

Customs Intelligence Strategy Encountering Smuggling Threats in a Changing World

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Abstract

This research analyzes the intelligence strategies employed by the Directorate General of Customs and Excise (DGCE) in Indonesia to combat the evolving landscape of smuggling in the era of Industry 4.0. The study aims to identify and analyze current intelligence practices and subsequently formulate effective strategies for early detection, prevention, and suppression of smuggling activities. Employing a qualitative research methodology, the study utilizes NVivo 14 software to analyze data gathered from relevant sources. The findings reveal a significant increase in the complexity of smuggling operations, characterized by the involvement of transnational organized crime syndicates, sophisticated trade-based money laundering schemes, and the exploitation of electronic commerce (e-commerce) platforms. Despite these challenges, the research indicates that customs intelligence has not been fully maximized as a tool for economic security. Therefore, this study proposes the adoption of a dynamic and adaptive customs intelligence strategy. This strategy encompasses crucial aspects such as strengthening legal frameworks, optimizing organizational structure, enhancing human resource capabilities, and modernizing intelligence facilities and infrastructure. With implementing these recommendations, the DGCE can optimize the role of customs intelligence in safeguarding national economic security and effectively enforcing customs and excise laws in the face of increasingly sophisticated smuggling threats.

Keywords: Customs Intelligence, Economic Intelligence, Smuggling Threat, Industrial Revolution 4.0, National Security.

Introduction

The Industrial Revolution was characterized by significant changes in resource management and technology. Each phase of the revolution, from 1.0 to 4.0, resulted in major impacts on the global economy, society and politics. The 4.0 revolution focuses on the digitization of manufacturing through big data, computing, business intelligence, human-machine interaction, and technologies such as robotics and 3D printing. According to Klaus Schwab, the Industrial Revolution 4.0 is a profound change in the way humans produce, consume, and interact, driven by the integration of the physical, digital, and biological. Its impact extends to the economic, political, and social spheres, with technologies such as AI, IoT, automation, and robotics affecting sectors including customs through physical and technological clusters. New materials such as graphene and polyhexahydrotriasine (PHTs) are not yet classified under the Harmonized System Code, making it difficult to charge import duty rates. Unmanned vehicle (drone)

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technology is also fueling driverless smuggling challenges. These types of cross-border crimes, including *smuggling*, *illicit trade*, *trafficking*, and *customs fraud*, have a significant impact on the global economy (Klaus Schwab, 2020).

According to UNCTAD 2018, these illicit activities lead to the loss of approximately USD 2 trillion per year. Meanwhile, a GFI report revealed that 77.8% of illicit financial flows in developing countries are caused by miss invoicing. The 2019 GFI report estimated that Indonesia lost US\$6.5 billion in potential tax revenue due to *miss invoicing* in 2016. This loss of revenue consisted of US\$3.9 billion from exports and US\$2.6 billion from imports. Meanwhile, *e-commerce* is growing rapidly, estimated to grow from \$300 billion in 2020 to \$1 trillion in 2030. *E-commerce* allows manufacturers to sell directly to end consumers and reduces the role of traditional distribution. The Industrial Revolution 4.0, the COVID-19 pandemic, and the Ukraine war exacerbated the disruption of global supply chains, pressuring customs to speed up processes without compromising security. The Directorate General of Customs (DGCE) has implemented a profile-based risk management system for selective inspection. However, the DGCE's intelligence strategy has not adopted the strategic intelligence approach needed to face the challenges of smuggling in the era of the Industrial Revolution 4.0.

This study was prepared to examine effective and adaptive intelligence strategies in dealing with smuggling threats according to the dynamics of the strategic environment since the Industrial Revolution 4.0 era by integrating intelligence theory with strategic management to answer research questions, namely: how are the threats (factual and potential) of smuggling in the customs sector since the era of the Industrial Revolution 4.0?, how is the evaluation of international customs intelligence strategies compared to Indonesia's current customs intelligence strategy in facing the threat of smuggling?, and how is the formulation of Indonesia's customs intelligence strategy in facing the threat of smuggling in the customs sector since the era of the Industrial Revolution 4.0?.

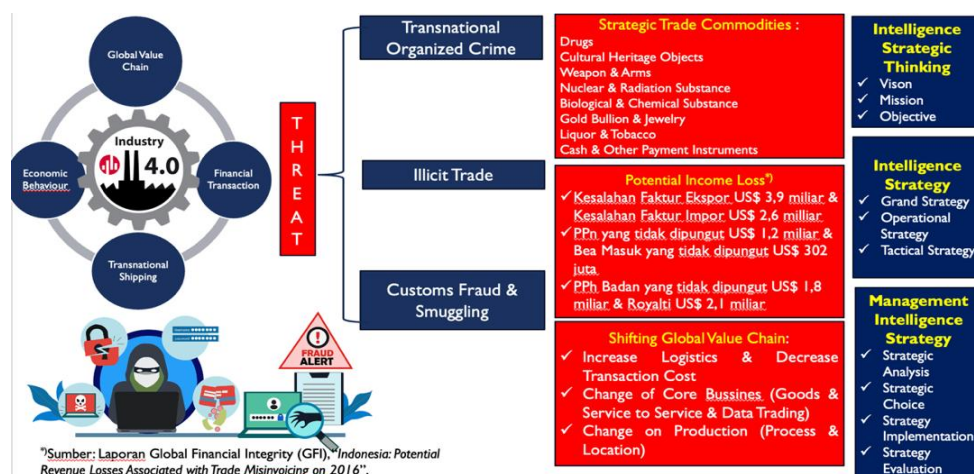


Figure 1 Research Background

Literature Review

Intelligence Strategy Concept

This research integrates strategy theory and intelligence theory to formulate an intelligence strategy through three stages: strategy analysis, choice, and implementation. Strategy, originally a military concept, is now widely applied in various fields. Strategy is a conscious and purposeful plan to achieve specific goals (Mintzberg, et al. 2003). In the business world, there are various types of strategies, such as integration, intensive, diversification, and defensive (Mulyadi 2007). Strategies are also classified by level, ranging from corporate to operational (Porter 1980). Strategic management involves the formulation, implementation, and evaluation of strategies through a comprehensive analysis of the organization's internal and external factors (Yam 2020).

