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Getting started

Becoming a quantified organization

January 2024



Climate change and sustainability

Reducing carbon footprint of processes, people, and ecosystems

In recent years, many organizations have begun making ambitious, long-term commitments to lower emissions and improve the overall sustainability of their operations. However, climate support goals and the progress against those goals needs to be quantifiable. Organizations can utilize existing and emerging sources of passively generated work data, in combination with traditional data sources, to support these efforts.

These efforts to reduce emissions are illustrative of the ways in which passive work data can be used to create shared value for multiple stakeholders. For instance, optimizing the use of physical space - and reducing unnecessary power consumption - can lower an organization's carbon footprint while also reducing the costs of operating facilities. In some cases, these kinds of analyses of emissions can be provided to workers themselves to engage them in sustainability efforts. According to Deloitte's report, *Economic uncertainty puts pressure on sustainable behavior change*, nearly one in every two workers surveyed globally, cite improved morale as a key benefit of their company's focus on sustainability efforts.¹

By leveraging these advances, organizations have an opportunity to create shared value for society by reducing the carbon footprint and impact of businesses on the environment.



Installing smart systems while creating a differentiated workplace experience

Representative data sources

- Occupancy data
- Worker calendars

Representative technology areas

- Activity sensors and connected devices

Shared value creation

Individual level

- Differentiated workplace experience
- Improved affinity to a sustainable brand

Team level

- Improved collaboration and knowledge sharing

Enterprise level

- Reduced energy consumption
- Savings in utility costs
- Enhanced brand reputation

Society Level

- Sustainable business operations

Use case maturity

Exploratory	Emerging	Maturing
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Key challenge²

A real estate development company was keen to develop an office space incorporating sustainability and technological innovations in the facility while delivering a personalized workplace experience for workers.



Solution and approach

The company installed nearly 30,000 sensors within the office building to detect motion, light, temperature, and humidity. These multiple readings related to occupancy and usage were aggregated on a centralized dashboard that was updated in real-time through connected systems. If fewer professionals arrive on any day, the company can shut down an entire section to save costs and efforts of cleaning, lighting, cooling, and heating, thereby reducing their carbon footprint and associated costs.

Activity sensors also enabled smart cleaning systems involving both human janitors and robots to clean areas (workstations, meeting rooms, and more) based on actual usage assessed through occupancy and temperature sensors. Furthermore, solar panels installed on the building generated more energy than the building consumed.

In addition to driving sustainable operations, smart systems also supported workers. An app can check a worker's calendar and schedule, direct their car to an available parking spot, and reserve a desk for them. It can also adjust the light and temperature settings of select areas in the office based on worker's preference.



Impact

These innovations enabled the office building to meet its climate change goals without compromising the workplace experience. Workers were very appreciative of assistive technology related to parking, desk booking, and personalized light and temperature settings. The building redesign enhanced collaboration among workers through an open layout conducive to chance interactions.

Helping workers measure their work-related carbon footprint

Representative data sources

- Business travel data from travel reservation systems

Representative technology areas

- Process automation

Shared value creation

Individual level

- Reduced carbon footprint
- Improved affinity to a sustainable brand

Enterprise level

- Reduced food wastage
- Progress against sustainability targets

Society Level

- Sustainable business operations

Use case maturity

Exploratory	Emerging	Maturing
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Key challenge³

A technology company had set a goal of reaching net-zero emissions across their value chain by 2030 and was looking for ways to measure and reduce its scope 3 emissions. Scope 3 emissions are generated across the company's supply chain and are typically difficult to track but can also be the largest category of emissions. Scope 3 emissions result from activities or assets not owned or controlled by the organization but are generated during the course of business throughout the value chain.

The company wanted to empower their workers to understand and participate in the work that is required to reduce scope 3 emissions across their business.



Solution and approach

As a pilot, the company worked with a vendor to track emissions from activities such as business travel, including air travel, ground transportation and hotels. The platform also analyzed the food that the company was purchasing for their workers through suppliers and the associated waste.

