



Campbell Institute Member-only Benchmarking Meeting

EXECUTIVE SUMMARIES

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Supporting EHS within Contractor Workforce

Efren Blackledge, ISN

Efren explained that ISN conducted a survey of their client organizations that hire contractors. The reasons to conduct a contractor management strategy survey are many: to streamline operations, manage risk, focus on core competencies, and establish priorities. Work outsourcing continues to grow, with most contractor hiring organizations contracting out 40-100 percent of their work hours. Additionally, 42 percent of organizations surveyed plan to increase their outsourcing in the next 12-18 months.

The survey consisted of 17 questions, to which 161 organizations responded. Overall, 18 industries were represented in the survey, from oil and gas and manufacturing to pharmaceuticals. The participating organizations collectively manage over 40,000 contractor companies with over 10 billion work hours.

The survey revealed many insightful findings. Almost half of the surveyed organization reported that over 40 percent of their work is completed by contractors, and 23 percent of organization use over 1,000 contractor companies. In 55 percent of organizations, the HSE group owns the contractor management process. (ISN also found that a higher proportion of leading organizations place contractor management within the HSE group.) The top two challenges for organizations are contractor HSE incidents and the ability to stay within budget.

When it comes to process maturity and contractor management, 57 percent of the surveyed organizations classify themselves as leading or proactive organizations. Seventy seven percent of organizations have a documented strategic plan for contractor management goals (such as setting vision/targets, defining responsibilities of members). About three-fourths of organizations say they have an understanding of the risk for contractor work, but only 8 percent say that those risks are well-managed.

Some of the challenges or threats to the process of contractor management are the shortage of a skilled workforce, the regulatory environment, budget constraints, and lack of management support and commitment. As hiring companies mature, they become more organized and documented in their processes. The lack of internal resources is not as much an issue for them, but the lack of a skilled workforce becomes an ever more present challenge.

The survey revealed that the top risk to hiring organizations is subcontractors' competency and compliance. The top priority among the survey respondents was to improve safety performance of contractors. The top approach for continual improvement was to improve communications and expectations with contractors. There needs to be a well-crafted plan for both external and internal communications.



As noted earlier, leading organizations have a documented plan for contractor management. The survey also showed other attributes of leading organizations, namely that most understand the risk of contractor risk, even if they don't know how to manage the risk well. Eighty eight percent of leading organizations have a connected internal business processes, and 42 percent drive a Safety First culture.

Integration of Emerging Technologies

Ryan Ringelman, BNSF

Ryan began with an overview of BNSF as a company. They have over 1,400 trains and running per day, and 8,000 locomotives on a 30,000-mile production line with over 41,000 employees. BNSF moves one quarter of the nation's freight and has gone 490 days without a fatality – the longest amount of time to date.

Ryan talked about the need to drive technology within BNSF. The first reason is to continually meet customers' expectations of productivity and efficiency. They are also pioneering technology for engagement and training purposes, such as with virtual and augmented reality. Lastly and most importantly, technology is being used to drive safety as a value, and to ingrain safety as a key aspect of the company identity.

The technology implemented helps BNSF engineers manage trains in a standard, consistent, and predictive manner, which provides gains in productivity and safety. Overall train handling performance is improved. An example of this technology is the mechanical detectors for anomalies along miles of railway. The detectors alert engineers to potential hazards in critical corridors: high volume traffic areas and high density population centers, for example. New technological innovations provide a portable, interactive platform for workers to engage with workplace safety information.

There are challenges, however, to developing and implementing technology. For instance, technology is enabling, but it can deemphasize the skills that people already have. Technology should be in place to enhance skills, not to downplay them. Oftentimes companies chase technology because it is considered "cool", but they need to consider if the technology is actually adding value. Lastly, the Code of Federal Regulations tends to be rather proscriptive and does not reflect the technology advances of today. Getting regulators to be more proactive and less "command and control" about technology is another challenge.

Human and Organizational Performance & Culture

Cliff Gibson, Exelon

Cliff spoke to the role of human performance in high reliability organizations, where the stakes for business performance and safety are high. When talking about human performance, we are essentially speaking about the difference between the "fast" and "slow" brain. At Exelon, there are different conceptualizations of human performance for the utilities side of the business versus the energy



generation side. Overall, the goal is to elevate and engage the slow brain to improve human performance and safety. They also emphasize that crews look out for each other and peer coach to use the slow brain.

