ISSA Value of Clean Context Information

Why Calculate the Value of Clean?

The value of proper cleaning stretches well beyond that of mere appearance. It is an investment in human health, the environment and an improved bottom line. However, few facility decision makers may recognize the full potential cleaning offers in these areas. Even if they do, they may lack the tools to quantify and communicate that value to upper management.

This new tool, available through ISSA members, can help calculate value based on a mix of results from currently reported studies, as well as customers' internal data.

The desired outcome is a quantifiable value proposition that can easily be communicated to upper-level facility decision makers to help them appreciate the role cleaning plays in protecting occupants, increasing productivity and improving their bottom line. By charting these often unrealized savings, cleaning can be seen as the investment it truly is.

This document acts as a resource of valuable information; however, some organizations may not calculate all of the metrics included in this document. If an organization doesn't currently have the data required to calculate some of the following metrics, this guide can provide insight into what must be gathered to begin tracking these unrealized areas of value.

Section 1: Work Ticket Resolution

Poor cleaning, specifying the wrong tasks or insufficient frequencies results in numerous corrective service requests. Proper cleaning produces fewer requests. Since each request involves a real and substantial cost, an investment in cleaning can directly reduce work-ticket-related operating costs.

The Cost per Work Ticket (CPT) is a very effective metric to "dollarize" the impact that an investment in cleaning can have. CPT is the total annual operating expense of handling work tickets, divided by the annual number of tickets handled. Operating expense includes all employee salaries, overtime pay, benefits, incentive compensation, time, and miscellaneous expenses required to address complaints about cleaning.

The cost to process an invoice is a useful benchmark for work ticket resolution costs. According to estimates by the Institute for Supply Management (ISM), the Aberdeen Group and the Profit Planning Group invoice processing costs may range anywhere from $13-49 per ticket. To calculate this number, include the cost of labor and multiple steps in order processing, order placement, management approval and vendor interaction.

If managing an internal operation, the cost of resolving an issue likely will include: cost to receive added work requests resulting from insufficient cleaning, time/cost to create a ticket, time/cost to schedule rework or remediate the situation, time/cost to complete the added task, time/cost to assess the rework to ensure satisfaction and time/cost to communicate completion to the occupant originating the request.

An average CPT can be developed using the average of all work tickets over a representative period of time. It also can be segmented into specific work ticket activities for more detailed analysis of improvement when investing in a certain cleaning function, increased frequency in a specific facility area type, or changes in cleaning tactics.

Section 2: Absenteeism

Cleaning fundamentally works to remove elements in a building that negatively impact human health. Proper cleaning positively impacts occupant health, improving the bottom line of the organization. The most direct correlation of this health impact that can be calculated is that of reduced absenteeism due to illness. That is because proper cleaning and frequencies can reduce the risk of cross-contamination (the spreading of germs and bacteria between people, from touching food, tools, equipment and surfaces).

A study published in the *Journal of Occupational Environmental Medicine* in 2003 reported that, based on a random sample of 28,902 U.S. workers, health-related lost productive time (LPT) costs employers $225.8 billion per year, or $1,685 per employee per year.[1]

The report goes further to state that LPT specifically for a personal health reason, which is calculated as the sum of hours per week absent from work for a health-related reason ("absenteeism") totals $1,320 per employee per year. Cost impact is estimated by multiplying lost productive time (absence hours plus hours lost from reduced performance) by the individual worker's hourly labor cost. This is the recommended method of calculating a basic impact regarding absenteeism and cost to the organization.

Hidden Costs

A 2008 survey conducted by Mercer/Marsh identified that if an organization must hire temporary labor, or offer overtime to cover the gap in operations, this cost also should be factored into absenteeism calculations.[2] To do so, multiply that additional hourly cost by the number of hours incurred and add it to the absent employee's direct costs.

The survey also revealed that employers may not account for the 36 percent in administrative expenses that it takes to manage absence benefits. This includes tracking, reviewing and processing the absence by company staff. Once that cost is determined, often as an annual percentage, it can be evenly divided by the total number of employees to determine the average per employee. It then is added to the average direct and indirect labor costs above, per employee.

Still more impact was revealed by the Mercer/Marsh survey: the disruption in the labor supply will affect productivity, even with replacement staff. This could lead to lost sales, late delivery of goods/services, customer dissatisfaction and loss of revenue. Respondents to the survey reported that unplanned absences caused a 54 percent decrease in productivity/output and a 39 percent drop in sales/customer service. If an organization can estimate these additional costs, the annual average cost of lost revenue per employee then would be added.

