

PT Pindad's Strategy towards Defense Industry Independence



Tien Norma Habsari¹, Muhtar Rifai², Lukman Yudho Prakoso³, Susilo Adi Purwantoro⁴, Mulyani⁵, Muhammad Zaky Mikail⁶, Ivan Yulivan⁷

^{1,2,3,4,5,6,7} Universitas Pertahanan, Kawasan IPSC Sentul, Sukahati, Kec. Citeureup, Kabupaten Bogor, Jawa Barat 16810

ABSTRACT: In order to realize defense and security in accordance with the times, Indonesia is obliged to produce the main weapons system equipment independently. The target of achieving the minimum essential force (MEF) has an impact on the development of the domestic defense industry. Government policy regulations related to the defense industry and the development of defense human resources have been regulated in Law Number 16 of 2012 concerning the Defense Industry. This research was carried out through descriptive qualitative studies, literature study techniques sourced from books, journals, and national data. This study describes an analysis of the constraints faced by PT Pindad in an effort to become self-reliant in the defense industry. The transfer of technology process carried out by PT Pindad encountered obstacles such as the availability of company technology and a very short time in meeting the Minimum Essential Force (MEF) III target. Based on the capabilities of its resources, to prove that the Indonesian defense industry is able to compete with other countries' defense industries, PT Pindad has several grand strategies which include efforts to optimize the use of fixed assets and increase product sales, increase profitability, and increase working capital.

KEYWORDS: Strategy, Transfer of Technology, Defense Industry Independence

I. INTRODUCTION

Indonesia is the biggest archipelago country in the world. There are thousands of islands with a very long coastline stretching from Sabang to Merauke. There are many important resources contained in the earth of Indonesia, both renewable and non-renewable resources. With a very strategic location along with spaces that can be utilized, Indonesia has many threats. The threat itself can be in the form of intervention from other countries, negative issues circulating, or unpreparedness for the modernity of the global era can also be said to be a threat. In contrast to the years before the 1950s, which are World wars 1 and 2, the millennial era presents a war in the fields of technology and information. Nowadays, the term chemical warfare or biological warfare appears.

Such a large human resource is a very important asset for Indonesia's progress. Human resources have a vital role in implementing policies and operational activities. In order to protect and defend state assets or anticipate threats, a country must be prepared with a national defense system. The existence of defense equipment is a very vital matter for Indonesia. One thing that emphasized is the independence of the defense equipment system to build a credible and strong national defense capacity.

Independence in terms of defense equipment is needed to avoid high dependence on defense equipment products from other countries. Availability of materials for the manufacture of defense equipment and qualified human resources are strong reasons for the necessity to produce defense equipment needs. Heading towards independent production also requires sufficient time to really master how to make modern defense equipment that is appropriate for the times. Various efforts have been made by the government to build a modern defense industry. There are many collaborations carried out by the government, in this case by the Minister of Defense, establishing bilateral cooperation with other countries in terms of strengthening defense systems and tools.

The former Indonesian Minister of Defense (2014-2019) Mr. Ryamizard Ryacudu during his tenure was very aggressive in carrying out cooperation that is accompanied by the transfer of defense equipment technology. Thus, Indonesia has the opportunity to study the system and manufacture of defense equipment in various countries and then develop it in their own country. Many advances have been felt with the technology transfer policy. Moreover, with the enactment of Law Number 16 of 2012 concerning the Defense Industry, domestic defense equipment spending continues to increase every year. The budget of the Ministry of Defense under Mr. Prabowo's era, which was very large among other ministries, should be used for the development of the defense industries, so that the target of at least 50% of the defense equipment used by the Indonesian National Army (TNI) comes from the domestic defense equipment industry.