Intelligence theory, according to Hank Prunckun, defines intelligence as process, knowledge, organization, and product (Prunckun 2010). The intelligence cycle includes the stages of information collection, processing, analysis, and dissemination. Intelligence is classified into strategic, operational, and tactical based on its scope and function. Intelligence components include research, counterintelligence, espionage, and covert operations. Intelligence typologies include national security, military, law enforcement, economics, and business, each with different characteristics and objectives.

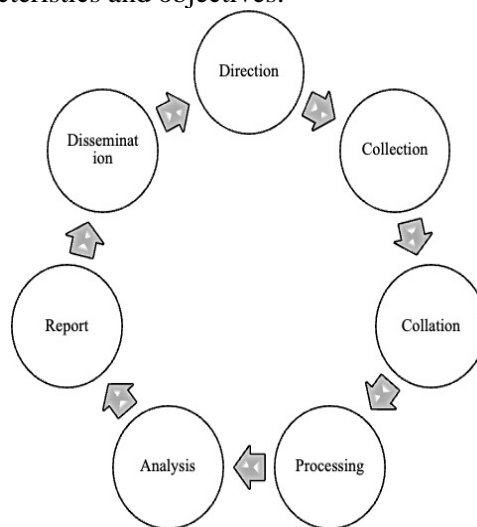


Figure 2 The Intelligence Cycle

Intelligence strategy is an adaptive and competitive systematic approach to achieving intelligence and national security objectives. The characteristics of intelligence strategy include a systematic approach, speed, accuracy, secrecy, adaptability, and utilization of information technology (Gottschalk 2010). There are three types of intelligence strategy: offensive, defensive, and combined (Lowenthal 2011, Betts 2015, Johnson 2010). The levels of intelligence strategy include *grand strategy*, *operational strategy*, and *tactical strategy* (Andrew 2018, Warner 2009, Hulnick 2006). Intelligence strategy management involves strategic analysis, strategic choice, and strategy implementation (Akhgar, Yates and Lockley 2013).



Figure 4 Intelligence Strategy Formulation Framework



Figure 3 Values of Intelligence Strategic Thinking

The World Customs Organization (WCO) published the *Risk Management Compendium* (WCO 2018) which contains *Global Information and Intelligence Strategy* (GIIS) and *National Information and Intelligence Strategy* (NIIS) guidelines for the development of customs intelligence strategies. The NIIS covers aspects such as the legal framework, intelligence functions, use of information, and cooperation. Strategy formulation involves identifying issues, developing a framework, and an action plan. The WCO intelligence strategy framework includes intelligence principles, levels, types, definitions, objectives, products, and implementation. The case study of customs intelligence strategy formulation in Egypt (USAID 2006) shows the importance of an efficient intelligence structure, vision and mission, organizational culture, objectives, and international cooperation.

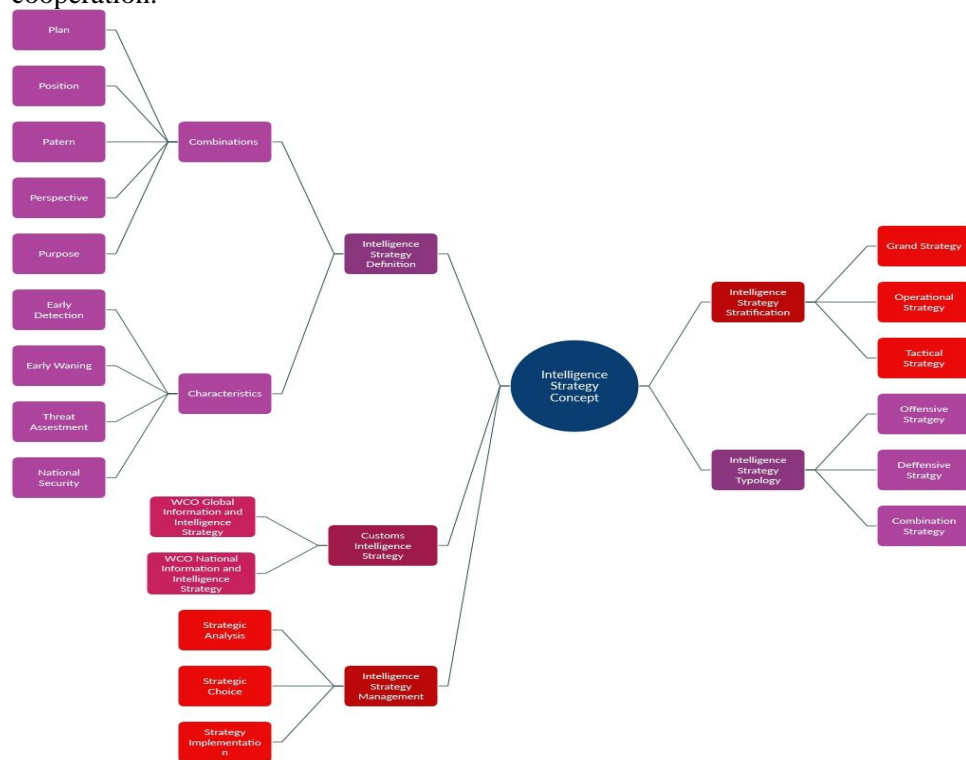


Figure 5 Intelligence Strategy Concept

Smuggling Threat Concept

Threats involve an agent and a threat object, analyzed based on the agent's intentions and capabilities. Threat classifications according to Robert Ring include minor, moderate, serious, and critical. Threats consist of factual and potential, as well as military, non-military, and hybrid.

