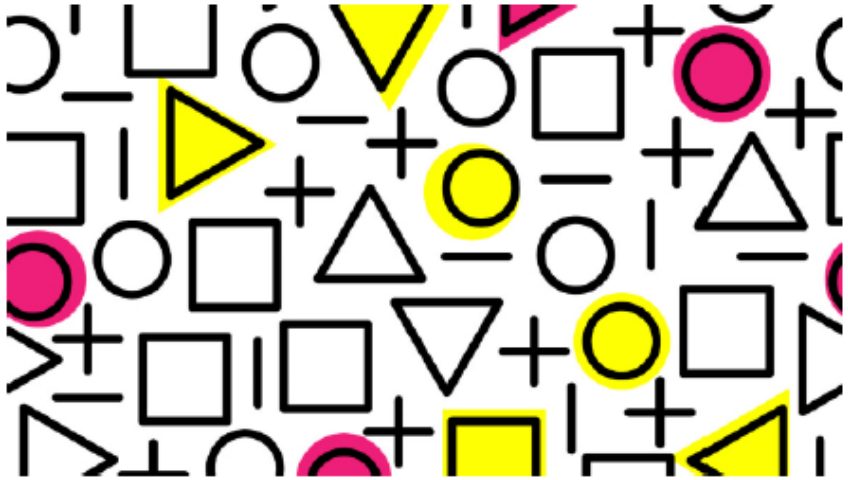
Harvard Business Review

WORKSPACES

7 Factors of Great Office Design

by Peter Bacevice, Liz Burow and Mat Triebner

MAY 20, 2016



Smart companies understand that workspaces are a business tool. An office environment reflects and reinforces a business's core values, through the placement of different teams and functions and design elements that reflect culture, brand, and values.

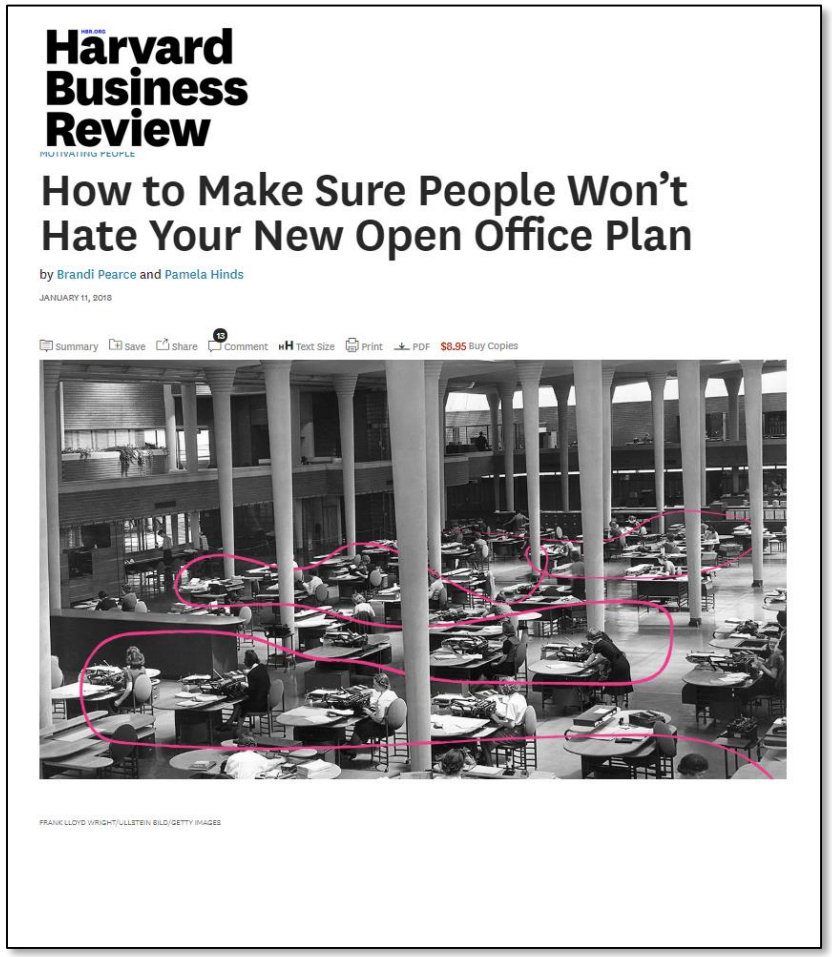
7 Attributes of Workspaces

Use this continuum to identify your company's desired way of working before embarking on an office design project.