The development of the TNI's posture is based on the policy of developing a military defense posture that has been determined by the state through the Presidential Regulation of the Republic of Indonesia Number 41 of 2010, that the TNI's strength is built on the Minimum Essential Force (MEF) scale, which is the size of the minimum requirements needed to be able to carry out its duties

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to safeguard the national interest. The development of the TNI's strength is carried out without any significant increase in the number of soldiers (Zero Growth), but is still based on the calculation of the right number of forces (Right Sizing).

The development of the TNI's strength on the MEF scale is also based on efforts to modernize the main equipment and weapons systems. The TNI must have modern and reliable weapons, ships, and fighter aircraft, without equality it will certainly be difficult to carry out military diplomacy, which includes conducting joint military exercises and operations. Therefore, the development of the MEF of TNI is being carried out that aimed at Indonesia's defense capability with a standard of deterrence of state defense that is able to maintain the sovereignty and territorial integrity of the Republic of Indonesia, especially in flash point areas to ensure the implementation of national interests.

Today there are three Indonesian defense industries that have been developed rapidly, these companies include PT. Pindad, a land defense equipment manufacturer, PT. PAL is a manufacturer of marine defense equipment, and PT. Dirgantara Indonesia is a manufacturer of air defense equipment. Even so, this company still does not fully meet the requirements of the local request, namely the TNI. The reason is the defense equipment produced that does not yet fully have the technology. Therefore, the TNI still imports more defense equipment such as leopard tanks made in Germany, marine defense equipment is still imported from the Netherlands, and air defense equipment is imported from Russia.

II. LITERATURE REVIEW

1. Strategy

Strategy is a pattern or plan that combines goals, policies and a series of activities into a unified whole to achieve the organizational goals that have been set (Avianti, 2015). While the strategy according to Gen. US Army (Ret) Andrew J. Good Paster is "Strategy covers what we should do (ends), how we should it (ways), and what we should do it with (means)". As quoted (Library of the National Resilience Institute of the Republic of Indonesia), this theory explains the essence of strategy as a decision-making process on the main elements of a strategy which include: Ends (target, goal, object, target); Ways (How to perform actions, concepts, methods); and Means (means/media, power, resources, potential).

2. Defense Industry

The defense industry is very important for the existence of the state. In the scope of international relations, defense cooperation between countries has been carried out through cooperation in the purchase of weapons, modernization of defense equipment and the current trend is the transfer of weapons technology. The defense industry is built with the aim of strengthening the national defense function. PT Pindad's defense industry was originally a private company, but Nowadays it has become the full responsibility of SOEs to support the defense posture through the production of defense equipment. The role of the state in the defense industry is very large.

The context of the defense industry in Indonesia in accordance with Article 1 paragraph 1 of Law Number 16 of 2012 states that "The defense industry is a national industry consisting of state-owned enterprises and privately-owned enterprises, either in groups determined by the government to partially or wholly produce defense and security equipment. maintenance services to fulfill strategic interests in the field of defense and security located in the territory of the Unitary State of the Republic of Indonesia". The existence of this law further clarifies that the function of the state is as an instrument in the defense industry (Law Number 16 of 2012 concerning the Defense Industry).

3. The Concept of Technology Transfer

The concept of technology transfer is a transfer of modern methods or distribution from one country to another. The embodiment of the concept are in the form of foreign investment, international trade, release and use of patent rights, as well as training assistance. The results of meeting the UNCTAD (United Nations conference on Trade and Development) stated that technology transfer can be stated as the application of technology for new uses.

Technology transfer according to the RI Law Number 11 of 2019 is the transfer of the ability to utilize and master science and technology between institutions, agencies, or people, both within the domestic environment and from abroad to within the country or vice versa. Technology transfer is carried out in several ways, which include:

- a. Licence;
- b. Cooperation;
- c. Science and technology services; and/or
- d. The implementation of technology transfer does not conflict with public order and statutory provisions.

