Performance Task 1--- Tier 1 Source Organizer

What factors do companies need to consider to manage technological waste?

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| **What are your three current ideas for an Inquiry Question?** |
| In what ways can the perception of the natural world be molded by technological developments in the 21st century? |
| How does technology influence accessibility to the natural world? Do the benefits of technology outweigh many cons regarding nature? |
| In what ways does the production of electronic devices influence natural resource depletion and ecosystem degradation? |

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| **List 10 potential search terms you could look for in order to try to find an answer(s) to your Inquiry Question(s)** | |
| Accessibility | Perception of Nature AND Impact of Technology |
| nature | Impact of Technology AND Natural Reserves |
| Ecosystem degradation | Global Warming in the last Century |
| Production of Electronic Devices | Nature AND psychological wellbeing |
| 21st century technology | Pros and cons of technology |

**As a group, you need to find 6 Tier 1 sources that you could potentially use for this project.**

**Use EBSCO (through AP Classroom), Inspire, Google Scholar, and other similar resources.**

**Experiment with different combinations of search terms.**

**Print/Download PDF copies of all sources.**

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| **MLA Citation** |
| MARÍA GONZÁLEZ-ANLEO, J. *et al.* Sociodemographic Impact on the Adoption of  Emerging Technologies. **Journal of Small Business Strategy**, *[s. l.]*, v. 34, n. 2, p. 42–80, 2024. DOI 10.53703/001c.122089. Disponível em: <https://research.ebsco.com/linkprocessor/plink?id=1e71e6e1-a83c-3038-98c2-cd9733ee7c2e>. Acesso em: 3 out. 2024. |
| **3 Key Quotes** |
| “advances in automation and AI will mark a turning point in global sectoral transformation.” |
| “factors such as perceived usefulness and perceived ease of use influence attitudes towards technology.” |
| “gender and age influence the acceptance of emerging technologies, particularly in the field of AI and robotics.” |
| **5 Sentence Summary of the Source’s Argument/Findings (In Your Own Words)** |
| This source presents the main argument that gender and age can play a big role in how people accept the new developments in technology in our world. Through surveys and other data that they presented, they argue that men are usually more interested in technologies such as AI and robots than women are. There seem to be fears in the general population that these technologies will lead to dehumanization. However, they state that training people on the uses of AI will create more comfort with the subject. Overall, this source helps to see important insights on how different groups will be able to accept AI and robots. |
| **5 Sentence Commentary About How This Article Helps Answer One of Your Inquiry Questions (In Your Own Words)** |
| This source helps to contribute to the question of “In what ways can the perception of the natural world be molded by technological developments in the 21st century?” It is a good contribution to this question because it provides insight on how people in general are affected by technology which is a big factor in this inquiry question. The way in which people consider technology and feel about it can play a major role in their usage. This could be looked into further to ask the question of which demographics may be causing more changes to the natural world. |

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| **MLA Citation** |
| Alabi, Okunola A., et al. “Environmental Contamination and Public Health Effects of Electronic Waste: An Overview.” *Journal of Environmental Health Science & Engineering*, Apr. 2021, pp. 1–19. *EBSCOhost*, <https://doi.org/10.1007/s40201-021-00654-5>. |
| **3 Key Quotes** |
| “Results: High production volume coupled with indiscriminate disposal and informal recycling has made electronic waste (e-waste) to become a global public and environmental health issue” |
| “That e-waste contains constituents that cause adverse environmental effects and toxicity to the biota. However, there is an enormous data gap between exposure quantification and possible health effects.” |
| “There is a constant increase in the demand for new and sophisticated electronics, which has also greatly increased the rate of generating and the quantity of generated electronic wastes (e-wastes). E-wastes have contributed significantly to the world’s growing waste problem [1] with a yearly worldwide generation of about 20–50 million tones [2]. In 2019, the global e-waste generated was about 53.6 million metric tons (Mt), which is an equivalent of 7.3 kg per capita. By the year 2030, the amount of e-waste generated is expected to exceed 74 Mt. Thus, e-wastes global quantity is annually increasing at an alarming rate of about 2 Mt [3]. This has made e-waste the fastest growing waste stream in the world, fueled majorly by an increased rate of consumption of electrical and electronic equipment (EEE), shorter life span, and few repair” |
| **5 Sentence Summary of the Source’s Argument/Findings (In Your Own Words)** |
| This source’s main argument is with the constant increase in production of electronic devices, there comes electronic waste. Electronic waste is hazardous and toxic which raises a rapidly growing public health issue. Many components such as heavy metals and persistent organic pollutants have been shown to contaminate air, soil, and water, which leads to significant health risks. The article also talks about the need for more research to better understand the full extent of these risks and to address the increasing volume of e-waste. |
| **5 Sentence Commentary About How This Article Helps Answer One of Your Inquiry Questions (In Your Own Words)** |
| *// In what ways does the production of electronic devices influence natural resource depletion and ecosystem degradation? //*  This article would help in making sense of the impact of electronic waste on nature and health. Why there should be more research to better understand the topic |