To understand how human performance impacts organizational culture, Exelon had to unite the different company cultures as a result of absorbing different utility companies over time. They focused on how to keep employees focused on the task and the risk involved. They have instituted extra time for observations and peer coaching, and extra breaks to allow workers to slow down and engage the slow brain.

In measuring culture and human performance, Exelon has worked with DEKRA to gather and analyze metrics. Management reviews focus on culture and human performance, and other metrics related to supervisor training are also included. Traditionally, surveys have worked well, but they needed to look deeply at all layers of the organizations. They conduct cultural surveys at least once a year throughout the entire organization with a 75-80 percent response rate each time. The survey is about 60 questions long and covers HR requirements about staff development and management, and safety and health.

JJ DeGiovanni, United Airlines

JJ outlined the Core 4 focus areas at United Airlines. They are in this order: safe, caring, dependable, and efficient. The values at United are: we fly right, we fly friendly, we fly together, and we fly above and beyond. The focus and values feed into the purpose of United, which is "Connecting people. Uniting the world."

In looking at human performance, United sees the synergy of safety and compliance. The first thing that is needed is a robust and integrated safety management system. There also has to be the desire and mechanisms for continuous learning and improvement. Also important is that the organization is risk-focused and has processes and procedures that are adaptive.

JJ included a table showing how different elements related to safety (injuries/damages, SMS, Line Observation Safety Assessments) merge with the Core 4. Creating this table allows United to see and quantify the hidden impacts to United's operations. For instance, aircraft damages intersects with all of the Core 4 focus areas and has the hidden impacts on the airport/gate, propensity for near miss, fleet in service, and of course cost.

In sum, the integration of the Core 4 focus areas and common values has led to better decisions for safety and operations and more transparency. The key areas of operations, facilities, HR, finance, supply chain, and training all feed into the safety management system and reinforce the safety culture.



Talent Acquisition & Management

Chris Shieldsmith, Cummins

Hiring and retaining talented individuals for the EHS profession is a perennial challenge for organizations. Chris spoke to the three focus areas and activities at Cummins for EHS talent acquisition and management: attract, develop, and retain. To identify and hire top HSE talent, Cummins has a focused effort to identify and address organizational needs and engages in HSE-specific recruiting. On-the-spot offers to qualified individuals makes Cummins a better player in a competitive business environment.

To develop HSE professionals, Cummins grows HSE talent internally by offering mentoring to high-potential candidates. They also have an HSE manufacturing development program (MDP), which is a two-year program with 4-6 month rotations. Special projects in HSE are offered as opportunities for high-potential candidates.

To retain HSE professionals and keep employees engaged, challenged, and fulfilled, Cummins makes sure to show employees growth opportunities within the organization, mapping out where their careers could advance. An internal program called Elevate Manufacturing is designed to show employees that they can have an entire career within a plant (and within HSE), and do not necessarily have to transfer to a desk job or leave for the “real world” in order to have a full career.

Hot Topics

Q: Is it beneficial to have integrated EHS and medical departments?

At Organization A, the safety department has medical support with occupational nurses. At Organization B, there have been similar integrations of departments, such as health and safety with environmental, and having HSE reporting through different functions (technical versus manufacturing).

Q: Are there ideas or thoughts for environmental leading indicators beyond the governmental requirements?

One suggestion is to look at LEED criteria for ideas of environmental leading indicators. Organization C tracks the amount of energy conservation and waste to landfill, with zero waste being the goal. Organization D goes beyond safety and health observations to do environmental observations, such as a chemical that is being stored outside a contained area. They also look at preventive maintenance for equipment that is specific to environmental (e.g dust collectors).

Q: How have companies dealt with prescription medication guidelines that differ from country to country?

Organization E said that applying different standards from country to country can lead to bad data and practices. The goal should be to normalize data by using only one standard. Organization C developed its own global criteria for prescription medications that is based on OSHA guidelines.



Q: How many full-time safety employees are necessary by overall headcount?

Organization F typically uses the ratio of one safety professional for fifty employees. From their anecdotal experience, this is a good ratio for their industry, but perhaps not for higher risk industries. They have rotating safety scouts positions that makes everyone responsible for safety. Ingredient said that there are some regulatory requirements in some countries for the number of safety professionals.