Meanwhile, according to the United Nation Center of Transnational Corporation (UNCTC), technology transfer is a process of mastering technological capabilities originating from abroad which can be translated into three stages, namely:

- a. Transfer of acquired technology into the production of certain goods and services;
- b. The assimilation and diffusion of technology in the economic system of the technology recipient country; and
- c. Development of indigenous technology capabilities for innovation. What is meant by indigenous technology capabilities include:
 1. Ability to select the technology offered.

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2. Ability to master imported technology.
3. The ability to introduce new things in the process of producing products (innovation) (Marzuki, 1999).

III. METHODOLOGY

In this study, researchers used a qualitative approach with descriptive analysis methods through data collection which was described in detail and regularly. Data collection techniques through documentation are carried out through reviewing and/or browsing several books, journals, printed or electronic documents, and other sources of data or information deemed relevant to the research or study (Supriyadi, 2017). The research is intended to analyze the data by using data reduction techniques.

IV. RESULT AND DISCUSSION

Law Number 16 of 2012 concerning the Defense Industry was made in the context of empowering the domestic defense equipment industry by purchasing, renewing, and meeting the needs of the main defense system equipment (defense equipment) in accordance with the Minimum Essential Force (MEF). That law has a positive impact on supporting defense industry players, both BUMN and BUMS.

Some of the equipment that the domestic defense industry has not been able to fulfill as a strategic industry such as fighter aircraft, destroyers, rockets, missiles, UCAV, and radar. There are problems faced, including limitations in mastering key technologies and/or system integration capabilities. This is a requirement for the defense industry in increasing the contribution to the fulfillment of the TNI's defense equipment system while at the same time having international competitiveness in order to become part of the global supply chain.

The fulfillment of MEF 2020 in accordance with the 2020-2024 TNI needs planning of Rp. 6.5 trillion is an opportunity for PT Pindad to meet the needs of weapons, munitions, combat vehicles, and cyber security. Meanwhile, through Domestic Loans (PDN) in the 2020 RAPBN of IDR 2,974.1 billion, it is used to provide:

1. Infantry armored fighting vehicles, Munitions (MKK, MKB, and Musus), which are implemented by the Ministry of Defense; and
2. Patrol boats, operational vehicles, and inafis support equipment, and ammunition, which are carried out by the Indonesian Republic Police (POLRI).

Currently PT Pindad is capable of producing as many as 50 thousand weapons, 200 special vehicles/combat vehicles (Ranpur), and 180 million munitions annually and has exported to many countries such as Southeast Asian countries such as Brunei, South Asia, and Africa.

Fulfillment in terms of the infrastructure industry is also a concern of the state. Equitable distribution and development of state infrastructure is carried out throughout Indonesia. Infrastructure development is the main key to improving people's welfare, promoting equity and economic growth. The government realizes that for infrastructure development, substantial funding is required, meanwhile the available fiscal capacity is still not fully adequate, so that innovation and creativity in financing are needed by involving the private sector, BUMN, BLU, and local government, while maintaining the principle of prudence and low risk financing portfolio.

The current economic market conditions are growing rapidly in line with government policies regarding the development and equitable distribution of national infrastructure that will support food security, energy security, and advances in telecommunications and information technology. The Company can contribute to this government policy and take advantage of this policy by participating in marketing its products such as Excavators, Generators, E-Clips, Wessels, and Agricultural Machinery Equipment (Alsintan). In the manufacturing industry, competition is very competitive because there are so many business actors and in some manufacturing markets already have a market leader from that market.

Analysis of Obstacles Faced by PT Pindad

Cooperation between PT. Pindad and FNSS Defense Systems used an investment of US\$ 30 million or around Rp. 400 billion to be borne by the Ministry of Defense of each country. The estimated production time for the tank is three years for the two prototypes, which will be jointly done by Pindad and FNSS experts. One medium tank is being worked on at Pindad and one is being worked on at FNSS. The scope of cooperation is divided into three stages, namely, the design stage, the prototype stage, and the trial stage. At the design stage, PT Pindad sent a team of experts to study the technology used by FNSS so that it could be applied to medium tanks.