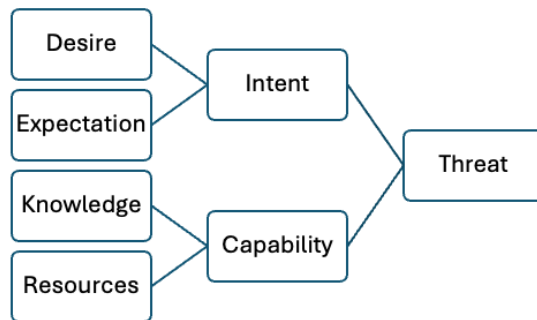


Figure 6 Threat Theory

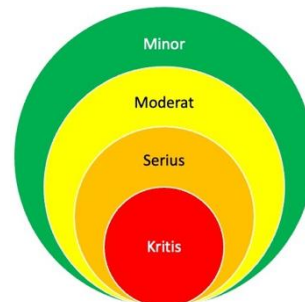


Figure 7 Threat Stratification Theory

Smuggling is the illegal movement of goods across national borders (Gallien and Weigand 2002). There are two types of *smuggling*: *outright smuggling* and *technical smuggling*. *Customs fraud*, such as *misclassification* and *mis invoicing*, is also addressed in this study. Meanwhile, the Customs Law categorizes smuggling into two types: import and export.

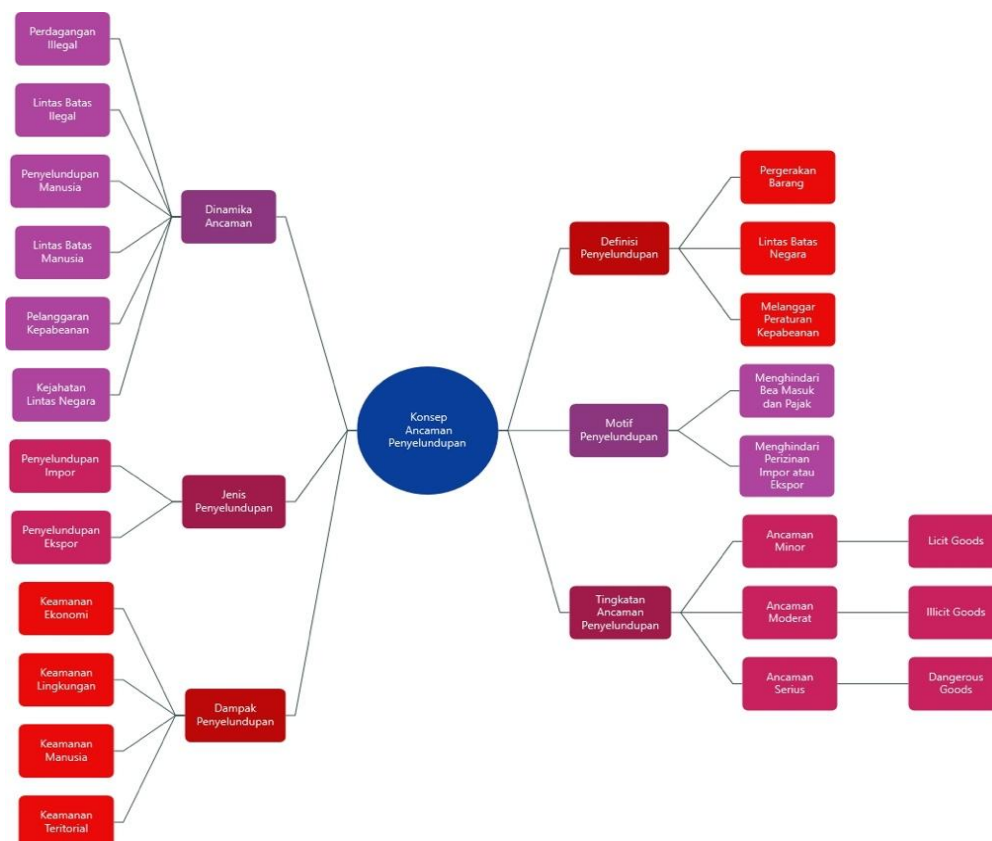


Figure 8 Smuggling Threat Concept

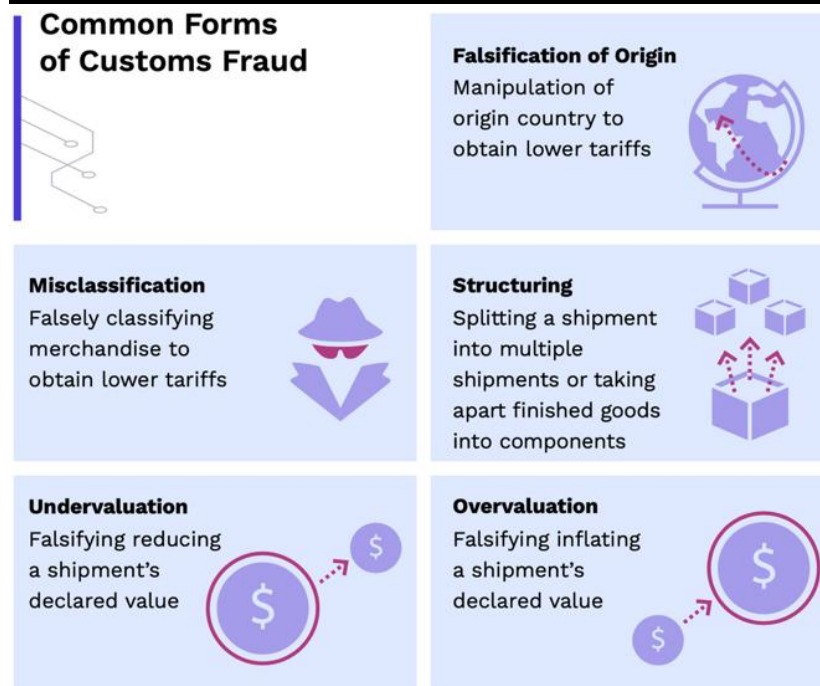


Figure 9 Common Forms of Customs Fraud

Smuggling threats are classified into minor, moderate, serious and critical based on their impact. The impacts of smuggling include economic losses, harm to humans and the environment, and threats to national security.