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| **MLA Citation** |
| Works Cited  “Technology and/or Nature: Denatured/Renatured/Engineered/Artifacted Life?” *Ethics & the Environment*, vol. 22, no. 1, Spring 2017, pp. 41–62. *EBSCOhost*, https://doi.org/10.2979/ethicsenviro.22.1.03. |
| **3 Key Quotes** |
| “...in this Anthropocene Epoch, it is worth remembering that the research scientist stays in search of, mindful of, the remarkable natural properties on which technology depends. The engineer does craft novel and non-natural machines, but the thoughtful engineer will always recall that human art has no independent powers of its own.” |
| “Human agriculture, construction, and mining move more earth than do the natural processes of rock uplift and erosion (Wilkinson and McElroy 2007). These human activities alter the composition of the atmosphere, the soil, levels of biodiversity, energy flows within food webs, and produce novel ecosystems.” |
| “In another survey, using three categories, researchers find the proportions of Earth’s terrestrial surface altered as follows: 1. Little disturbed by humans, 51.9% 2. Partially disturbed, 24.2 %.. 3. Human dominated, 23.9%. Factoring out the ice, rock, and barren land, which supports little human or other life, the percentages become: 1. Little disturbed, 27.0%. 2. Partially disturbed 36.7%. 3. Human dominated 36.3%. Most habitable terrestrial nature is dominated or partially disturbed by people (73.0%). Still, nature that is little or only partially disturbed remains 63.7% of the habitable Earth (Hannah et al 1994).” |
| **5 Sentence Summary of the Source’s Argument/Findings (In Your Own Words)** |
| This source talks about the human’s technological control over nature. In order to do so, this source examines how the technosphere is bypassing the biosphere. This article states that human-controlled worlds are ruining the natural world, but this has been happening since history. Therefore, this academic journal shows how humans are ruining the natural world by using technology to degrade the current nature. The research paper also accomplishes this by showing how areas such as Antartica are left primarily without devastation as human technology is not present in that area. |
| **5 Sentence Commentary About How This Article Helps Answer One of Your Inquiry Questions (In Your Own Words)** |
| This source talks about how the human’s natural drive is being taken by technology, thus leading to lower rates of nature preservation. This source talks heavily about the Anthropocene Epoch, an era where humans and technology will be the determinant of the Earth’s future. This connects to the inquiry question about what the pros and cons of technology in the perception and preservation of nature are, as this source talks about how the technosphere is replacing the biosphere. Additionally, by examining how humans are entering a world where they can completely control the natural world, this source examines the cons of a technology-filled world on the perception of nature. Therefore, it can be concluded that a forward-drive in technology that bypasses the natural function of the world can produce a society where nature is controlled entirely by humans and can prevent the perception of true nature. |

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| **MLA Citation** |
| Alanazi, Mohammed Owayrif, et al. “Nature-Based Virtual Reality Feasibility and Acceptability Pilot for Caregiver Respite.” *Current Oncology*, vol. 30, no. 7, July 2023, pp. 5995–6005. *EBSCOhost*, <https://doi.org/10.3390/curroncol30070448>. |
| **3 Key Quotes** |
| “Virtual reality technology provides an immersive three-dimensional sensory experience in visual, auditory, and spatial domains and has been used effectively in healthcare settings” |
| “nature-based experiences delivered through VR could effectively emulate the sense of being outdoors, potentially providing a source of respite for CGs.” |
| “participants suggested that they found VR easy to use (feasibility) and that they had a positive experience overall (acceptability).” |
| **5 Sentence Summary of the Source’s Argument/Findings (In Your Own Words)** |
| This article helps us to understand both the feasibility and acceptability of virtual reality nature experiences that can help caregivers in their work with patients. They participated in a 10-minute VR session and recorded that there were very minimal VR symptoms afterwards. There were generally all positive perceptions of the peoples experience with their VR time, stating that there was a lot of emotional benefits to it. The study suggests that these VR techniques could be valuable to many caregivers and how they care for patients, providing new and flexible treatments. More research in the future will have a larger sample of caregivers and patients to widen results. |
| **5 Sentence Commentary About How This Article Helps Answer One of Your Inquiry Questions (In Your Own Words)** |
| This article helps us answer the inquiry question of “In what ways can the perception of the natural world be molded by technological developments in the 21st century?” It dives into specifically VR and its depictions of nature as well as how they can be used. We see that caregivers can use some VR programs with patients to give them a nature experience without having to leave the comfort of their rooms. While their perception of nature may then be skewed, at least they have something there to remind them of nature. These developments in our world are important to explore as they can make huge differences in many people’s lives. |