After the design phase was completed in 2016, PT. Pindad and FNSS are working on a prototype medium tank. The first prototype was made in Turkey and has entered the stage of making the hull. In the beginning of December, the first prototype from Turkey was sent to Indonesia. In the prototyping process, PT. Pindad sent about 20 engineering team to learn about this medium tank project. As well as 4 people from the manufacturing team to be able to learn technology at FNSS.

At the trial stage which coincided with the moment of Indonesia's 73rd year of independence, PT Pindad welcomed the nation's Medium Tank on August 16, 2018, which had gone through a series of certification tests with Ditlitbangad. The trial results

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were considered very satisfactory. Because the results carried out have met the requirements and specifications of the Indonesian Army to complete the technical performance capabilities of the Medium Tank.

In an effort to develop a better future, a leader must have the ability to identify problems and opportunities early. Knowing the obstacles faced is the basis for determining what business to run (Irawan, 2005). Cooperation between PT. Pindad and FNSS Defense Systems in the procurement or manufacture of this medium tank also encountered several obstacles including:

1. Human Resources

PT. Pindad needs to learn a lot from foreign engineers, especially the engineers in FNSS because of the limited quality of the existing technology, the engineers owned by PT. Pindad is overwhelmed with technology-based defense equipment production.

2. Process towards MEF III

By the end of 2024, the government's target is that all domestic defense industries must be able to produce independent defense equipment. Of course, it becomes a challenge for PT. Pindad which is the focus of research. Even though the cooperation in the manufacture of medium tanks has received Transfer of Technology, for the perfect knowledge, it takes quite a long time. In the third MEF, the target for the TNI's main weaponry system is 70% to be made by the domestic defense industry.

PT Pindad Resource Capability Analysis

Table 1. Number of Workers

Description	2015	2016	2017	2018	2019
Total workforce	2331	2506	2536	2500	2558
Productivity in billion/person	0,84	0,81	0,97	1,28	1,31

Source: Secondary Data from the Financial Statements of PT Pindad

Tabel 2. Produktivitas Tenaga Kerja Konsolidasi

Division	Sales (Billion)	Number of Workforce	Labor Productivity
Weapons	303,52	475	0,64
Ammunition	768,53	590	1,30
Special Vehicles	1068, 87	255	4,19
Heavy Equipment	291,90	163	1,79
Handakkom	478,51	43	11,13
Cast Forging and Railways	192,08	240	0,80
Subsidiaries	295,36	7	42,9

Source: Secondary Data from the Financial Statements of PT Pindad

Based on table 1 above, it is known that the number of employees at PT Pindad tends to fluctuate, but the positive thing is personal productivity as measured by the financial level produced by one worker. Since 2016 the increase in productivity is quite significant until in 2019 productivity is 1.31 billion/person. While in table 2, it is known that the level of consolidated labor productivity or the productivity level of each equipment production division. The highest productivity is in the subsidiary division with a value of 42.9 and the lowest in the weapons division of 0.64.

The positive level of productivity is influenced by human resources factors that have high credibility. The qualifications for the education level of the workforce in 2019 include the Junior High School (SMP) - Senior High School (SMA) level of 2348 people or 73.45%; Diploma Degree 1-3 of 252 people or 9.85%; Bachelor Degree of 404 people or 15.61%; Master degree of 26 people or 1%; Doctoral Degree of 2 people or 0.08%. The existence of facilities and infrastructure owned by PT Pindad is also a supporting factor in supporting its production, such as:

1. Buildings Machinery Production
2. Machineries Tools & Auxiliaries
3. Tools and Apparatus Equipment & Utility
4. Equipments and Utilities Transport Equipment
5. Conveyance/Lifting Equipment Office Inventory

In the development of military and commercial products, PT Pindad requires capital participation for operational sustainability to support the independence of the defense and security of the Republic of Indonesia. The government's equity participation in SOEs is very important to support the increase in the SOE's income. The government through the State Equity

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Participation has injected funds into PT Pindad to be able to add its machines and increase its production capacity in encouraging the strengthening of the defense industry in the hope of being able to compete with other countries through defense equipment technology. Support from all parties is also needed to realize the independence of the domestic industry.