Dynamics of the Strategic Environment Since in Changing World

Globalization and Industrial Revolution 4.0 (IR 4.0) trigger significant changes in corporate and customs strategies. IR 4.0, characterized by digital technology, demands adaptation of strategic management in various sectors. Society 5.0 emphasizes improving the quality of life through technology. *One Belt One Road* (OBOR) promotes global economic connectivity and growth. These phenomena create a *volatile, uncertain, complex, and ambiguous* (VUCA) environment that demands adaptive and innovative strategies.

Research Methodology

This research uses a qualitative methodology with a descriptive and inductive approach to analyze the threat of smuggling in the Industrial Revolution 4.0 era (Sugiyono 2017, Moleong 2013). Primary data was collected through interviews with academics, practitioners and policymakers, while secondary data was obtained from literature and document studies. Data analysis techniques included thematic analysis, NVivo 14 software, PESTELO and SWOT analysis, and intelligence analysis (Supriyadi 2022). Data validity was tested through triangulation and tests of credibility, transferability, dependability, and confirmability.

Results and Discussion

Smuggling Threats and the Impact of the Industrial Revolution 4.0

This analysis combines interviews, literature review, previous research, and supporting documents to provide a comprehensive picture of smuggling threats in



Figure 10 Word Frequency Interview Results

1. Definition of smuggling

2. Types of smuggling

3. Factual and potential threats of smuggling

4. Smuggling threat level

also undermines the principle of fair competition and threatens state sovereignty. The threat level of smuggling can be classified based on commodities, actors, and the complexity of the impact, ranging from minor threats to critical threats.

5. Smuggling modes and motives

Smuggling modes include both physical and administrative aspects. The main motive for smuggling is economic gain and high market demand for illegal goods. Other contributing factors include ineffective government policies and poor governance. The nature of the goods being smuggled, such as narcotics and firearms, is also a motive.

6. Trends and dynamics of smuggling threats impacted by the Industrial Revolution 4.0

While traditional smuggling trends are still high, *white collar crimes* such as *customs fraud* are also increasing. The Industrial Revolution 4.0 brings new challenges in the form of digital goods smuggling that has not been comprehensively regulated in customs policy. DGCE prosecution data shows fluctuations in the number of smuggling cases in the last five years, with an insignificant downward trend.

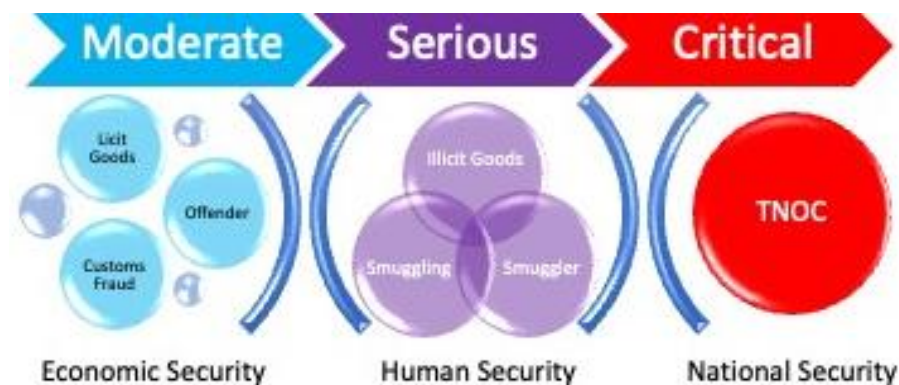


Figure 11 Classification of Smuggling Threats

Based on Prunckun's Threat Theory, the threat of smuggling can be assessed by measuring the threat agent's intentions and capabilities. In this case, intention is represented by the motivation for smuggling, while capability is represented by the modus operandi. Robert Ring's theory is used to classify the threat of smuggling based on the commodity, the actor, and the impact.

Smuggling is a serious threat that requires enhanced prevention and countermeasures. The necessary strategies include strengthening border surveillance, increasing interagency cooperation, modernizing the customs system, educating the public, and adjusting policies related to digital trade. This analysis is expected to provide a comprehensive understanding of smuggling threats and become the basis for formulating more effective countermeasure strategies.

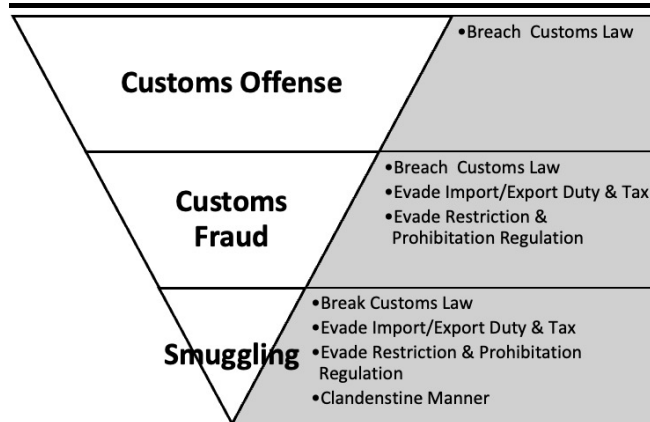


Figure 12 Terminology of Customs Offences

Evaluation of Customs Intelligence Strategy and Comparative Analysis with International Standards This study evaluates customs intelligence strategies by comparing WCO standards and empirical data. The aim is to provide a comprehensive and reliable picture of the customs intelligence strategy in Indonesia. Some of the key findings from the data analysis of interviews, literature reviews, observations, and supporting documents include:

1. **Organizational Structure:** DGCE's intelligence unit is currently under the Directorate of Enforcement and Investigation, limited to law enforcement operations, and has limited resources.
2. **Role:** Customs intelligence plays a role in information collection and analysis, early threat detection, and law enforcement.
3. **Function:** Focus on economic intelligence and law enforcement, providing data for case handling and policy making.
4. **Duties:** Prepare materials for policy formulation, standardization, technical guidance, evaluation, and implementation of intelligence.
5. **Authority:** Managing information for prevention and early detection, taking action in urgent situations.
6. **Activities:** Conduct activities based on the intelligence cycle, with an emphasis on conventional intelligence.
7. **Methods:** Using a combined approach of big data and conventional intelligence.
8. **Opportunities:** utilization of AI, business process integration, and data exchange.
9. **Challenges:** technology disruption, data security, and optimization of intelligence functions.
10. **Constraints:** communication strategies, data exchange, and limited intelligence positions.
11. **Role Strengthening:** The expansion of responsibilities and functions increased interagency cooperation.

