The Threat of Ransomware in the Food Supply Chain: A Challenge for Food Defense

Aleksandra Kowalska

Institute of Economics and Finance Maria Curie-Skłodowska University in Lublin, Poland
aleksandra.kowalska@umcs.lublin.pl

Abstract

The food and agricultural sector is one of the critical infrastructural sectors in the global economy. In the agri-food industry, the level of awareness of the need for food defense strategies has accelerated in recent years, in particular, mitigating the threat of ransomware. During the Covid-19 pandemic there were a number of high-profile organized food defense attacks on the agri-food industry using ransomware, leading to imperative questions over the extent of the sector's vulnerability to cyber-attack.

I will present the previously identified cases of ransomware attacks in the agri-food industry that could provide storylines with explanatory power and contextualized understanding. The presentation will cover food defense issues explored through the lens of contemporary ransomware attacks. The case studies approach helps to frame the need for an effective ransomware defense strategy at organizational and sector level.

Food defense strategies have historically focused on extortion and sabotage as threats, but often in terms of physical rather than cyber-related attacks. The globalization, digitalization and integration of food supply chains can increase the level of vulnerability to ransomware. Ransomware is an example of an organized food defense threat that can operationalize both extortion and sabotage, but the perpetrators are remote, non-visible and often anonymous.

Organizations need to adopt an effective food defense strategy that reduces the risk of a ransomware attack and can enable targeted and swift action in the event an incident occurs. Further collaboration between the government and the private sector is needed for the development of effective governance structures addressing the risk of ransomware attacks. The novelty of this study lies in analyzing the issue of ransomware attacks from the perspective of the agri-food sector and food defense strategy. The presentation is of potential interest to academics, policymakers and those working in the agri-food industry from all over the world.

Keywords: food defense, ransomware, extortion, agri-food sector, food supply chain, governance