Investments in 2019 were grouped into two parts, namely development investments (programs) and routine investments (non-programs). The details of investments entering the procurement and realization implementation stage in 2019 are:

1. Development Investment (Program):
 - a. Increased capacity of MKK production lines: production machines, tools and tools, and building construction
 - b. MKB production line development: production machinery, tools and equipment, and building construction
 - c. Development of production lines of tanks and combat vehicles: production machinery, and equipment and utilities
 - d. Weapon production line development: production machines, and equipment and utilities
 - e. Improvement of product and process development facilities: production machinery, equipment and utilities, and lift/transport vehicles
 - f. Power generation business development: production machinery
2. Routine Investment (Non-program) which includes repairing facilities including buildings, buildings, production machines, and routine procurement including production equipment, supplies, utilities and office inventory.

Analysis of PT Pindad's Strategy Towards Defense Industry Independence

Strategy is an action plan that aligns organizational resources and commitment to achieve superior performance (Saiman, 2015). Marketing by PT. Pindad uses the G to G concept and makes the public interest and issues of state security its selling points. Marketing is carried out using a communication approach related to state relations, legality and issues regarding national defense. To build increased trust in destination countries, namely through the concept of Integrated Marketing Communication (IMC), which is the interest of marketing communications related to the company's capabilities in processing communication channels and the content of the message. IMC is also considered to make a positive contribution to PT. Pindad to present a marketing strategy that is not only focused on the breadth of the message, but also the more effective targeting of the message.

The concept is carried out through events and experiences, sales promotion, public relations and publications, direct marketing, sales, and advertising. The main reason for using IMC is because the application of the G to G concept that prioritizes lobbying at the government level and bilateral relations can support all its marketing activities. The form of direct promotion in product marketing is by participating in international championships which are considered more effective in introducing products in terms of quality, form, and take advantage of joint training activities with other countries by providing support for defense equipment products, this is seen as effective in increasing marketing and the name of Indonesia.

In 2019 PT. Pindad has carried out various marketing agendas to enlarge the defense and security and industrial market segments. These activities include:

1. Join in domestic and foreign exhibition events, such as the Product Exposure Exhibition at the Ministry of Defense, DANKORMAR CUP 2019, ACAMM XX 2019 Ditjen Pothan, Goesmart ITB, AARM 2019 at Pusdikif Cipatat, Velox ET Exactus Cup 2019 Jakarta Championship, ADMM Plus EWG on Peacekeeping Operation at PMPP Sentul Jakarta, Harteknas & Ritech 2019, Gakkum Festival 2019 Ministry of Environment, Combined Annual Report.
2. Indonesia-Singapore Meeting (CARM INDOSIN HLC) 2019, Pacific Expo 2019, AAISW II (Asean Armies Information Sharing Workshop) Indonesia 2019, Display of Contract Signing for Alutsista and Construction Ministry of Defense, IDEF Turkey, FGD at ITB, LIMA Malaysia 2019, Gebyar Millennial Safety Road Festival West Java Regional Police, Rabiniscab and pussenif, Exhibition of Development Achievements at the Ministry of Finance Jakarta, IDEX in Abu Dhabi-UAE, Indonesia Electric Motor Show 2019, Trade Expo Indonesia 2019, PUPR Cipta Karya Workshop Surabaya, Palm oil Workshop, Semarang Expo 2019, IIMS 2019, Citarum Expo 2019, Indoconstech 2019, Railway Tech 2019, Indonesian Construction, Exhibition visiting KASAD Bangladesh, KASAD New Zealand, Head of the Defense Facilities Agency of the Ministry of Defense, Commander of the Special Forces Corps TNI-AU, Commander of the TNI-AU Education and Training Command- Navy, Philippine Army Chief of Staff Delegation, working visit of the Minister of Defense and Secretary General of the Ministry of Defence.
3. Registration of Disc Plow, 10 ton Paddy dryer, Excava 200 Amphibious products at the LKPP Electronic Catalog (Government Goods/Services Procurement Policy Agency).
4. Test / Demo of Pindad's SPR products at the firing range of the field artillery weapons center and the Batujajar special forces command education center.
5. Making mock ups, catalogs and videos of Industrial products.
6. Market development of communication tools and cast forging products.
7. Implement Technical Assistance (Asnik), both defense and security products and industrial products by the After Sales Service Section in order to resolve customer complaints.