Gap Analysis

On this occasion, in conducting the evaluation, a gap analysis will be used to determine whether Indonesia's current customs intelligence activities are in line with WCO standards or whether there are still differences. In addition, gap analysis can also identify the strategic position of Indonesia's current customs intelligence

juxtaposed with world customs intelligence best practices. *Gap analysis* is conducted by comparing DGCE's intelligence strategy with the WCO standard (*Global Information and Intelligence Strategy*). The results show that DGCE has only fulfilled 3 out of 15 WCO parameters, namely intelligence cycle, risk management system, and *capacity building*. Recommendations that can be put forward include: a). develop definitions of objectives, information, and types of intelligence, b). determine the level of decision making. utilize various sources of intelligence data, c). apply the basic principles of intelligence, d). develop relevant intelligence products, and e). improve inter-agency cooperation.

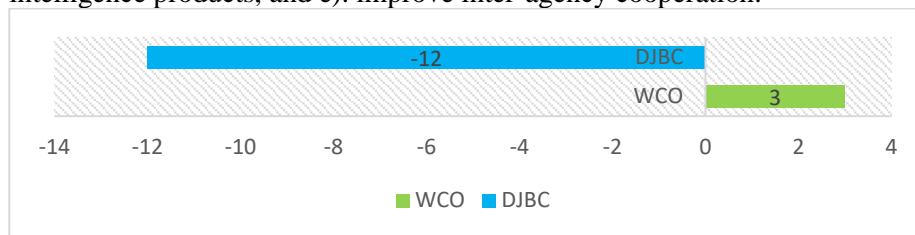


Figure 13 Gap Analysis DGCE Intelligence Strategy vs WCO Standard

PESTELO Analysis

PESTELO analysis was used to evaluate the external environment of Customs Intelligence. The results show that Customs Intelligence is affected by various political, economic, social, technological, environmental, regulatory, and organizational factors. The resulting recommendations: a). strengthen the organizational structure, b). strengthen the legal basis, improve the quality of human resources, c). increase the budget, d). increase internal cooperation, e). utilize the latest technology, and f). increase international cooperation.

P	E	S	T	E	L	O
Political	Economic	Social	Technological	Environmental	Legal	Organizational
<ul style="list-style-type: none"> Political Will National Security Policy Intl. Coop. 	<ul style="list-style-type: none"> Economic Growth Intl. Trade Policy Digital Goods & Service Trade 	<ul style="list-style-type: none"> Demograp Change Community Awareness TNOC 	<ul style="list-style-type: none"> Utilization of AI, Big Data and Machine Learning Awareness of Cyber Security Blockchain Tech. 	<ul style="list-style-type: none"> Climate Change Geopolitics & Geoeconomics Shifting 4IR, 5Society 	<ul style="list-style-type: none"> Intel Norms on Customs Act Smuggling Definition on Customs Act Intel SOP 	<ul style="list-style-type: none"> Customs Intel Structure Similar Intel Entity Budget Allocation

Figure 14 PESTELO Analysis

Table 1 Worksheet of PESTELO Analysis

	<i>Comments and Observations</i>	<i>Impact Estimates</i>	<i>Timing</i>	<i>Direction</i>	<i>Risa/Fall</i> > Increase <Increase = Stable 0 Unknown	<i>Import</i> Critical Serious High Moderat Minor
		High	0-6 Months	+ Postive		
		Medium	7-12 Months	- Negative		
		Low	13-24 Months	0 Neutral		
		Unknown	>24 Months			
Political	Strategic vision	High	13-24 Months	-	<	Critical
	National Security Policy	Medium	13-24 Months	0	=	High
	International Cooperation	Low	>24 Months	0	=	Moderat
Economical	Economic Growth	High	7-12 Months	+	>	High
	International Trade Policy	High	7-12 Months	-	<	High
	Digital Goods and Service Trade	Medium	>24 Months	-	>	Serious
Social	Demographic Change	High	>24 Months	+	>	High
	Community Awareness	Medium	7-12 Months	+	>	High
	Transnational Organized Crimes	High	7-12 Months	-	>	Critical
Technological	Utilization of AI, Big Data and Machine Learning	Medium	>24 Months	+	>	High
	Awareness of Cybersecurity	High	7-12 Months	+	>	Critical
	Blockchain Technology	Low	>24 Months	0	=	Moderat
Environtmenal	Climate Change	Low	>24 Months	0	=	Minor
	Geopolitics and Goeconomics Shifting	High	7-12 Months	-	>	High
	Impact of 4th Industrial Revolution, 5th Society	High	7-12 Months	-	>	Serious
Legal	Intelligence Norm at Customs Law	High	>24 Months	+	0	Critical
	Smuggling Definitions in Customs Law	High	>24 Months	+	0	High
	Intelligence System and Procedure	High	7-12 Months	+	=	Serious
Organizational	Customs Intelligence	High	>24 Months	-	=	Critical
	Organizational Structure	Medium	7-12 Months	+	=	High
	Comparrison of Similar Entity Budget Allocation	High	7-12 Months	-	=	Serious

This evaluation and analysis show that Customs Intelligence in Indonesia needs to be improved to be more effective in dealing with smuggling threats. It is important for DGCE to restructure, revitalize, and adjust the strategy to be in line with international standards and the dynamics of the strategic environment. Customs

Intelligence Strategy Formulation to Face Smuggling Threats in the Era of Industrial Revolution 4. The Industrial Revolution 4.0, with its digital transformation, brings significant impacts to various sectors, including customs. This phenomenon demands adaptation and formulation of new strategies, including in the field of customs intelligence, to deal with increasingly complex smuggling threats (Augusto Azael Perez Azcarranga, 2022).