The Cleaning Connection
It is advised to calculate the LPT for an equal period of time prior to and following increased investment in cleaning, to directly indicate cleaning's reduction impact on LPT related to absenteeism. Specifically calculate this comparison
using similar time periods during which worker absenteeism typically rises within an organization for a more accurate correlation.

For more resources specifically related to the impact of proper cleaning on reducing cross-contamination visit www.issa.com/pandemic for the ISSA Pandemic Kit.

1. *"Lost productive work time costs from health conditions in the United States: results from the American Productivity Audit" Stewart, W.F., Ricci, J. A., Chee, E., Morganstein, D, Journal of Occupational Environmental Medicine 45.12 (2003): 1234-46.*
2. *"The Total Financial Impact of Employee Absences Survey Highlights" Kronos Consulting & Mercer, LLC. October 2008.*

Section 3: Productivity

Many organizations track the financial impact of absenteeism, the sum of hours per week absent from work for a health-related reason. Another way to calculate cleaning value is that of its impact when employees are at work.

Overall Impact of Cleanliness
In a study of 400 managers and employees conducted by HLW International LLP, employees' productivity levels were heavily influenced by the cleanliness of the office in which they worked.[1] More importantly, productivity of employees was not the only area impacted; employers who found it difficult for recruiting new, prospective employees also were affected.

The study found that cleaning has a very real and measurable value, specifically reporting a five-percent productivity gain ($125,000) in a 100-associate office with an average salary of $25,000. The study provides a formula that can be used to calculate a minimum productivity savings for an organization:

_____	X	_____	X	5%	=	_____
Building Population		Average Salary		% Savings		Value of Cleanliness

A Minnesota Health Department report regarding the impact of cleanliness and student performance in educational facilities also supports the theory that the average productivity impact of proper cleaning can range from 2-8 percent.

The report cites two separate office-environment studies that found good housekeeping protocols that thoroughly removed dust from surfaces were found to have both health and comfort benefits.[2] In the first study, building occupants experienced mild symptoms of distress or discomfort (dry eyes, itchy or watery eyes, dry throat, lethargy, headaches, chest tightness), they began to perceive a loss in performance ranging from 3-8 percent, depending on the number of symptoms. In the second study, exposure to a

reservoir of dust (an old carpet) affected subjects' typing, arithmetic, logical, reasoning, memory and creative thinking skills by 2-6 percent.

If an organization is able to calculate a greater percentage of savings attributed to cleaning than that found in the HLW study, it can be inserted in the ISSA Value of Clean Calculator for a more precise organizational value estimate.

Presenteeism

In addition to day-to-day impact of proper cleaning on occupant productivity, "presenteeism" is another factor to consider, defined as the impact of an employee working while sick. This state of decreased productivity can be tied back to the impact cleaning has on reduced cross-contamination, and then factored into overall productivity rates, using averages estimated through independent research if an organization has not calculated this phenomenon themselves.

Off-task workers cost businesses an average of $250 billion a year, or approximately $2,000 per worker, according to a 10-month survey of more than 25,000 individuals conducted by AdvancePCS.[3] The estimates were derived from their salaries and estimates of time spent at work engaged in reduced on-the-job performance because of illness. Cost impact was estimated by multiplying lost productive time (absence hours plus hours lost from reduced performance) by the individual worker's hourly labor cost.

1. *BUILDINGS , November 1, 1999 V93 No. 11.*
2. *"Cleaning, Indoor Environmental Quality and Health: A Review of the Scientific Literature" Tranter, Minnesota Department of Health, August 2008.*
3. *"Presenteeism: Employees Working at Diminished Capacity Cost Employers $250 Billion Per Year" The Bureau of Labor Statistics, Volume: 53, Number: 49. December 5, 2002.*

Section 4: Image Enhancement

Clean and sanitary environments have a positive impact on revenue. This section of the ISSA Value of Clean Calculator allows users to input a value that they believe a better image has for their facility.

The most likely information to use to calculate this value for an organization is customer satisfaction or importance placed on cleanliness. For example, cleanliness tied with food taste as the two most important attributes in choosing a restaurant, according to surveys of 13,000 restaurant consumers by Technomic, a leading foodservice research firm.[1]

In a survey conducted by the International Facility Management Association (IFMA), facility managers were asked which areas of their buildings they felt had the greatest potential to impact someone's impression of their facility. They identified the top two areas were lobby/entrance (42 percent) and restrooms (25 percent).[2]

In the same IFMA survey, respondents indicated that the number one aspect of a restroom that their customers and visitors are more apt to notice and complain about was cleanliness (44 percent).