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In addition to the field of defense and security, product development in the industrial business sector is very important to support the acceleration of domestic development. The products produced include industrial machines and heavy equipment such as excavators, agricultural machine tools, railroad hooks, traction motors, generators to marine cranes.

Efforts to innovate cooperation products related to the procurement of defense equipment are not only limited to trade, but also through the transfer of technology method. Utilization of information technology contributes effectively to tasks to be carried out properly (Lamatenggo, 2011). In supporting or increasing the independence of defense and security that is competitive with other countries, PT. Pindad needs full support from the Ministry of Defense as well as good synergy between State-Owned Enterprises for Strategic Industries (BUMNIS) and supporting industries to create a strong defense industry.

World economic growth has the potential to improve, although the risks of tensions in the US-China trade relationship and geopolitical conditions need to be monitored closely because they could affect domestic economic growth and foreign capital inflows. PT Pindad as one of the strategic industries has very good prospects, both for defense and security products and industrial products. The foundations for this include:

1. The government's determination of the National Priority for National Security Stability and Election Success in the 2019 Government Work Plan (RKP), where one of the priority programs is the national regional defense program which targets the achievement of the Minimum Essential Force (MEF) of 68.9% and the defense industry's contribution is 53.8%.
2. Decision of the Daily Chair of KKIP Number KEP/59/KKIP/ VIII/2019 regarding the appointment of Pindad as the Lead Integrator of the Army Military Alpalhankam Daily Chair of the Defense Industry Policy Committee.
3. Directions for synergizing State-Owned Enterprises (BUMN) as outlined in the Regulation of the Minister of BUMN RI Number PER-04/MBU/09/2017 concerning amendments to the Regulation of the Minister of BUMN RI Number PER-03/MBU/08/2017 concerning guidelines for BUMN cooperation and reaffirmed the mandatory inclusion of BUMN synergy in the assessment of the company's Key Performance Indicators.
4. The Tiger Medium Tank for the Combat Vehicle category Number IMLA/TC/RAPUH/010/2019 by the Head of the Feasibility Center (Kapuslaik) of the Ministry of Defense on September 4, 2019. The Tiger Medium Tank is one of the seven priority programs of the Defense Industry that have been realized from seven programs priority of the National Defense Industry to support the independence of artillery rocket technology in Indonesia.
5. Certification of R-Han 122B which is one of the seven priority programs of the National Defense Industry to support the independence of artillery technology in Indonesia.
6. SOE synergies and agreements between Strategic Industrial SOEs (BUMNIS) which are members of the National Defense and Hightech Industry (NDHI) cluster, namely PT Dahana (Persero), PT DI (Persero), PT INTI (Persero), PT Industri Nuklir Indonesia (Persero), PT Len Industri (Persero) and PT Pindad (Persero), agreed to jointly sell products through exhibitions held in Indonesia and abroad.