Strategic Thinking Framework

This study uses a strategic framework to formulate a customs intelligence strategy. The first step is to determine the vision, mission, core values, and objectives of customs intelligence.

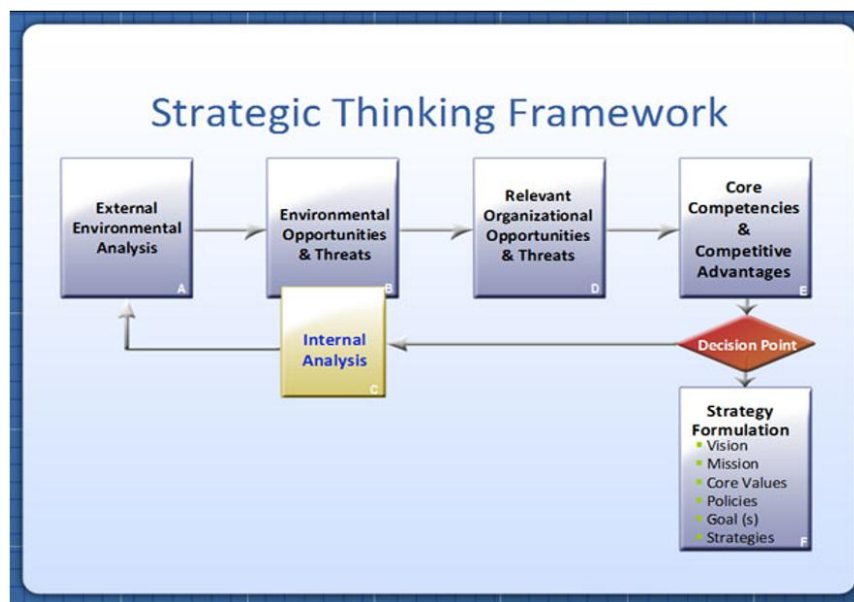


Figure 15 Strategic Thinking Framework



Figure 16 Results of the Strategic Thinking Framework

Vision, Mission, and Core Values

Currently, DGCE has not formulated a vision, mission, and core values specific to customs intelligence. This research proposes the following:

- Vision: To be the World's Leading Customs Intelligence.
- Mission:
 - To provide the best risk assessment in international trade facilitation.
 - Protecting the public from illegal and dangerous goods.
 - Presenting the best intelligence analysis in the collection of state revenues.
- Core Values: Fast, Accurate, Confidential, Integration, Adaptive, Collaboration.

Goals and Objectives

The objective of Customs Intelligence is to detect, identify, assess, analyze, interpret, and present intelligence to provide early warning and anticipate smuggling threats. The goal of Customs Intelligence is to achieve these objectives effectively and efficiently.

Key Stages of Intelligence Strategy Management

Strategy formulation involves three key stages: 1). Strategic Analysis, 2). Strategic Selection and 3). Strategic Implementation.



Figure 17 Key Stages of Intelligence Strategy Management



Figure 18 SWOT Analysis

1. Strategic Analysis:

The strategic analysis was conducted using SWOT analysis with the help of NVivo 14. The results show some of the strengths, weaknesses, opportunities, and threats facing Customs Intelligence. Gambar 1 *SWOT Analysis Model*

Table 2 Recommended Actions in the Direct Confrontation Matrix

	S1	S2	S3	W1	W2	W3
O1	<i>Offensive:</i> - strengthening the role and function of customs intelligence into law enforcement intelligence and economic intelligence. - utilization of information technology disruption in early detection and early prevention of violations. - cooperation with related agencies			<i>Strengthen:</i> - restructuring the organizational structure of customs intelligence. - revitalization of the role and function of strategic intelligence in decision-making. - improvement of regulations related to intelligence norms in the Customs Law.		
O2						
O3						
T1	<i>Defensive:</i> - Implement technologies such as <i>artificial intelligence</i> and <i>machine learning</i> in risk management, as well as using <i>remote sensing</i> , and X-Ray technologies. intelligence analysis for early detection and early prevention of smuggling and <i>customs fraud</i> threats .			<i>Survive:</i> - moratorium on the imposition of import duties on international trade in digital goods. - revamping <i>cyber security</i> architecture to maintain data security. intelligence analysis for early detection and early prevention of smuggling threats		
T3						
T2						

2. Strategic Choice:

Scenario analysis and cost & benefit analysis were used to select the most appropriate strategy. Based on the results of these analyses, the *offensive strategy* was selected as the most suitable strategy under the current conditions.

