How Ethical Guidelines are Upheld within Hypersonic Companies

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On my honor as a University Student, I have neither given nor received unauthorized aid on this
assignment as defined by the Honor Guidelines for the Thesis-Related Assignments

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I. Introduction

A. Background

The development of hypersonic technologies for both civilian and military use has grown significantly in the past few years. Mach number is an object's speed divided by the speed of sound and when an object exceeds mach 5 it is considered to be hypersonic. The market for weapons that reach this hypersonic state is growing very rapidly, with companies like Raytheon Technologies Corporation and Lockheed Martin being key players (*Top Hypersonic Weapons Companies | Hypersonic Weapons Industry Players*, n.d.). The primary customers for these companies are the United States and their allies, such as Australia and Canada.

In this paper I am focusing on Raytheon Technologies, now known as RTX Corporation. RTX is an American aerospace and defense company that aims to "push boundaries and tackle complex problems" (*We Are RTX*, n.d.). RTX has a divisional organizational structure with the following divisions; Collins Aerospace, Pratt and Whitney, Raytheon Intelligence and Space, and Raytheon Missiles and Defense. Collins Aerospace focuses on designing, manufacturing and servicing aircrafts. Pratt & Whitney is renowned in the aerospace industry for its expertise in designing, manufacturing, and servicing aircraft engines. Raytheon Intelligence and Space focuses on advanced intelligence, surveillance and reconnaissance systems. Lastly, Raytheon Missiles and Defense focuses on missile systems and advanced technologies. (*Top Hypersonic Weapons Companies | Hypersonic Weapons Industry Players*, n.d.). With Raytheon having four different divisions that focus on different products and/or services that the company offers, it is clear that Raytheon has a divisional organizational structure. With this, hypersonic technologies can be developed across all four divisions of Raytheon; therefore, Raytheon is a good company to analyze how key players in the hypersonics world approach ethics.

B. Goals for this paper

Currently there is a race to develop hypersonic technologies particularly in two areas; hypersonic missiles for the world militaries and civilian space travel. This intense focus on advancing hypersonic technologies highlights the strategic importance and how closely they are intertwined with power and society. According to Winner, "…we examined ways in which the intractable properties of certain kinds of technology are strongly, perhaps unavoidably, linked to particular institutionalized patterns of power and authority" (Winner, 1980, p. 134). In order to determine these political implications, I am conducting an analysis of how ethics plays a role in hypersonic technologies, specifically within Raytheon Corporation. I am examining hypersonic technologies that can be developed with the help of HEDGE, Hypersonic reEntry Deployable Glider Experiment. HEDGE is a capstone project at the University of Virginia that is focused on testing various material panels at hypersonic speeds during reentry with a cubesat. Hypersonic missiles are just one of several technologies that can be developed from the HEDGE project.

For my STS project, I am analyzing the impact of hypersonic technologies, including hypersonic missiles, within the framework of corporate policies, focusing on their societal implications, particularly within Raytheon Technologies, also known as RTX. I am posing the following question: *How effectively can companies involved in hypersonic technologies incorporate ethical principles into their corporate policies regarding potentially life-threatening technology?* This question is important because hypersonic technologies are new and are developing at a rapid pace. It is important to establish a foundation of ethical guidelines before technology disperses through society. My research question is answered in two main parts. The first one being what ethics statements Raytheon Technologies has made and what those

statements are trying to do. The second part is looking at how well Raytheon Technologies follows the ethical statements they have made.

II. Methods

To determine how effectively hypersonic companies can incorporate ethical principles into their corporate policies regarding potentially life-threatening technology, I am collecting documentation and analyzing their efforts using Actor Network Theory and Framing. The documentation collection includes a literature review which includes technical reports, anecdotal evidence, books and journals. I aim to find sources of information which provide insight on hypersonic companies, in this case the company is Raytheon technologies, and their ethical guidelines. By having the latest information about the projects and work that Raytheon technologies are doing, I am identifying key components needed to apply frameworks and analyze how effectively Raytheon is able to incorporate their ethical guidelines for life threatening technologies. I am conducting an evidence analysis using the documentation collection to qualitatively analyze the concept of hypersonic weapons and ethical viewpoints.