Core	**LOCATION** The degree to which the space is accessible by all or few	Periphery
Open	**ENCLOSURE** The degree to which the space is enclosed by walls, doors, or a ceiling	Closed
Public	**EXPOSURE** The degree to which the space offers visual or acoustic privacy	Private
High-tech	**TECHNOLOGY** The degree to which the space is outfitted with high-tech or low-tech tools	Low-tech
Short-term	**TEMPORALITY** The degree to which the space invites lingering	Long-term
Inward	**PERSPECTIVE** The direction in which the space focuses the user's attention	Outward
Large	**SIZE** The usable square footage of the space	Small

SOURCE HLW INTERNATIONAL

© HBR.ORG



Harvard Business Review

MOTIVATING PEOPLE

How to Make Sure People Won't Hate Your New Open Office Plan

by Brandi Pearce and Pamela Hinds

JANUARY 11, 2018

Summary Save Share 13 Comment Text Size Print PDF $8.95 Buy Copies

FRANK LLOYD WRIGHT/ULLSTEIN BILD/GETTY IMAGES

"In our research, we found that the problem may go beyond the physical features of the space itself, and come down to whether employees feel the space aligns with their self-image and enhances their sense of belonging – their place identity."

Good Change Management

- Convey the vision beforehand
- Be enthusiastic about the space
- Encourage workers to adapt the space to their needs

Conclusions/ Suggestions

- Communicate- Explain why, encourage suggestions, follow up
- Follow the good research
- Understand collaboration goals
- Pay attention to privacy
- Embrace the ideas of Activity Based Working- Provide choices of workspaces and encourage workplace mindfulness
- Encourage employee and department workplace autonomy

Best Practices for Agile Workplace Whitepaper
I need your help.

If you have implemented agile workspace or have defined plans to do so and are willing to share your experience, please let me know.
Michael Schley, mschley@fmsystems.com

Boston Scientific

Advancing science for life™

Key Points

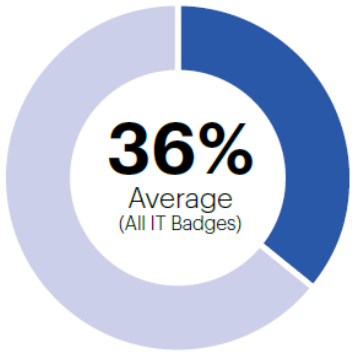
- AgileWork Overview
- AgileWork Problem Statement
  - Utilization review
  - Optimal Seat Leverage Ratio
- Shift in Space Distribution
- Benefits and Financial
- Avoidance
- After the Implementation
- Surveying the Population
- Lessons Learned

IT Low Utilization

In analyzing previous **work patterns** and trends of Boston Scientific IT Employees and Contractors. Badge Data **from period of 56 days** (**40 business days** - from 9/1 to 10/27/2016) **showed low on-site attendance** at Marlborough campus each day.