The platform provided recommendations for workers' commute, and the energy consumption in remote and hybrid work. These recommendations could be customized at a functional level (i.e., engineering, finance, procurement, marketing, human resources, and event management) depending on team needs.

The company, built consensus and support with their workforce in this effort by identifying and connecting with key influencers within the organization who socialized this effort with other workers.



Impact

The solution was offered to workers who opted in. With this solution, the company was able to measure their scope 3 emissions and regularly nudge their workers about responsible climate choices and behaviors.

Assessing and offsetting emissions related to remote and hybrid operations

Representative data sources

- Workers' usage of utilities
- Worker surveys

Representative technology areas

- Process automation (carbon emissions calculation models)

Shared value creation

Individual level

- Personalized recommendations for energy savings

Enterprise level

- Improved visibility about emissions across the value chain
- Progress against sustainability targets
- Broad-based climate literacy among the workforce

Society Level

- Sustainable business operations

Use case maturity

Exploratory	Emerging	Maturing
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Key challenge⁴

An investment management company planned to reduce its emissions from energy usage by 50% by 2030. As they transitioned to a remote work model during the pandemic, reduction in air travel brought the company's emissions down drastically. However, relying on emissions reductions resulting from curtailed air travel wasn't going to be enough to meet the climate goals.

An analysis of sources of emissions revealed that workers working from home generated 55% of the company's total carbon footprint. The company wanted better visibility of emissions generated as a result of working from home so that they could offset the same.



Solution and approach

The company worked with a vendor specializing in carbon footprint estimations. The vendor provided an app that interested workers could sign up for. The application would ask workers questions about their energy usage at home. Workers could also upload their water, heating, or electricity bills on the application. This data was not shared with the employer.

Based on the utility usage data, the application would calculate an aggregated carbon emissions score that was shared with the company. The higher the number of workers participating in the program, the higher the accuracy of the score calculated by the algorithm would be.



Impact

Based on the responses workers provided, the application gave personalized recommendations (such as turning down the thermostat and switching to plant-based meals among others) to nudge workers to adopt conscious choices and responsible behaviors.

Seeing the benefits of broad-based climate literacy among the workforce, the company continued to leverage this program to assess their carbon footprint as they transitioned from a remote to a hybrid work model.

Deploying use-based cleaning for more sustainable operations

Representative data sources

- Worker occupancy data

Representative technology areas

- Activity sensors and connected devices (occupancy sensors)

Shared value creation

Enterprise level

- Cost savings

Society level

- Sustainable cleaning practices

Use case maturity

Exploratory	Emerging	Maturing
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Key challenge⁵

A bank employing about 83,000 professionals was looking for ways to make their cleaning operations more sustainable in support of their ESG goals. To do so, the bank wanted to enhance the functionality of their Computer Aided Facility Management (CAFM) system – a software solution that helps organizations manage their physical spaces and assets.



Solution and approach

The bank integrated occupancy sensors in their CAFM system to understand real-time usage of their office spaces and identify areas that aren't frequently being used by workers. Based on insights related to actual space utilization, the bank switched to use-based cleaning routines, thereby lowering their cleaning frequency by 33%.



Impact

After implementing these changes, the bank was able to reduce their cleaning costs by 50%, thereby saving \$2 million annually.

Endnotes

- 1 Leon Pieters, James Cascone, Derek Pankratz, and David R. Novak, [Economic uncertainty puts pressure on sustainable behavior change](#), Deloitte, July 25 2023.
- 2 Tom Randall, [The Smartest Building in the World](#), Bloomberg, September 23 2015.
- 3 Matthew Parsons, Climate Impact Moves From Marketing to Operations, Skift, January 10 2023 ; [Finally, a platform for companies to track and cut emissions](#), Meetings & Conventions Asia, October 7 2022.
- 4 Margaret Taylor, [Your company needs to go carbon neutral. Its next target is your dodgy boiler](#), Wired, 2021.
- 5 [Global bank leverages occupancy intelligence to save \\$2M annually by automating cleaning workflows](#), Vergesense.



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