Scholars often utilize Actor Network Theory, a framework for understanding the development of technology and its effect on society. This framework is useful for helping technology developers be more efficient by providing them with more knowledge about how their technology works in society. To apply this framework it is necessary to understand who the actors are, how they connect with each other, where power flows, what actors are considered necessary, and who is left out of the network. An actor can be defined as a source of action. This means that an actor can be a person or group that is credited with activity or acts (Heiskanen & Jolivet, 2010). Identifying obligatory passage points is also crucial, although sometimes it can be challenging. Obligatory passage points are actors that must be in the network for it to function.

The real power lies in how these actors are interconnected (Sismondo, 2009). Once the necessary components are identified and their networks are understood it is possible to try to predict how each will react to the hypersonic technology. Due to hypersonic technology being relatively new this is a good framework to use because it explores all the moving parts, both human and non human. To successfully use the actor network theory framework a method called framing can be used to ensure understanding of relevant actors, networks and effects of technological implementation.

Framing is a method used to gain a deeper understanding of what happens during the introduction of a new technology. This approach involves a process that predicts how different actors will act in their networks with the implementation of a new technology. Having the ability to predict an actor or group's response can result in the introduction of a technology to be more successful. Nevertheless, there are situations, such as unexpected events, in which predicting the effect may not be accurate. The instability and uncertainty of the process is called overflowing. Overflowing can occur if actors do not act in accordance with what was expected from them (Heiskanen & Jolivet, 2010, p. 6748).When using Actor Network Theory, it is important to consider multiple outcomes for various potential problems and create solutions. Doing so can help avoid as much overflow as possible. Overflow is ultimately unpredictable, which makes it difficult to avoid it all together or even prepare for it to happen.

When investigating how hypersonic companies incorporate ethical principles into their corporate policies regarding potentially life-threatening technology, applying the Actor Network Theory impacts ethical implementations by considering the perception of the technology as an actor. This implies that perception is a source of action as it compels other actors to behave in

certain ways. This framework allows for the interpretation of various ethical principles to be an actor in the technological development of hypersonic life threatening technologies.

III.   Results

For my literature review I analyzed technical reports, anecdotal evidence, books and journals. The first text I reviewed was an article by the Harvard business review, which includes an interview with Gregory Hayes, the Raytheon CEO ("Raytheon CEO Gregory Hayes," 2022). In this interview Gregory Hayes speaks on the role of Raytheon technologies in the Ukraine war. This article makes it clear that Raytheon technologies is an important player in the missile distribution for the Ukraine war. The next text I reviewed was the Raytheon ethics and compliance website that plays a vital role in my research. The website includes their 5 company values, resources and initiative, enterprise risk, and anti-corruption policies (*We Are RTX*, n.d.).This text provides information straight from Raytheon Technologies about their company values. In the global trade section of the website, there is a statement on their operations with Russia due to the Ukraine war. This fits in well with the first text because it will provide more background as to how and why Raytheon is involved in the Ukraine war.

The next text I reviewed was an article that argues that looking closely at Raytheon Technologies is important because of global competition and fast-paced technological changes (*Top Hypersonic Weapons Companies | Hypersonic Weapons Industry Players*, n.d.). The article studies how Raytheon's leaders make decisions, handle ethical issues, and engage with society. How the company and society are dealing with the challenges of modern warfare and the ethical use of advanced technology is highlighted. This article connects to my research on how Raytheon Technologies incorporates ethical guidelines by delving into specific instances or policies within Raytheon that demonstrate its commitment to ethical practices. Then, I reviewed

another article that talks about how ethical leadership is a big problem in many fields, especially after scandals (Fulmer, 2004). It explores ideas from business and academic leaders, suggesting ways to address this challenge and develop ethical leadership skills, discussed at a forum by Pepperdine University's Graziadio School of Business and Management. In this article, reasons to be ethical are discussed which highlights the keynote speaker, Daniel Burnham, who is known for being a chairman and CEO for Raytheon Technologies.