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| **MLA Citation** |
| Kahn, Peter H., et al. “The Human Relation With Nature and Technological Nature.” *Current Directions in Psychological Science*, vol. 18, no. 1, Feb. 2009, pp. 37–42. *EBSCOhost*, https://doi.org/10.1111/j.1467-8721.2009.01602.x. |
| **3 Key Quotes** |
| “Entire television networks, such as the Dis- covery Channel and Animal Planet, provide us with mediated digital experiences of nature: the lion’s hunt, the Monarch’s migration, or a climb high into the Himalayan peaks. Video games like Zoo Tycoon engage children with animal life. Zoos themselves are bringing technologies such as webcams into their exhibits so that we can, for example, watch animals from the leisure of our home or a cafe ́.” |
| “Taking both studies together, the plasma nature window ap- pears better than no nature but not as good as actual nature.” |
| “At first glance, such a finding would speak to how we can improve human life: When actual nature is not available, substitute technological nature. But such substi- tutions contribute to an insidious problem.” |
| **5 Sentence Summary of the Source’s Argument/Findings (In Your Own Words)** |
| This source uses many data, such as collecting in-person data using children’s responses. By doing so, this source tests if being accessed to technological nature is as beneficial as being accessed to real nature. To do this, this research article tests children’s responses to the questions about the morality of nature. Then, children were also exposed solely to technological nature, through a TV, and children were exposed purely to real nature. By doing this, this study concludes that access to technological nature when real nature isn’t available is useful, but it is not a substitute for real nature. |
| **5 Sentence Commentary About How This Article Helps Answer One of Your Inquiry Questions (In Your Own Words)** |
| This source benefits my inquiry question about the benefits and harms of technology, by comparing the uses and the negatives of technology. Since this study concludes that technological nature, that is perception of nature from a technology standpoint, is useful when real nature is unavailable, it supports the positives of the technology use to perceive nature is one is unable to access nature. Additionally, since this study also concludes that technology is not a substitute for real nature, it supports the negatives of technological nature. Therefore, it can be concluded that technology can be both beneficial and harmful in the perception of technology. This is because technology can be used when the person cannot perceive true nature, but technology is not a substitute for the perception of true nature when a person is able to perceive the nature. |

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| **MLA Citation** |
| Ren, Shaolei. “The Uneven Distribution of AI’s Environmental Impacts.” *Harvard Business Review*, 15 July 2024, hbr.org/2024/07/the-uneven-distribution-of-ais-environmental-impacts. |
| **3 Key Quotes** |
| The training process for a single AI model, such as a large language model, can consume thousands of megawatt hours of electricity and emit hundreds of tons of carbon. This is roughly equivalent to the annual carbon emissions of hundreds of households in America |
| The strain on local freshwater resources imposed by the substantial water consumption associated with AI, both directly for onsite server cooling and indirectly for offsite electricity generation, can worsen prolonged droughts in water-stressed regions like Arizona and Chile |
| Unfortunately, there remains a widening disparity in how different regions and communities are affected by AI’s environmental impacts. In many cases, adverse environmental impacts of AI disproportionately burden communities and regions that are particularly vulnerable to the resulting environmental harms. |
| **5 Sentence Summary of the Source’s Argument/Findings (In Your Own Words)** |
| The artiycle highlights the environmental impact of AI, particularly the large amounts of electricity and water used to train big models, which increse carbon emissions and strain local water supplies. At risk regions are already dealing with droughts and high energygh costs and are getting hit by the hardest bgy these demands. Current efforts to reduce AI's environmental footprint focuses only on overall emissionand ignore how the impact is unevenly distributed. The authors talk about for more solutions, like shifting AI computing to less-afjfected areas. This would help reduce the burden on disadvantaged regions. |
| **5 Sentence Commentary About How This Article Helps Answer One of Your Inquiry Questions (In Your Own Words)** |
| This article provides valuable insight into how companies can manage technological waste by highlighting the envirmentl imgpacts of AI, such as energy consution, water usage, and carbon emissions. It underscores the importance of considering both the direct and indirect environmental costs, including resouyrce strain on some regions. Companies need to factor in not just the total environmental footprint but also the uneven distribution of those impacts, ensuring that AI development doeys not disproportionately harm certain communities. The discussion on sustainable practices, such as optigmizing |