The Company's strategy is implemented in the right way. Pindad managed to get through this dynamic economic situation by showing a fairly good performance achievement. The strategies that have been carried out to improve the company's performance in 2019 include:

1. Optimizing the use of fixed assets and increasing sales through:
 - a. optimization of production capacity and utilization of production facilities rejuvenation (staged investment).
 - b. Periodic maintenance.
 - c. Seize opportunities for both existing markets and new market penetrations.
 - d. Product development and company business by establishing a business focus that benefits the company.
2. Increased profitability:
 - a. Evaluation of cost of goods sold (variable cost) which is not directly related to sales.
 - b. Optimizing the performance of HR through improving the supervisory system for employees.
 - c. Lower the reject rate.
3. Increasing working capital (working capital):
 - a. Inventory value improvement.
 - b. Repair of accounts receivable and accounts payable.
 - c. Improvements to accrued income.
 - d. Improvement of debt and capital structure.
 - e. Socialization of new and existing products as well as trying to absorb various inputs from users as evaluation material regarding service quality and product quality improvement.
 - f. Intensive communication with key customers by actively evaluating the use of PT Pindad's products.

The company has a goal to survive and increase capacity and long-term performance for the survival and growth of the company in order to support the vision and mission of the company that has been set. Based on the Company's Budget Activity Plan (RKAP), the company's targets are as follows:

1. Better financial performance by strengthening internal control;

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2. Changes and improvements to business processes that support business development;
3. Strengthening of risk management, legal, and internal control functions;
4. Improvement of organizational equipment and optimization of human resources.

Table 3. Operating Income in 2018 and 2019

Pendapatan Usaha (Penjualan Bersih) tahun 2018 dan 2019 (dalam Rp miliar)
Revenues (Net sales) for 2018 and 2019 (in Billion Rp)

Uraian Description	Anggaran Budget	Realisasi Realization		% Realisasi 2019 terhadap % of 2019 realization to	
		2018	2019	Anggaran Budget	Realisasi Realization 2018
A. Induk Perusahaan Parent Company					
1. Produk Senjata Weapon Product	363,77	359,20	303,52	83,44%	84,50%
2. Produk Munisi Munition Product	1.235,55	858,55	768,53	62,20%	89,51%
3. Produk Kendaraan Khusus Special Vehicle Product	1.289,19	698,83	1.068,87	82,91%	152,95%
4. Produk Alat Berat Heavy Equipment Product	749,97	295,94	291,90	38,92%	98,63%
5. Produk Handakkom Commercial Explosives Product	510,28	466,61	478,51	93,77%	102,55%
6. Produk Tempa, Cor & Alat Perkeretaapian Forging, Casting, and Railway Equipment	395,79	216,78	192,08	48,53%	88,61%
Total Induk Perusahaan Total Parent Company	4.544,55	2.895,91	3.103,41	68,29%	107,17%
B. Entitas Anak Subsidiaries					
	634,68	304,99	295,36	46,54%	96,84%
Jumlah Konsolidasi Total Consolidated	5.179,23	3.200,90	3.398,77	65,62%	106,18%

Source: Secondary Data from the Financial Statements of PT Pindad

Realized consolidated sales or operating revenues for 2019 were recorded at IDR 3,398.78 billion or 66% of the 2019 RKAP target, but this success has increased by IDR 197.89 billion or an increase of 6% compared to the realization of consolidated sales in 2018. This increase was driven by operating revenues from Special Vehicle products and Commercial Explosives products which exceeded the 2018 performance.

V. CONCLUSIONS

In 2019, Pindad's performance was considered quite stable with the achievement of satisfactory operational results. The level of sales and net profit in 2019 was successfully increased. Likewise, the overall performance of Pindad has improved. Global economic conditions are still characterized by uncertainty both in terms of geopolitical and economic aspects, due to the full-scale trade war between the United States and China. The effect on Indonesia itself is a negative effect on foreign currency liquidity in the domestic financial market and risks increasing pressure on the Rupiah exchange rate, especially against the United States Dollar.