At Organization D, the ratio is typically one to 100. At Organization G, overall the ratio is about one to 40, but it is one to 70 for the mining business. At Organization H, the numbers and ratios for safety people are sometimes built into union contracts. Lower risk functional areas have fewer safety people. Having safety champions (who aren't officially safety professionals) can make up the difference. Organization J has a ratio of one safety professional to 800 or 1000 employees. This is because the responsibility for safety is diffused throughout the organization.

Q: What are companies doing regarding employee mental health and wellbeing?

Organization K has a mindfulness program at a California site, and is looking at the effects of stress in the workplace at some Australian locations. Organization G mentioned that while they score high on physical safety, they need to look at on-the-job and off-the-job stressors and bullying. They're trying to break down the stigma behind stressors and make employees feel comfortable bringing forward issues for discussion with supervisors. Organization J has rolled out mindfulness training at some locations, which has seen more success and acceptance at some sites.

Q: What are companies doing regarding artificial intelligence and machine learning in analytics?

Organization L is using big data analytics to look at qualitative textual data to understand incidents and reports. A data scientist has joined the EHS team to build dashboards and apply a different thought process. Organization M collects mostly leading indicator data from their contractors, which they correlate with lagging indicators like incident rate. Organization N has done modeling on 14 key variables and found that some were highly correlated with ramp injuries. This has led to targeted and concise messaging to shift supervisors.

Data Visualization

JJ DeGiovanni, United Airlines

Jared Pasparage, United Airlines

When United Airlines started their data visualization project, they wanted to effectively analyze big data and get intuitive knowledge that they could communicate globally. They looked to a data analysis project from the University of New Haven, which analyzed data on crime in municipalities. This translated well to the airline safety, because crime incidents are essentially events that you don't want to occur and want to prevent – much like safety incidents.

United started the data visualization project to change the way they were looking at data and to better communicate information across boundaries. Using off-the-shelf commercial software, they were able to provide 24/7 access to the tool in multiple languages. This has allowed them to make better decisions regarding operations and safety at all levels.



There are several ways in which data is collected at United. Letters of Investigation (LOI) are risk-ranked and coded to have corrective actions applied. Line Observation Safety Assessments (LOSA) are peer-to-peer reviews and audits of an operation. All LOSA observations are risk-ranked and coded to be entered into a database. In the Safety Action Program (SAP), any employee can submit a safety action, which is then risk-ranked and coded before going into the database. These three examples are ways of standardizing and aligning data before going into the data warehouse. The database is the basis for the data visualization overlay, where you can view trends and daily/weekly/monthly reports, and conduct statistical analyses.

The types of injury data that can be viewed and analyzed are numerous: how much each airline gate costs in terms of injury, the number and type of each injury by specific location, the number and type of injury by type of employee (above or below wing), the part of body affected. In terms of aircraft damage, one can see the source of aircraft damage, the location of the damage, the type of aircraft, and if the damage was found on arrival.

In terms of the safety management system, the data visualization means that events can be analyzed by location, division, and report type. They can track risk by quarter and identify the primary causes of events, such as failure to follow procedures, complacency, or lack of oversight/enforcement.

The characteristics of the software design – a consistent layout, complete interactivity, tailored messaging – have led to several success stories within the business. They have been able to increase jet bridge reliability and reduce the number of shoulder injuries due to baggage handling and lifting. In the catering part of the business, they have been able to reduce the number of food preparation injuries. Overall, the data visualization system has led to better decisions being made regarding safety, more integrated data, improved transparency, and more organizational alignment.

Open Mic Session

Q: What have other companies found for a data analytics solution/service?

It depends what you would like the system to do. It's best to start with a needs assessment and know what you would like the data to tell you. There are several questions that a company should ask itself when looking for a data analytics solution: Who is going to enter the data, and where? How do you get the organization to embrace the tool? How will the data be visualized? How user-friendly is it to enter the data? Who are the stakeholders that will be affected by the tool, and what will they derive from it?

Q: What are companies doing to combat fatigue in the workplace?

Organization O suggests communicating about fatigue in the form of a safety talk. Equate driving on only a few hours sleep to driving under the influence, for example. Organization L has just completed an organization-wide assessment to see the role that fatigue plays in the workforce. It was suggested to take a look at the American Petroleum Institute's recommended practice 755 on worker fatigue. Organization J has seen great success with its in-vehicle technology to alert to driver fatigue and assess fitness for duty.