DAILY AVERAGE

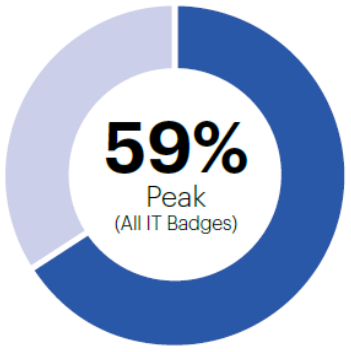
Quantity of IT People Visiting Marlborough Each Day:



74 out of **207** people

MAXIMUM

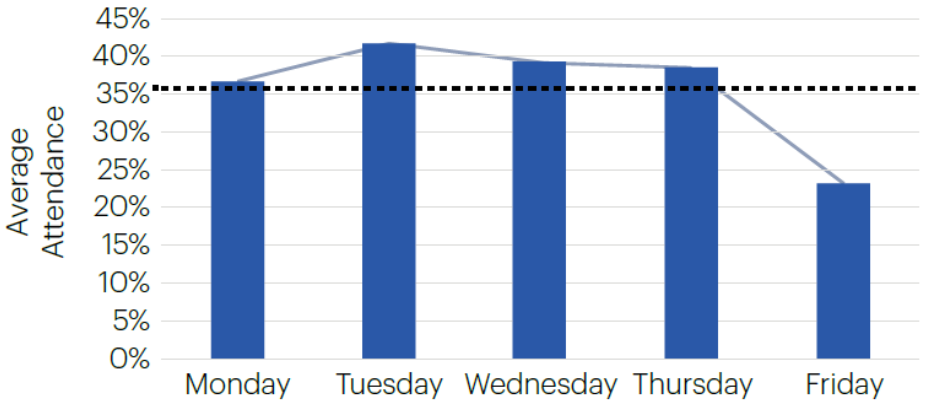
Quantity of IT People Visiting Marlborough Each Day:
(Occurred on 09/08/2016)



122 out of **207** people

TYPICAL WEEK

Average On-site IT Attendance within a Typical Work Week



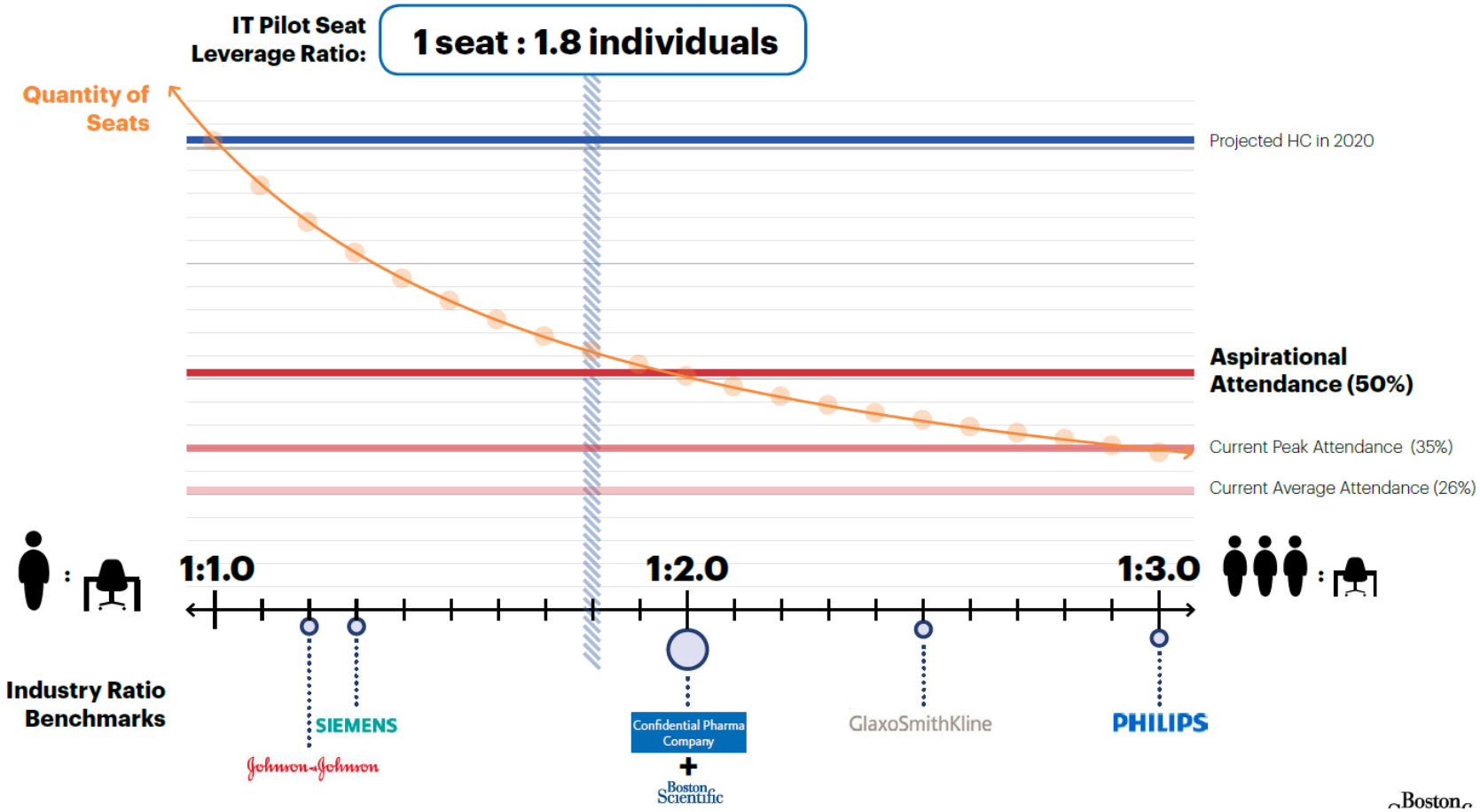
KEY INSIGHT: **57%** of IT Visits Marlborough **Less than 2 Days per Week**