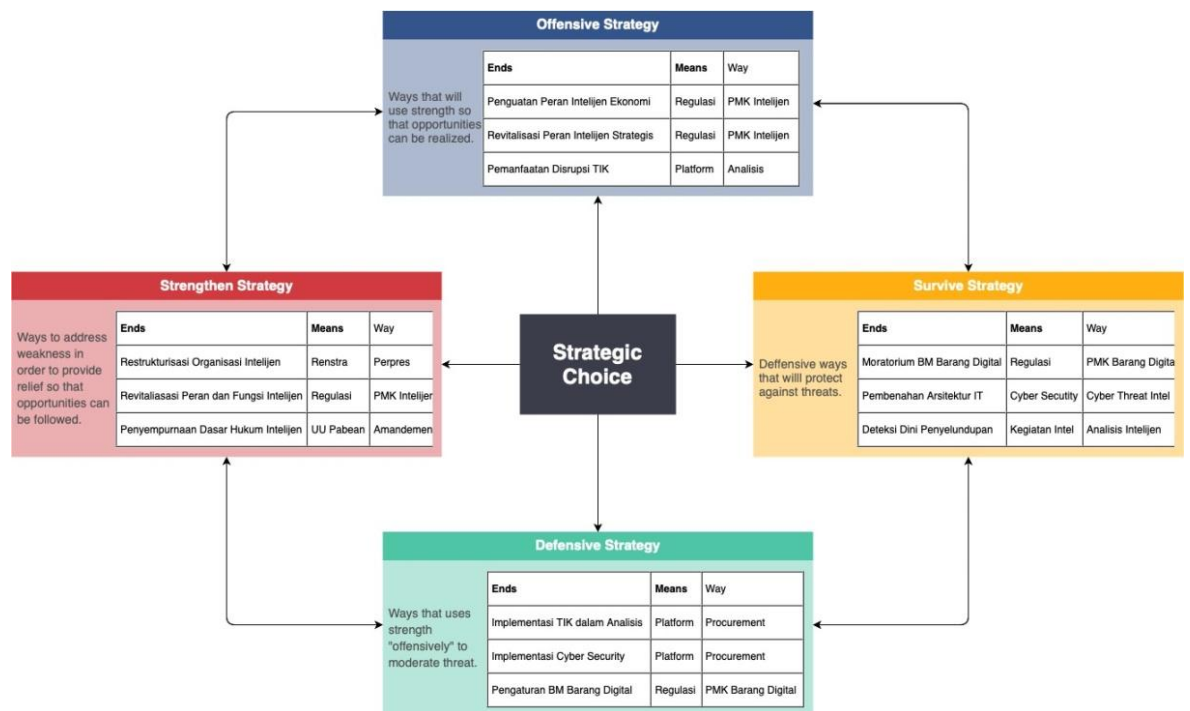
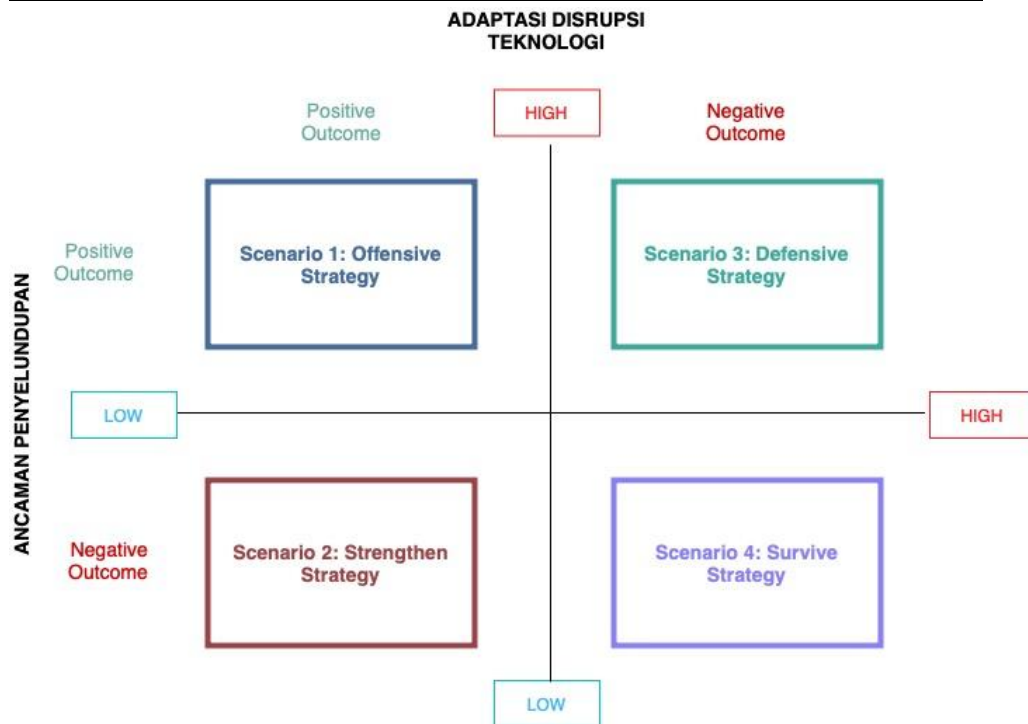


Figure 20 Strategic Choice

3. Strategy Implementation:

Implementation of the intelligence strategy includes an action plan and budget allocation, revitalization of the role and function of intelligence, recommendations for the design of the organizational structure and utilization of information and communication technologies in intelligence analysis. Furthermore, some of the strategic objectives identified include: 1). Revitalization of the role of Customs Intelligence, 2). Improvement of regulations, 3). Organizational restructuring, 4). Utilization of information technology, 5). Improvement of human resource capabilities and 6). Cooperation and data exchange.

Action Plan and Budget Allocation

Using the *National Intelligence and Information Strategy* guidelines, the following are the research findings related to the topic of customs intelligence strategy. Subsequently, the themes of some of these findings were used as *strategic objectives* in the process of developing an action plan and budget allocation (see Table 3). Revitalization of Roles and Functions The role of Customs Intelligence needs to be expanded, not only focusing on law enforcement, but also on economic intelligence and strategic decision-making support. The formulation of a comprehensive customs intelligence strategy is essential to deal with the threat of smuggling in the era of the Industrial Revolution 4.0. Implementation of this strategy requires commitment and cooperation from all relevant stakeholders.