Next, I reviewed a chapter from the book, *"Research Handbook on the Arms trade"* written by Andrew T.H. Tan (Davis & Tan, 2020). A section in this chapter evaluates how the character and conduct of warfare will change as a result of the increasing pace of military operations with key importance placed on emerging threats posed by hypersonics. As stated by the Raytheon Technologies CEO in the first source, Raytheon plays a big role in current global conflicts. This source allows me to explore the effects of Raytheon Technology supplying hypersonic missiles. This is essential because the future impacts of decisions made by raytheon technologies in the present day must be considered. Additional texts were reviewed to contribute to the analysis but they are not all included in this literature review due to the literature review focusing on key texts which contribute the most to the analysis.

 IV.   **Analysis**

After analyzing the technical reports, anecdotal evidence, books and journals that provided information on Raytheon, I identified key actors and developed an understanding of the power dynamic of the global network. By identifying the actors within the network and their relationships I am able to start applying actor network theory to Raytheon and their ethical guidelines. The human actors are the Raytheon executives, engineers, shareholders, military,

public and advocacy groups. The non-human actors are the hypersonic technologies being developed, the ethical guidelines, regulations and Raytheon as a corporate entity.
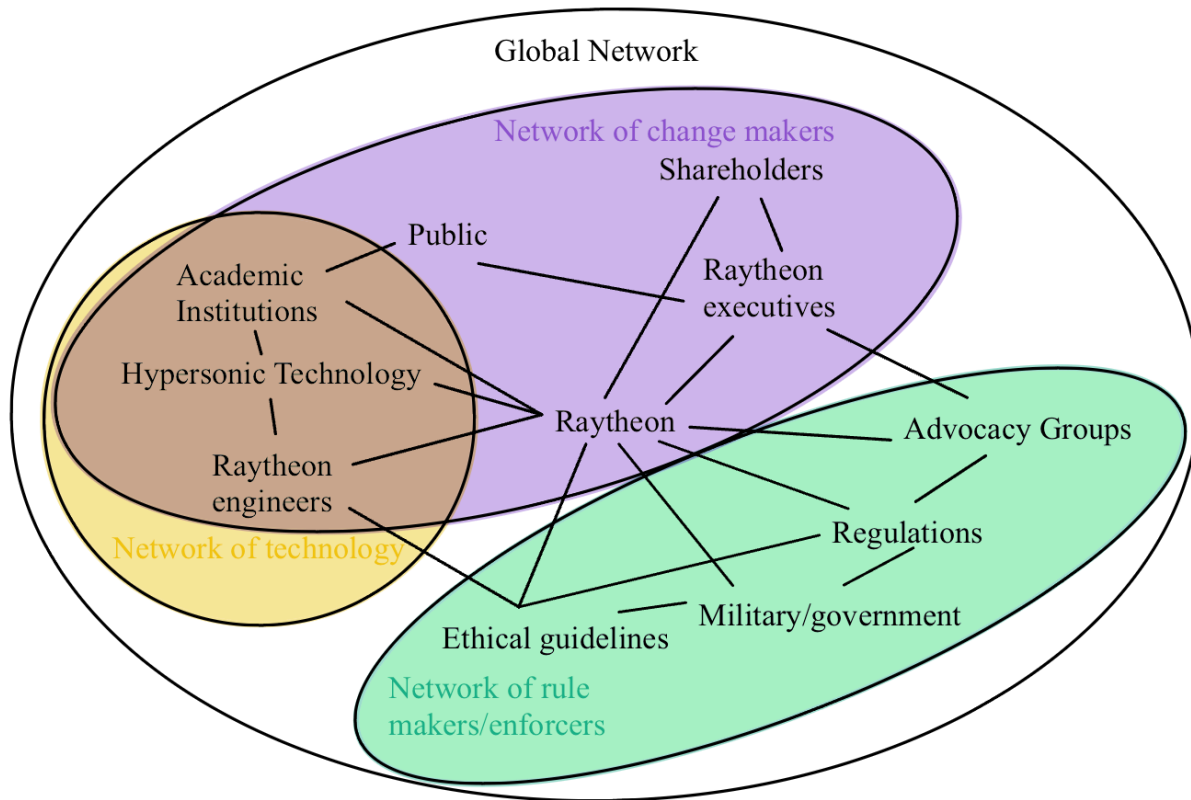

Figure 1. Actor Network Theory Applied to Raytheon Technologies

The actor-network construct shown in Figure 1 utilizes the understanding of framing and overflow in the analysis of Raytheon, enabling the accurate identification of all relevant actors and their networks. Within the global network, smaller networks can be identified based on the actor's relationships and role in the network. Figure 1 shows these smaller networks which can be distinguished by the different colors. These smaller networks are network of technology, network of rule makers/enforcers, network of change makers, and global network. I have placed Raytheon in the center of the global network due to Raytheon having multiple complex connections with other actors.