COLOR KEY

All IT *(Employees + Non-Employees)*

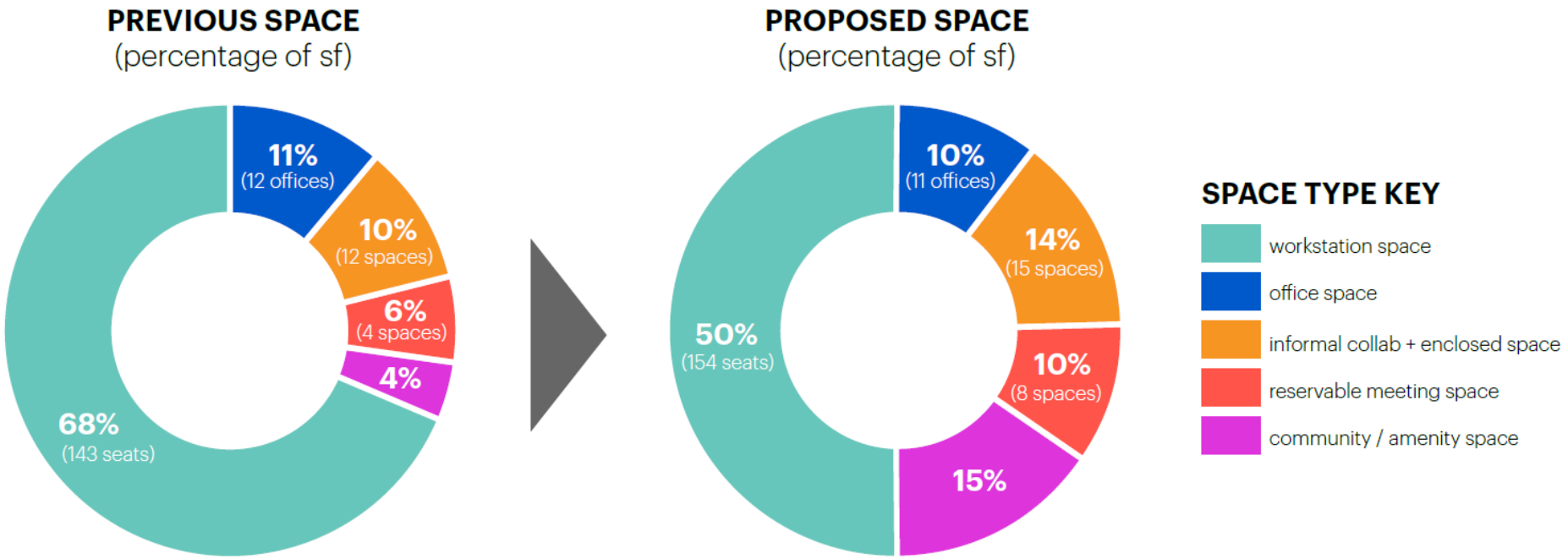
Determining Optimal Seat Leverage Ratio

The **seat leverage ratio** for AgileWork participants was **determined by** estimating **the quantity of seats needed to support an aspiration on-site attendance rate.**



Shift in Space Distribution

TAKEAWAY: **More "WE" space, less "ME" space.** The allocation of space shifts from prioritizing individual workspace to providing more diversity.



Benefits + Financial Avoidance

Key Achievements:

1. **Increased "we" space from 20% to 40%** (meeting, informal collaboration, and community spaces)

2. Flexible work environment that **prepares us for the next 5 years of growth**

3. **Reduction in total space used** from **50k to 25k SF** by an increase in space utilization

Financial Impact for 25k SF Savings:

Estimated Cost of New Construction:

~$250-350/SF (Brick + Mortar)

Estimated Total	**~$7,500,000** (one time spend)

OR

Estimated Recurring Savings:

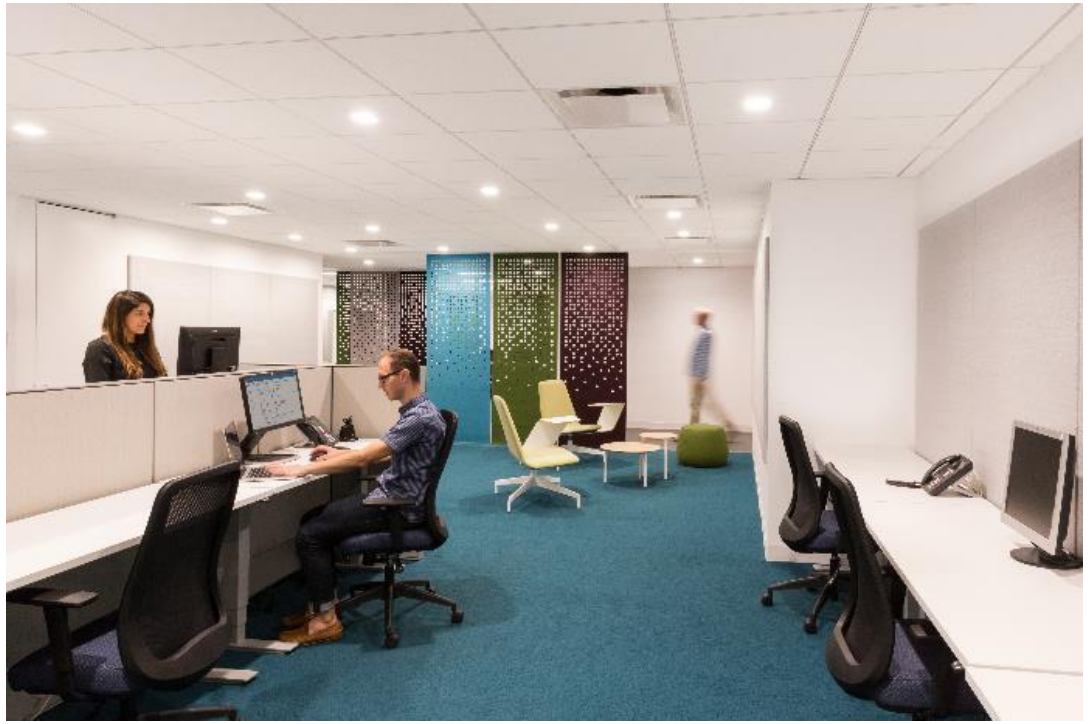
~$30-70/SF (Lease)