The challenges are quite severe in terms of international trade related to the trade war, as well as the dynamics of domestic politics, the national economic growth in 2019 has proven to be sustainable and tends to be stable. Through several appropriate strategies, Pindad has managed to get through the dynamic economic situation by showing the achievement of quite good performance. The strategies undertaken by PT Pindad include: Optimizing the use of fixed assets and increasing sales; Efforts to increase profitability; and Efforts to increase working capital (working capital).

VI. RECOMMENDATION

In terms of Transfer of Technology, Researchers expect PT. Pindad to continue to maintain the technology that has been obtained through collaboration with FNSS Defense Systems. However, it would be even better if we were able to develop the technology so that it could become a technology work of its own for PT. Pindad.

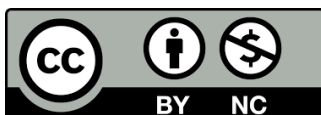
For the Indonesian Armed Forces, researchers hope that the Indonesian Army will rely more on the domestic defense industry in ordering or purchasing defense equipment, so that the domestic defense industry will be more motivated to produce defense equipment in accordance with the TNI's request for MEF (Minimum Essential Force).

REFERENCES

- 1) PT Pindad Annual Report. (2019). Breakthrough, Innovate, Go Global.
- 2) Avianti, Yuniar. 2015. Entrepreneurial Competence: Theory of Confirmation and Application. Yogyakarta: Graha Ilmu.
- 3) Indonesian Defense White Paper. 2015. Ministry of Defense of the Republic of Indonesia.
- 4) Chairil, Tough. 2018. "Independence in the defense sector: an impossible mission for Indonesia?", <http://theconversation.com/kemandirian-di-pertahanan-an-misi-yang-not-possible-bagi-indonesia-99300>, accessed on March 25, 2019,
- 5) Lupitasari, Agustina Rizky. 2021. "Domestic Alutsista Production Is More Reliable" in <https://kompaspedia.kompas.id/>. Retrieved 20 May 2021.
- 6) Marzuki, Peter Mahmud. 1999. "The breadth of patent protection", UII Journal of Law, No. 12 Vols. 6.

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- 7) Oktora, Mochamad Yoesdinar. 2017. "Marketing Communications of PT. Pindad (Persero) in Southeast Asia", Journal of Communication Studies, Volume 5, No. 2.
- 8) The Library of the National Resilience Institute of the Republic of Indonesia in <http://lib.lemhannas.go.id/public/media/catalog/0010121500000010921/swf/1953/mobile/index.html#p=1>.
- 9) Pindad Medium Tank Prototype – FNSS Arrives September 23. (September 12, 2017). Military.or.id. <https://militer.or.id/5700/prototipe-medium-tank-pindad-fnss-tiba-23-september/>, accessed 5 August 2019.
- 10) Saiman, Leonardo. 2015. Entrepreneurship. Jakarta: Salemba Empat.
- 11) Supriyadi, S. 2016. "Community of Practitioners: Alternative Solutions for Sharing Knowledge Between Librarians". Lentera Pustaka: Journal of Library Science Studies, Information and Archives, Vol 2, No 2. in <https://ejournal.undip.ac.id/index.php/libat/article/view/13476>.
- 12) Swastha, Basu and Irawan. 2005. Modern Marketing Management. Yogyakarta: Liberty Yogyakarta.
- 13) Law of the Republic of Indonesia Number 11 of 2019 concerning the National System of Science and Technology Article 29 paragraph (3).
- 14) United Nation Centre on Transnational Corporation And Transfer Technology: Effect And Policy Issues, United Nation, New York, 1982. In the thesis Obstruction of Compulsory Patent Licensing in the Framework of Technology Transfer in Pharmaceutical Companies in Indonesia.
- 15) Uno, Hamzah B. and Lamatenggo, Nina. 2011. Communication and Information Technology Learning. Jakarta: Earth Literacy.



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