To uncover why Raytheon has the connections they have with other actors I am identifying what their ethical priorities are. Raytheon's ethical priorities can be seen in two ways; through what they say and their actions. In Raytheon's website it is clearly stated that their core values are trust, collaboration, respect and innovation. Their values are what drive their actions, behaviors and performance. Raytheon even claims that they are working toward a safer and more connected world. They go as far to say that "50% of the world's population is protected by our defense products"(*We Are RTX*, n.d.). Raytheon's statements suggest that their ethical priorities prioritize fostering a trustworthy and respectful work environment, as well as nurturing positive relationships with partners. Additionally, they seem to emphasize the importance of safety and innovation both within their company and in the public sphere.

Raytheon, a corporation specializing in weapons and technologies, must establish clear expectations for itself, its employees, and its partners. They can effectively communicate these expectations by utilizing their code of conduct. In their code of conduct they stress the importance of "can vs should". More specifically they state, "The fact that we can do something does not mean that we should do it. Our values challenge us to consider what the right thing to do is in a given situation—to do right by our company, our customers, our communities, and, above all, to act always with integrity " (*RTX Code of Conduct*, 2020). This shows they aim to put the needs of other actors in the network first. Among these actors are the public, the military, engineers, and shareholders.

Moving from Raytheon's declared ethical priorities to their observable actions offers a revealing comparison of stated principles versus actual conduct in assessing their ethical stance. It is a fact that Raytheon sells the weapons and technologies they manufacture to their customers all over the world (Monterio, 2022). This action that Raytheon takes impacts their relationship

with regulations and advocacy groups. Consider how a country's enemy can sometimes become an ally to another nation. This dynamic poses a significant challenge for companies like Raytheon. They must navigate the delicate balance of remaining loyal to the US while also conducting business deals that prioritize the interests of their stakeholders. Raytheon's relationship with regulations plays an important role because regulations constraint the business that Raytheon can conduct. In 2013, Raytheon and the US State department came to a resolution for a case in which the US state department conducted and extensive review to "address hundreds of civil violations of the Arms Export Control Act (AECA) and the International Traffic in Arms Regulations (ITAR)" (*State Department Announces Resolution of Raytheon Company Arms Export Control Enforcement Case*, n.d.). This highlights Raytheon's obligation to adhere to regulations, as failure to do so results in consequences. Therefore, the relationship between Raytheon and regulations becomes crucial, dictating the company's actions and reinforcing the understanding that repercussions are a result of misconduct.

The Saudi Arabian government has utilized precision missiles manufactured by RTX in conflicts that have resulted in the deaths of innocent lives. Actions like this have caused advocacy groups to also take actions. In the past, advocacy groups, such as Amnesty International, have written letters to Raytheon expressing their concerns about Raytheon not upholding their responsibilities as a company (Insights, 2019). This shows the dynamic interaction between advocacy groups and Raytheon. Advocacy groups publicly criticize and are often opposed to Raytheon's actions, especially when they perceive a breach of human rights. Consequently, Raytheon must address these concerns, as failure to do so could harm their public image.

Moreover, understanding Raytheon's ethical priorities provides context for exploring how financial considerations impact the relationships the company maintains. Financial factors significantly impact many of Raytheon's relationships, including those with shareholders, ethical guidelines, regulations, the military/government, hypersonic technologies, and engineers. Shareholders prioritize profitability and the company's overall performance. Nonetheless, it remains crucial for Raytheon to strike a balance between upholding its values and pursuing financial gains. Raytheon can lose money when they violate regulations because they face fines as a consequence. Raytheon has paid "millions of dollars in civil penalties in the past because of violations of U.S. export control laws" (Monterio, 2022). This circles back to the crucial relationship Raytheon maintains with regulations.

