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Slide 1: Introduction

- **Title:** Smart Home IoT Devices
- **Objective:** Provide an overview of the chosen communication system, setting the stage for the subsequent slides.
- **Content:** Brief history of IoT, introduction to smart home devices, and their significance in modern society.

Slide 2: Technical Operation of the System

- **Objective:** Delve deep into the technicalities of how the system operates.
- **Content:**
    - Explanation of different providers / options, such as Google Home, Amazon Alexa, Apple HomeKit, as well as more open solutions like home assistant, zigbee, simple radio, and many others
    - Factors like frequency band, bandwidth, and modulation/demodulation. Also, the use of WIFI / Wired systems, and wifi vs “smart hub” and other wireless standards
    - Real-world examples of devices and their technical specifications.

Slide 3: Historical Perspective

- **Objective:** Understand the origins and evolution of the system.
- **Content:**

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- Timeline of the development of smart home IoT devices. An overview of the different technologies, and why they were obsolete with new options.
- Key milestones in the evolution of technology.
- Challenges faced and solutions developed over time. Such as security, the reliance on outside servers, etc.

Slide 4: Stakeholders

- **Objective:** Identify and understand the key players in the ecosystem.
- **Content:**
  - Detailed profiles of each stakeholder group.
    - The big boys, Apple / Google / Amazon, the more open technologies / standards, Thread, Zigbee, LoRa, Z-Wave. ZigBee is used by Philips Hue, Logitech, LG, and Samsung and Z-Wave is used by Honeywell, GE, and Samsung. Thread is a newer standard (used by Apple, Google, and Nanoleaf) that creates a mesh network without a hub. Then there's Bluetooth / BLE. Also on wired side control4, knx, or loxone.
  - Historical changes in stakeholder dynamics.
  - Predictions on how stakeholder relationships might evolve in the future.

Slide 5: Societal Impact

- **Objective:** Gauge the influence of technology on society.

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- **Content:**
    - Current societal benefits of smart home IoT devices.
    - Potential negative impacts and challenges. Ease and convenience, smarter and safer homes IE if fall you can call for help, anti-burglar systems, air quality monitoring and baby monitors. Also, downsides, hacks, security breaches, and dependence. Highlight cases of people losing access to their accounts, like the guy accused of being racist by an Amazon driver and the Not a Pedophile dad.
    - Predictions on how societal impacts might change in the future, backed by data and research. Highlight cases such as Eufy's lying (https://www.theverge.com/2022/11/30/23486753/anker-eufy-security-camera-cloud-private-encryption-authentication-storage) and other massive security issues. Mention Chicago's ability to hook up your cameras to the city wide surveillance network. Amazons' doorbell giving video access to cops. https://www.malwarebytes.com/blog/news/2022/07/ring-shares-data-with-police-without-consent-but-its-in-good-faith-says-amazon#:~:text=Ring%2C%20the%20Amazon%2Downed%20company,a%20warrant%20or%20court%20order.
      https://arstechnica.com/tech-policy/2022/07/amazon-finally-admits-giving-cops-ring-doorbell-data-without-user-consent/

Slide 6: Credible Sources

- **Objective:** Establish credibility and showcase thorough research.

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- **Content:**
    - Detailed breakdown of each source.
    - Key findings from each source.
    - How each source contributes to our understanding of the topic.

Slide 7: Demonstration Ideas

- **Objective:** Provide a practical, hands-on understanding of the subject.
- **Content:**
    - Step-by-step breakdown of the primary concept demonstration.
        - We are thinking of doing a demonstration of turning on a light, and showing the different ways technologies go about this. 3 different examples of smart home tech turning a light on and off. Then we show the spectrum / transmission of the communication, and try to decode it, if possible.
    - Potential challenges and solutions. Maybe simulate long distance / thick walls with an obstruction. Can't make interference, but something along those lines.
    - Overview of the backup plan, with a rationale for its inclusion. Backup could be a single technology demonstration, instead of three.

Slide 8: Rationale for Choice

- **Objective:** Justify the focus on specific communication standards.

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- **Content:**
    - Detailed analysis of the chosen communication standards.
    - Comparison with other potential standards.
    - Explanation of the significance of the chosen standards in the broader IoT ecosystem. Focusing on closed / open solutions.

Slide 9: Conclusion

- **Objective:** Recap the presentation and open the floor for questions.
- **Content:**
    - Summary of key points discussed.
    - Potential future developments in the field.
    - Invitation for questions and further discussion.

Demonstration Details:

- **Objective:** Showcase the practical application of the concepts discussed in the presentation.
- **Content:**
    - Detailed plan for the demonstration, including setup, execution, and conclusion.
    - List of required materials and software, with a plan for acquisition. We will split the cost of them probably. We need at least a zigbee (ikea has a good kit), and I have a homepod mini.
    - Explanation of the relevance of the demonstration to the chosen area of investigation.

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- Strategies to engage the audience and make the demonstration interactive and informative.

Final Thoughts:

This presentation aims to provide a comprehensive overview of smart home IoT devices, from their technical operation to their societal impact. Through detailed research, practical demonstrations, and engaging content, we hope to enlighten our colleagues and contribute to the broader understanding of this crucial topic.

Note: This expanded outline provides a more in-depth structure for the presentation. Each section can be further elaborated upon with visuals, data, and examples to ensure a comprehensive and engaging presentation.