Seeing is believing: CCTV perspectives in food manufacturing

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Introduction

The use of closed-circuit television (CCTV) systems in slaughterhouses in England became mandatory to monitor regulatory compliance and verify actions in food manufacture and processing businesses. However, CCTV systems are often misused or used ineffectively, due to a lack of professional knowledge. The authors and ZERO2FIVE Food and Drink Research Unit wish to acknowledge the manufacturer that participated in the study and granted access to on-site footage.

As such, ongoing maintenance of CCTV systems is important to effectively address the business needs. Likewise, an alternative application of CCTV capabilities and environmental awareness practices to the systems such as when production workflow is changed, or the company is reconfigured or production workflows change. Fundamentally, CCTV systems provide a large amount of operational and non-risk data that is well suited to design improvements, for example where a single object is observed.

The authors believe that CCTV systems offer a good return on investment and can be used to inform future training and development, and to maximise return on business investment and support intrinsic business values (both profitability and sustainability).

Purpose

The aim of this exploratory case study was to evaluate CCTV camera positions in a multi-site food and drinks manufacturing and processing business to assess the field of views and highlight potential areas for system refinement.

Methods

One multi-site food and manufacturing and processing business was selected for the observation study.

The company CCTV system was assessed remotely and at audit of all camera positions (as identified on the 19th December 2018) across three sites were reviewed individually to identify 'screen good' markets.

Evaluation of each screen grab still was undertaken to determine purpose to include time data and a detailed in Table 1) in a food manufacturing business assessed the field of view perspective to identify and highlight potential opportunities for improvement.

CCTV camera purpose and positioning

Table 1: CCTV systems installed at each site

<table>
<thead>
<tr>
<th>Site</th>
<th>Purpose</th>
<th>Product/Flow</th>
<th>Observation</th>
<th>Detailed Monitoring</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Safety</td>
<td>Production</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>B</td>
<td>Security</td>
<td>Storage</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>C</td>
<td>Monitoring</td>
<td>Production hall</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Results

Evaluation of 122 fixed CCTV camera positions at three satellite sites (as detailed in Table 1) in a food manufacturing business assessed the field of view perspective to identify and highlight potential opportunities for improvement.

CCTV design, planning and maintenance

The authors believe that CCTV systems offer a good return on investment and can be used to inform future training and development, and to maximise return on business investment and support intrinsic business values (both profitability and sustainability).

Acknowledgements

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References


Significance of study

While not a substitute for management presence in food production, CCTV systems offer multiple operational advantages across large facilities from a single platform. CCTV monitoring is an efficient method to identify training opportunities, workflow changes, productivity improvements, health, safety and food hygiene improvements requiring immediate attention in large sites with multiple production lines.

Clarity on CCTV system installation purpose (i.e. for security, food handler hygiene, process workflows, analysis or detection) should be considered during design to maximise return on business investment and support intrinsic business values (both profitability and sustainability).

Regular CCTV system reviews is practical and essential to identify adaptations, modifications and innovations that may increase system efficiency and reduce footage in relevant and fit for end user purpose.

Installation support by a consultant familiar with food industry requirements would ensure complete advising for novice – over conveyor – camera siting.

Recomendations

Opportunities exist to develop industry guidelines to support CCTV system installation in food manufacturing and processing sites. A risk analysis and threat assessment approach (together with example installation assimilations) would capitalise on existing controls to avoid unnecessary perspectives and duplicity.