To cover these fines and still turn a profit, which is vital for stakeholders, Raytheon relies on its customers. A "large portion of its revenue comes from U.S. government contracts" (Monterio, 2022). Since the military and government are Raytheon's primary customers, the company must actively maintain a positive relationship with them. This relationship is crucial because it ensures a steady demand for Raytheon's products and affects the company's strategic decisions. Strong ties also help Raytheon stay aligned with governmental and military objectives, fostering ongoing collaboration and trust.

Hypersonic technologies generate a lot of revenue for Raytheon. The company designs weapons and technology for distribution. These technologies must appeal to Raytheon's customers, who are often from the military. One example of hypersonic technology that Raytheon manufactures is missiles. These missiles are designed to explode, as this is their intended purpose. For instance, "The Air Force has awarded Raytheon a $407.6 million contract modification to continue work on the Hypersonic Attack Cruise Missile (HACM) " (Easley,

2024). The financial success of Raytheon's hypersonic technologies is closely tied to their ability to meet and exceed military specifications and needs, ensuring continued investment and development in this high-stakes field. This financial incentive motivates Raytheon to continue working on innovative technology, keeping them at the forefront of defense technology.

Engineers that work for Raytheon require compensation and benefits. "The company has an incredible employee benefits program and has invested over $1B in advancing the education of its workforce" (Monterio, 2022). Offering competitive pay and benefits motivates engineers and contributes to their job satisfaction. It enables them to receive the support necessary to perform their work effectively and advance in their careers. The engineers play a crucial role as they possess the most in-depth knowledge about the technology being developed, given that they work with it firsthand. This highlights the importance of Raytheon investing in its employees.

Shifting focus from the impact of financial considerations on Raytheon's relationships, it's crucial to explore how limited information, such as classified data, affects not only the company's interactions with the public and its engineers but also its engagements with academic institutions. The public often struggles to stay informed about Raytheon's latest developments due to the classified nature of much of the company's work. In their code of conduct, they stress the importance of "Protecting our Intellectual Property and confidential information is crucial to delivering on our commitment to excellence and to the future of our business." (*RTX Code of Conduct*, 2020). This strains the relationships between Raytheon and its engineers because, to conduct classified business, Raytheon must depend on and trust that its engineers will not disclose classified information. Consequently, the public only receives general information and lacks specific details. Frequently, the public learns about Raytheon's actions after the fact. While Raytheon does take public reaction into account, the public's influence is often limited. Recently,

"protesters called for an immediate ceasefire in the region and for workers and unions to refuse to participate in helping arm the Israeli military" ("Pro-Palestinian Protesters Target Raytheon in El Segundo," 2023). This shows how the public expresses its views after Raytheon has conducted its business.

As we consider Raytheon's interactions with the public, it's also important to explore how the company engages with academic institutions and the implications of these connections. The connection between Raytheon and academic institutions is complex, taking on various forms. Raytheon frequently collaborates with these institutions to conduct research or review previous studies. For instance, the University of Virginia's hypersonic reentry deployable glider experiment aims to identify optimal materials for hypersonic applications, which benefits Raytheon's system improvements. Moreover, both Raytheon and academic institutions often invest in each other. Due to the recent Israel-Palestine conflict, this type of relationship has sparked nationwide student protests. For example, "UMass Amherst Students for Justice in Palestine are asking their university to cut ties with companies like Raytheon, who have supplied weapons to Israel in the war in Gaza." (*UMass Pro-Palestinian Protesters Ask University to Divest from Raytheon*, n.d.). The public is not shy about speaking up when they think Raytheon is doing something unethical. However it is important to remember that the public ethical priorities will not always align with Raytheon's ethical priorities.

V.   **Discussion**

The knowledge I acquired about the dynamics can help companies effectively incorporate ethical principles by giving them a better understanding about how their network works. From the results of applying actor network theory it is clear that there are many different players that play a big role on how ethics are incorporated in a company and their work. Understanding how

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different individuals and groups influence decision-making within a company is vital for making sure ethical principles are integrated into the way the company operates (Santa Clara University, n.d.). By understanding who has power and influence, what they care about, and what motivates them, a company can make sure its ethical guidelines reflect the needs of everyone involved. For example, knowing what government rules and regulations are relevant helps a company make policies that follow the law and manage any risks. It's also important to consider what the customers and users of the company's products need. If a company like Raytheon Technologies makes products for defense, understanding what the military needs helps them make sure their products are safe and reliable. This kind of knowledge also helps a company anticipate and handle any conflicts between making a profit and being ethical. Advocacy groups ensure to highlight any ethical violations Raytheon may commit.