Table 3 Action Plan and Budget Allocation

Strategic Objectives	Size	Implementation	Unit In Charge	Timetable	Follow-up	Budget
Improvement of Customs Intelligence Regulations	Legal basis for intelligence in the Customs Law	Amendment to Customs Law	Customs Intelligence Section I	5 years	DGCE Strategic Plan	-
Revitalizing the Role of Customs Intelligence.	Ministerial Regulation on Tax Intelligence Management	Preparation of Ministerial Decree and Regulation of the Directorate General of BC	Customs Intelligence Section II	1 years	DGCE Annual Plan	-
Customs Intelligence Organization Restructuring	Perpres and Permenkeu OTK Kemenkeu and DJBC	Changes in Perpres and Permenkeu OTK Ministry of Finance and DGCE	Excise Intelligence Section	2 yeras	DGCE Strategic Plan	-
Utilizing Advances in Information Technology	<i>National Customs Intelligence Platform</i>	Improved CITAC architecture and capacity	Intelligence Operation Support Section	1 years	IT Procurement	State Budget 2025
Increasing the Capacity and	Functionalization of Intelligence Analysts and	Amendment of Ministerial Regulation on	TU Subdivision	1 years	Progress Report	-

Strategic Objectives	Size	Implementation	Unit In Charge	Timetable	Follow-up	Budget
Capability of Intelligence Human Resources	Intelligence Agents	Functional Position				
Kerjasama Intelligence Cooperation and Data Exchange	MoUs and MCCs with relevant national, regional and global institutions	Working Group	Sub Directorate of Intelligence	1 years	Progress Report	State Budget 2025
Strategic Cooperation with Service Users	MoU with Service User	Working group	Sub Directorate of Intelligence	1 years	MoU	State Budget 2026

Organizational Design and Structure

It is recommended to restructure the customs intelligence organization by increasing the echelon of the intelligence unit. This is expected to increase the effectiveness and optimization of intelligence functions.

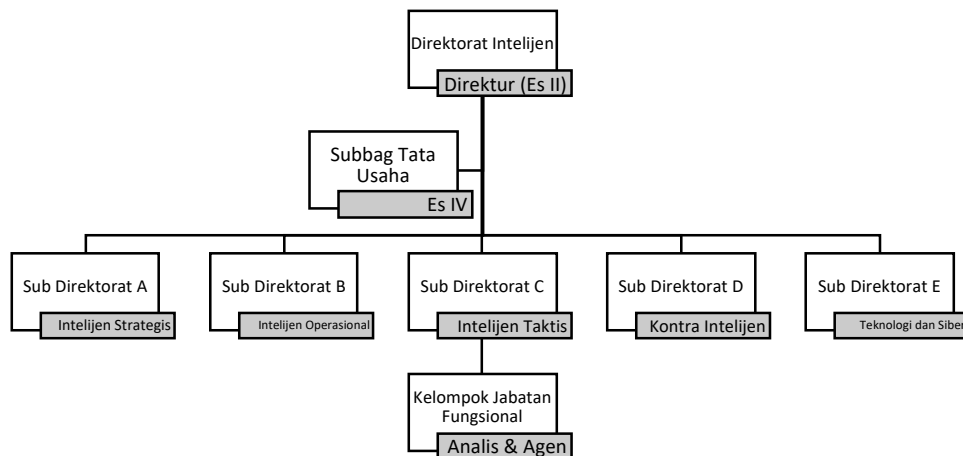


Figure 21 DGCE Intelligence Organization Structure Design

Utilisation of Information and Communication Technology in Customs Intelligence Analysis

Non-participant observation was conducted to observe the process of process of intelligence analysis by utilising information and communication technology in the Customs Intelligence Customs Intelligence environment. Two forms of technology utilisation observed were the Coastal Surveillance System (CSS) and the Customs Intelligence and Targeting Centre (CITAC). and Customs Intelligence and Targeting Centre (CITAC). Coastal Surveillance System (CSS) The CSS is a remote sensing system that monitors the movements of vessels in the

territorial waters. The system integrates radar, Automated Identification System (AIS), and remote cameras to detect, identify and track vessel activity. How CSS Works:

- a. Arrival Plan Analysis: Inventory of vessel schedules based on manifest data.
- b. Radar Monitoring: Object movement detection and vessel traffic monitoring
- c. Optical Surveillance System: Confirmation of ship movement anomalies with cameras.
- d. Data Integration: Automatic analysis of data from various sensors.
- e. Warning and Action: Automated warning systems and rapid response to potential threats.
- f. Geographic Information System (GIS): Spatial display of data for decision-making.

CSS enables early detection and prevention of waterborne smuggling. Batam Type B Customs Commission has significantly increased smuggling prosecution by utilising CSS.

Customs Intelligence and Targeting Centre (CITAC)

CITAC is a web-based application that integrates various customs service applications in one interface. It facilitates intelligence analysis for the identification of smuggling and customs offences. CITAC also provides strategic intelligence data for decision-making. The utilisation of information and communication technology, such as CSS and CITAC, has an important role in improving the effectiveness of intelligence analysis and law enforcement in the customs sector.

Conclusion

Based on the discussion as described above, in this case the author can draw the following conclusions:

Smuggling in the import sector includes textile commodities, steel, narcotics, illegal cigarettes, firearms, alcoholic beverages, and used goods. In the export sector, the vulnerable commodities are forest products and CPO. Smuggling modes are dominated by pure smuggling and administration. Technological developments have given rise to digital goods smuggling that capitalises on regulatory gaps. Smuggling is a serious threat to the country's economy and resilience.

There are gaps between the current Customs Intelligence strategy and international standards, especially in terms of objectives, definitions of information and intelligence, decision-making levels, types of intelligence, data sources, basic principles, techniques and tools, cooperation, and intelligence products.

Holistic and comprehensive improvements are needed in the formulation of Customs Intelligence strategies, especially in terms of vision, mission, regulations, organisational structure, human resources, and infrastructure. Strengthening Customs Intelligence is needed to optimise its role and function in facing the threat of smuggling in the era of the Industrial Revolution 4.0.

Recommendations

1. This research suggests the need to develop a comprehensive theory of intelligence strategy.
2. Practically, it is recommended to strengthen counter-smuggling efforts, adjust customs intelligence standards to international standards, and reformulate customs intelligence strategies as part of economic intelligence with adequate regulatory support.

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