An Image Level Scale can be created to determine at what level of cleanliness at which customers perceive the organization in a positive light. This becomes the Desired Image Level within the ISSA Value of Clean Calculator. Next is to determine what level the facility currently is rated by customers – the Current Image Level.

Once an organization has determined either industry benchmarks or internal customer importance levels given to cleanliness, it can quantify the cost of losing that customer due to dissatisfaction. For instance, if 1 in 4 customers place a high value on cleanliness, what is the value to the organization of that 25 percent of customers, and what would it cost if their satisfaction was reduced? That becomes the Annual Value of Image Enhancement to enter into the ISSA Value of Clean Calculator.

1. *Business Wire, May 21, 2011.*
2. *International Facility Management Association Restroom Design Study, March 2004.*

Section 5: Asset Preservation

It is widely acknowledged that planned maintenance extends an asset's usable life. This is particularly true of commercial carpeting where studies have proven that properly maintained carpets have an extended appearance and durability as much as three times that of carpets that have unplanned or low frequencies of cleaning.

In fact, the U.S. Green Building Council's Leadership in Energy and Environmental Design for Existing Building: Operations & Maintenance (LEED- EBOM) requires a carpet maintenance plan due to the increased sustainability and lower impact on the environment when carpets take longer to be replaced.

This section of the ISSA Value of Clean Calculator enables the user to establish a return on investment for a carpet maintenance plan. To determine whether an existing maintenance program is maximizing the life of an organization's carpets, you can refer to the Carpet and Rug Institute's (CRI) *Carpet Maintenance Guidelines for Commercial Applications* document as well as the specific carpet manufacturer's recommended maintenance recommendations.

CRI describes carpet as having five levels of appearance: new, good, fair, poor and unacceptable (replacement needed). If a carpet's use-life is at least 10 years, having a good maintenance plan can lead to a carpet's appearance level as still being "good" in ten years. An unplanned maintenance program can result in a carpet's appearance level dropping to fair in 3-4 years, poor in 4-5 years, and replacement in 6-7 years. With neglected maintenance, new carpet can go from new to poor in as little as 1-3 years before replacement is necessary.[1]

Once recommended improvements are determined and the average years those steps can extend the life of the carpet, enter the data into the ISSA Value of Clean Calculator. The calculator then will provide the annual and long-term savings gained by that improved cleaning investment.

In addition to the lifecycle savings of properly maintaining a carpet, there also are secondary lifecycle cost benefits an organization will receive. According to a *Housekeeping Solutions* article, soil that is not removed from carpets recirculates throughout the building's HVAC system.[1] This causes unnecessary soil and dust to shorten the life cycle of filters (increasing filter costs), increases levels of dust on furnishings and surfaces (increasing labor costs) and increases the discomfort of building occupants that can lead to allergies and possibly illness (lost productivity). The result can be decreased effectiveness of HVAC systems, thus increasing heating and cooling costs. Sensitive systems such as computers, central processing units and mass media storage devices also can malfunction or need faster replacement due to excessive dust exposure.

1. *"How to Extend the Life of a Carpet" Carpet and Rug Institute, Housekeeping Channel.com, June 2011.*
2. *"Carpet Care: Penny Wise, Pound Foolish" Bigger, Housekeeping Solutions, May 2011.*

Section 6: Energy Savings

While there are a variety of approaches to workloading the cleaning of a facility, including the time of day it is completed, daytime cleaning provides an additional value calculation for energy-conscious customers. Every hour of cleaning that is moved from evening hours to daytime reduces the use of energy during off-business hours.

In most cases, the increased cost of delivering cleaning services during the day is more than offset by energy savings. The result is a net cost reduction to the facility.

In order to estimate the savings, customers need to do a basic overview of energy costs. The starting point is to understand how electricity is measured. Electricity is measured by the kilowatt-hour (kWh). When a customer uses 1000 watts for 1 hour, that is a kilowatt-hour. The most recent utility bill will provide an organization's cost per kWh. Alternatively, there are a number of websites that provide cost ranges by geographic region. One such link is: http://www.eia.gov/cneaf/electricity/epm/table5_6_a.html

If an organization has installed occupancy sensors to further manage lighting, based on when rooms are in use, they also can add the estimated percentage of savings derived from these sensors into the calculator.