Yearly Subtotal	**~$1,250,000** each year (at $50/SF)

~$2-5/SF (Utilities + Maintenance)

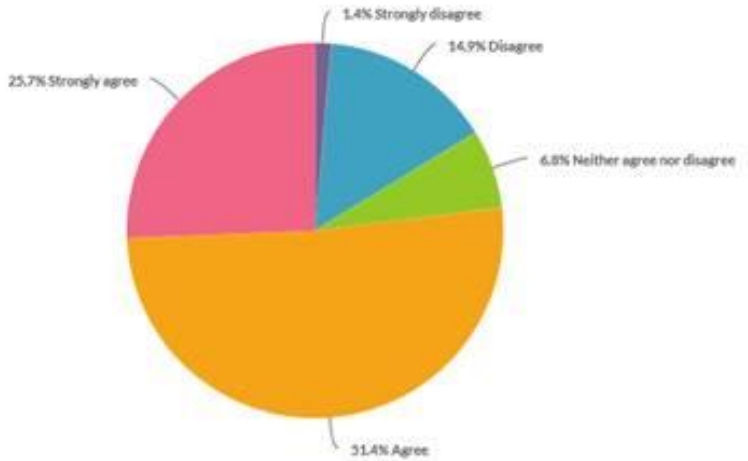
Yearly Subtotal	**~$87,500** each year (at $3.50/SF)
Estimated Total	**~$13,375,000** over ~10 years

AgileWork Implemented



Survey Results – Neighborhoods

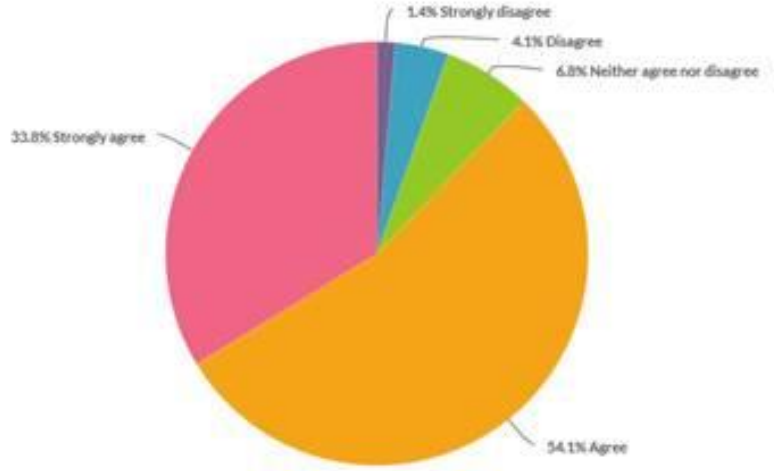
1. The combination of offices, workstations and collaboration spaces creates a "neighborhood" environment and is appropriate to the size and work of my group/function



Value	Percent	Responses
Strongly disagree	1.4%	1
Disagree	14.9%	11
Neither agree nor disagree	6.8%	5
Agree	51.4%	38
Strongly agree	25.7%	19
		Totals: 74