This kind of knowledge also helps build a company culture where being ethical is important. For example, including ethical training in how employees are trained helps them understand how their actions can affect other people (*We Are RTX*, n.d.). Understanding how different people and groups in the company influence decisions also helps the company explain its ethical choices. Being open and honest about why the company makes certain choices can build trust with everyone involved (Fulmer, 2004). This understanding also assists a company in anticipating and managing situations where ethical decisions may be challenging. It enables the company to uphold its values, even among changing circumstances or when faced with difficult choices.

In conclusion, my analysis offers several benefits. Understanding the structure of the network presents an opportunity to enhance public relations and minimize risks. This can be achieved by identifying which actors have the strongest connection with the public and

understanding the public's primary concerns. Additionally, improved decision-making is possible by identifying the appropriate individuals to consult or rely on for decisions. The global network figure indicates that engineers are the most knowledgeable about the company's technologies, highlighting the importance of clear communication between executives and engineers.

As a member of the public, I've learned it's crucial to know what the companies I support are up to and make sure their projects match my values. As someone who is soon to become an engineer, I see how important it is to choose a company that aligns with my values so I can enjoy my work and be proud of what I do. This research really shows that relationships within networks can get pretty complex. However, even though Raytheon is a big name in hypersonic technologies, it doesn't represent all companies in the field. It's important to remember that different companies might operate differently and have their own unique cultures.

As I look into the future, there's a definite opportunity to broaden the scope of Actor-Network Theory (ANT) analysis by studying other companies with different ethical guidelines and policies. By comparing these companies, I can gain deeper insights into the effectiveness of various approaches to incorporating ethical principles into corporate operations. For example, diving into companies with a strong sustainability focus may uncover unique actor networks and power dynamics that are crucial for achieving environmental goals. Similarly, analyzing companies with a commitment to social responsibility can highlight how the interactions between different stakeholders shape decision-making processes.

Furthermore, delving into companies that have previously faced ethical challenges and implemented robust ethics programs can offer valuable lessons and best practices. By studying these instances, I can grasp how companies address ethical dilemmas and adapt their networks to promote ethical behavior. In conclusion, my future work in ANT analysis should involve a

comprehensive examination of companies across diverse industries and ethical frameworks. By comparing the networks and effectiveness of these companies, I aim to develop a deeper understanding of how different approaches to incorporating ethical principles can shape corporate behavior and performance. This knowledge will ultimately aid companies in enhancing their own ethical guidelines and policies, fostering a more responsible and sustainable business environment.

Bibliography

Brutzman, D. P., Blais, C. L., & Wu, H.-F. (2020). *Ethical Control of Unmanned Systems:*

Lifesaving/Lethal Scenarios for Naval Operations (p. 104) [Technical].

https://apps.dtic.mil/sti/pdfs/AD1118298.pdf

Callon, M. (1998). An Essay on Framing and Overflowing: Economic Externalities Revisited by

Sociology. *The Sociological Review*, *46*(1_suppl), 244–269.

https://doi.org/10.1111/j.1467-954X.1998.tb03477.x

Davis, M., & Tan, A. T. H. (2020). Technological change, future wars and the arms trade. In

Research Handbook on the Arms Trade (p. 456). Edward Elgar Publishing.

Definition of HYPERSONIC. (2023, October 19). Merriam Webster.

https://www.merriam-webster.com/dictionary/hypersonic

Disruptive technology: Unleashing Innovation Strategy with Disruptive Technologies. (n.d.).

