Cost-justifying investment in integrated interior solutions

The following OfficeLook results have been translated into reasonable estimates of business impact. This provides demonstrated value to customers for their strategic investment in Haworth interiors solutions. The basis of this approach applies an ROI framework to OfficeLook results.

The actual OfficeLook data was collected from a real client's new (2005) integrated Haworth interiors solution. The renovated space featuring a Tec Crete 12" raised access floor with HVAC and other modular interior construction elements (also sound masking, new chairs, adjustable task lighting, and new team workspaces), following are the calculations.

ASSUMPTIONS:

1) Productivity reflects the cost of salaries and benefits for knowledge workers (since this represents a company's direct investment in office productivity)
2) Improving office workers' ability to organize their work increases effectiveness 5%
3) Improving office workers' ability to concentrate increases effectiveness 2.5%
4) Decreasing the auditory distractions to which office workers are exposed increases effectiveness 2.5%
5) Improving the ability of office workers to schedule a room when needed for group/team meetings increases effectiveness 5%
6) Improving office workers' thermal conditions increases job satisfaction 10%
7) Improving job satisfaction returns productivity benefits of 10%; if job satisfaction improves 10 points (arbitrary scale units), productivity will increase 1 point
8) Improving job satisfaction decreases turnover 5%
9) Improving job satisfaction decreases absenteeism 5%

(these assumptions are EXTREMELY CONSERVATIVE estimates)

APPROACH/METHOD:

Using z-scores (transforming raw scores to their standardized equivalents—which provide percentage area under the normal probability density curve), we translated the change in ability to organize work, ability to concentrate on work, auditory distractions, ability to schedule a room for group/team meetings, and thermal conditions into a percentage of change based on the above assumptions—and added these results. Because the effects of ability to concentrate and auditory distractions may overlap, we chose smaller percentage estimates for them; however, because research suggests that space has a greater impact at the group level, we chose 5% for improvement in ability to schedule a room for group/team meetings when needed.

GIVENS:

500 workers paid $50,000 (salary + benefits) = 25 million dollars
500 x $9,000 (per-employee cost of turnover) = $4,500,000 (based on AIA's 2005 Report on University Research)
500 x $756 (per-employee cost of absenteeism) = $378,000 (ibid.)

Calculations based on EMPIRICAL RESULTS from OfficeLook for Enterprise's Fleet Operations pre/post-occupancy evaluation:

17% improvement in ability to organize work = 25 million x (.17 x .05) = $212,500
15% improvement in ability to concentrate on work = 25 million x (.15 x .025) = $93,750
16% improvement in auditory distractions = 25 million x (.16 x .025) = $100,000
31% improvement in ability to schedule a room for group/team meetings = 25 million x (.31 x .05) = $387,500
27% improvement in thermal conditions = 25 million x (.27 x .10 x .10) = $67,500 (direct productivity benefit of improving thermal conditions)
27% improvement in thermal conditions = $4,500,000 x (.27 x .10 x .05) = $6,075 (indirect productivity benefit in terms of reduced turnover from improving thermal conditions)
27% improvement in thermal conditions = $378,000 x (.27 x .10 x .05) = $510.30 (indirect productivity benefit in terms of reduced absenteeism from improving thermal conditions)

Total improvement in effectiveness for 500 workers of moving to augmented modular interior construction = $867,835.30
A 5-million-dollar initial investment (estimated) would pay for itself in less than 6 years with improved human and organizational performance
(Assumed initial investment of $10,000 per worker)

If we CHANGE our ASSUMPTIONS slightly (and I believe these are still CONSERVATIVE estimates):

1) Productivity reflects the cost of salaries and benefits for knowledge workers (since this represents a company's direct investment in office productivity)
2) Improving office workers' ability to organize their work increases effectiveness by 10%
3) Improving office workers' ability to concentrate increases effectiveness by 5%
4) Decreasing the auditory distractions to which office workers are exposed increases effectiveness by 5%
5) Improving the ability of office workers to schedule a room when needed for group/team meetings increases effectiveness by 10%

6) Improving office workers' thermal conditions increases job satisfaction by 10%
7) Improving job satisfaction returns productivity benefits of 10%; thus, if job satisfaction improves 10 points (arbitrary scale units), productivity will increase 1 point
8) Improving job satisfaction decreases turnover by 10%
9) Improving job satisfaction decreases absenteeism by 10%

The results are as follows: $425,000 + $187,500 + $200,000 + $775,000 + $67,500 + $12,150 + $1020.60 = $1,668,170.60, for a payback period of just under 3 years.

None of these calculations includes any short-term (real estate; energy) savings or any long-term impact (sustainability) savings. They provide only the direct and indirect benefits in terms of human and organizational performance.

Of course, one could drastically change these outcomes even with slight changes to the assumptions (as well as by changing the amount of the initial investment). These calculations are believed to be derived from conservative assumptions and an inflated estimate in both sets of calculations outlined here.

Jay L. Brand, Ph.D.
Cognitive Psychologist

"Occupant-centered design--it's time."