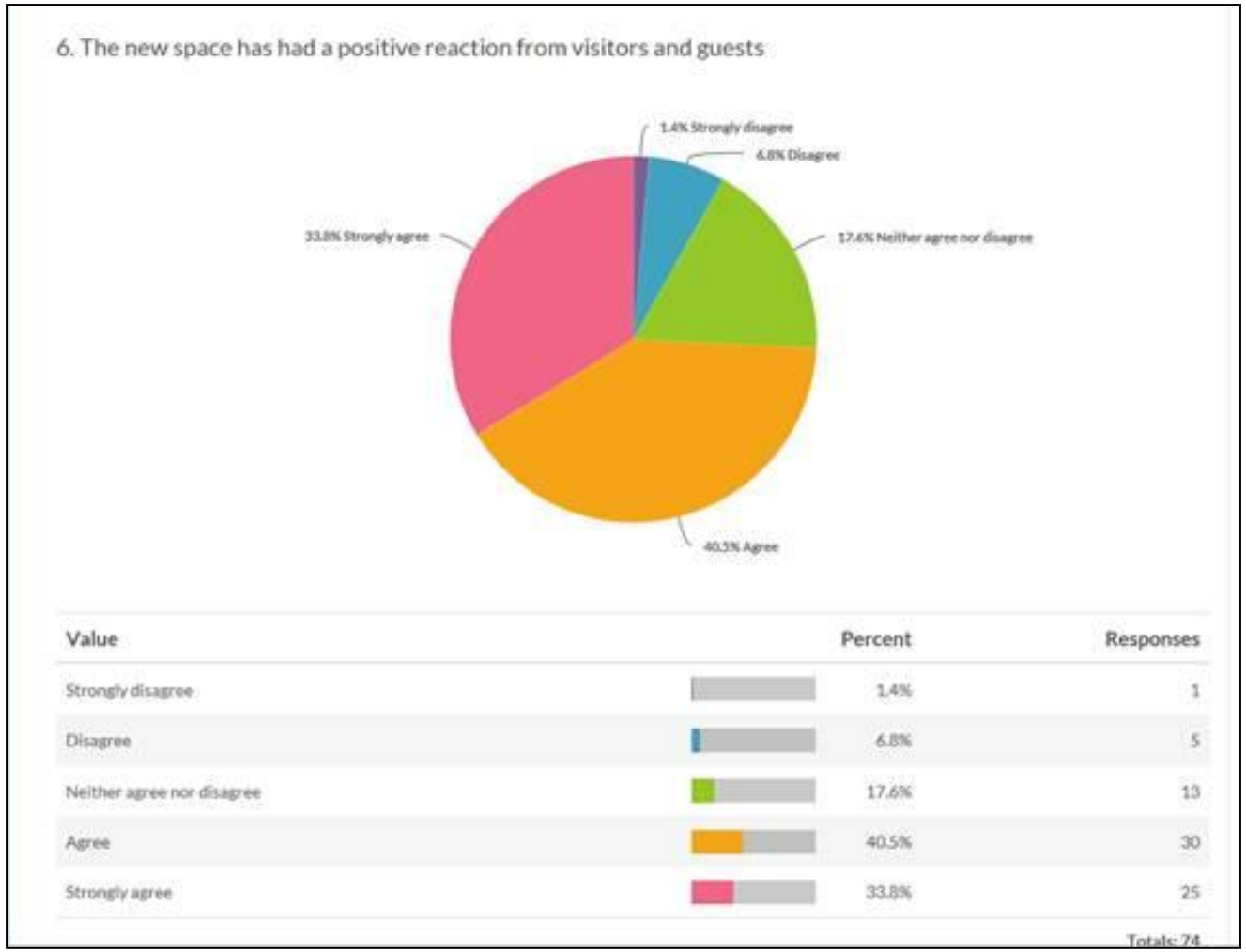
Survey Results – Neighborhoods

2. The space provides a variety of space (individual, small groups, large groups) for both professional and social interaction



Value	Percent	Responses
Strongly disagree	1.4%	1
Disagree	4.1%	3
Neither agree nor disagree	6.8%	5
Agree	54.1%	40
Strongly agree	33.8%	25
	Totals: 74	

Survey Results – Visitor + Guest Reactions



Value	Percent	Responses
Strongly disagree	1.4%	1
Disagree	6.8%	5
Neither agree nor disagree	17.6%	13
Agree	40.5%	30
Strongly agree	33.8%	25

Totals: 74

Lessons Learned

- Better orientation/standardization on the collaborative technologies made available as a part of the project
- Better workplace etiquette training and awareness/”policing” as a part of “Day 2” activities
- Need better manager preparation/coaching ahead of move activities
- Better balance of “flex” workstations in each functional area
- Include more “focus areas” / “quiet zones”

Questions?

Thank You

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