FasterCapital. Retrieved February 29, 2024, from

https://fastercapital.com/content/Disruptive-technology--Unleashing-Innovation-Strategy-with

-Disruptive-Technologies.html

Ethically Aligned Design: A Vision for Prioritizing Human Well-being with Autonomous and

Intelligent Systems Version 2. (n.d.). Retrieved November 15, 2023, from

https://apps.dtic.mil/sti/citations/AD1170922

Ethics and Compliance. (n.d.). Retrieved October 28, 2023, from

https://www.rtx.com/who-we-are/ethics-and-compliance

Fulmer, R. M. (2004). The Challenge of Ethical Leadership. *Organizational Dynamics*, *33*,

307–317. https://d1wqtxts1xzle7.cloudfront.net/8405849/w155-libre.pdf?

Insights, A. G. (2019, January 16). Missing targets: the legal and ethical blind spots of arms manufacturers. *Amnesty Insights*. https://medium.com/amnesty-insights/missing-targets-the-legal-and-ethical-blind-spots-of-arms-manufacturers-989619d42b73

ISO - International Organization for Standardization. (n.d.). ISO. Retrieved February 29, 2024, from https://www.iso.org/home.html

Jolivet, E., & Heiskanen, E. (2010). Blowing against the wind—An exploratory application of actor network theory to the analysis of local controversies and participation processes in wind energy. *Energy Policy*, *38*(11), 6746–6754. https://doi.org/10.1016/j.enpol.2010.06.044

Lele, A. (2019). *Debating Lethal Autonomous Weapon Systems*.

Mikayla Easley. (2024, January 12). Raytheon to receive $407M for 'enhancements' to Air Force hypersonic missile. *DefenseScoop*. https://defensescoop.com/2024/01/12/raytheon-hacm-contract-2023/

Monterio, J. (2022). Raytheon Technologies Corporation: An Analysis of Leadership, Ethics, and Social Responsibility. *Journal of Global Awareness*, *3*(1). https://doi.org/https://doi.org/10.24073/jga/3/01/07

Pro-Palestinian protesters target Raytheon in El Segundo. (2023, November 13). *KTLA*. https://ktla.com/news/pro-palestinian-protesters-target-raytheon-in-el-segundo/

Raytheon CEO Gregory Hayes: How Ukraine Has Highlighted Gaps in US Defense Technologies. (2022, March 25). *Harvard Business Review*. https://hbr.org/2022/03/raytheon-ceo-gregory-hayes-how-ukraine-has-highlighted-gaps-in-us-defense-technologies

RTX Code of Conduct. (2020).

    https://rtxspeakuphelpline.webline.sai360.com/RTX-Code-of-Conduct-English_200317.pdf

Santa Clara University. (n.d.). *A Framework for Ethical Decision Making*. Retrieved February

    29, 2024, from

    https://www.scu.edu/ethics/ethics-resources/a-framework-for-ethical-decision-making/

Sismondo, S. (2009). Actor Network Theory. In *An introduction to science and technology*

    studies (2nd ed., pp. 81–92). Wiley.

State Department Announces Resolution of Raytheon Company Arms Export Control

    Enforcement Case. (n.d.). U.S. Department of State. Retrieved May 2, 2024, from

    //2009-2017.state.gov/r/pa/prs/ps/2013/04/208655.htm

Stuart, T. R. (2023). *Defining Core Manufacturing Capabilities at Raytheon Missiles & Defense*

    [Thesis, Massachusetts Institute of Technology]. https://dspace.mit.edu/handle/1721.1/151439

The Mapping Project, Entity: Raytheon. (n.d.). Retrieved April 19, 2024, from

    https://mapliberation.org/plain/entities/Raytheon.html

Top Hypersonic Weapons Companies | Hypersonic Weapons Industry Players. (n.d.). Retrieved

    February 13, 2024, from

    https://www.marketsandmarkets.com/ResearchInsight/hypersonic-weapons-market.asp

UMass pro-Palestinian protesters ask university to divest from Raytheon. (n.d.). Retrieved May

    2, 2024, from

    https://spectrumnews1.com/ma/worcester/news/2024/05/02/umass-amherst-students-justice-pa

    lestine

Warrick, J. (2024, April 16). Russian weapons help Iran harden defenses against Israeli airstrike.

    Washington Post.

https://www.washingtonpost.com/national-security/2024/04/15/iran-israel-russia-drones-missil

es/

We Are RTX. (n.d.). Retrieved February 13, 2024, from

https://www.rtx.com/who-we-are/we-are-rtx