

**Digital Needs and the NICE Framework**

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Maslow's Hierarchy of Needs outlines five levels of human motivation, beginning with basic survival and progressing to self-fulfillment. In today's digital age, technology influences each of these levels, and the National Initiative for Cybersecurity Education (NICE) Framework plays a critical role in supporting the secure and effective delivery of these technological services. The NICE Framework, developed by the National Institute of Standards and Technology (NIST), provides a standardized taxonomy for describing cybersecurity work roles, knowledge, and skill sets across both the public and private sectors (National Institute of Standards and Technology, n.d.; National Initiative for Cybersecurity Education, n.d.). By exploring how digital tools and cybersecurity roles contribute to each level of Maslow's hierarchy, we can better understand the intersection of human needs and digital infrastructure.

At the foundation of Maslow's pyramid are physiological needs and the basic requirements for human survival, such as food, water, sleep, and warmth. Technology helps individuals meet these needs in increasingly efficient and accessible ways. For example, smart

devices and wearables like the Apple Watch or Fitbit monitor vital signs, sleep patterns, and physical activity, encouraging healthier lifestyles. Additionally, online grocery delivery services such as Amazon Fresh or Instacart allow users to obtain food and essentials without leaving their homes, especially vital during emergencies or for people with mobility limitations. Behind these technologies are critical infrastructure and systems managed by professionals within the NICE Framework's "Implementation and Operation" category. These roles include network operations specialists and systems administrators who ensure that the platforms people rely on for their basic needs are stable, accessible, and secure (National Initiative for Cybersecurity Education, n.d.).

The next level, safety needs, encompasses personal and financial security, health, and overall stability. As people increasingly conduct their lives online, cybersecurity becomes essential for protecting private information, maintaining trust, and ensuring continued access to services. Individuals use tools such as antivirus software, virtual private networks (VPNs), and multi-factor authentication to guard against data breaches and identity theft. Additionally, secure telehealth platforms enable patients to consult doctors remotely, especially important for those in rural areas or during public health crises. These services are made possible through the work of cybersecurity professionals in the "Protection and Defense" category of the NICE Framework. Roles such as vulnerability analysts, threat intelligence specialists, and incident responders play a vital part in identifying and mitigating risks, ensuring that users can interact with digital platforms safely and with confidence (National Institute of Standards and Technology, n.d.).

Moving to the third level, love and belonging, we find that technology enables connection and community, even across great distances. Social media platforms like Facebook, Instagram, and Snapchat allow users to share their lives, maintain relationships, and participate

in communities that align with their interests. Communication apps such as WhatsApp, Zoom, and Discord facilitate both personal and professional interactions. Even online gaming platforms, where players collaborate or compete, provide meaningful social experiences. However, these platforms must remain safe and respectful spaces, which is where NICE roles in “Investigation” and “Cybersecurity Intelligence” come into play. Cybercrime investigators and cyber intelligence analysts monitor threats such as cyberbullying, harassment, or the spread of misinformation, ensuring that digital communities remain inclusive and secure (National Institute of Standards and Technology, n.d.).

The fourth level, esteem needs, refers to an individual’s desire for recognition, achievement, and respect from others. Digital platforms increasingly provide opportunities for users to build personal brands, demonstrate skills, and receive validation. LinkedIn, for example, allows professionals to share achievements and connect with potential employers, while platforms like GitHub or Behance enable creators to showcase their portfolios. Furthermore, online learning platforms such as Coursera, edX, or Udemy empower individuals to gain new certifications and expand their expertise. These tools boost self-confidence and help users feel valued for their contributions. Within the NICE Framework, professionals in “Oversight and Governance” help shape the systems and policies that support learning and professional development. Roles like cybersecurity policymakers and workforce development managers ensure that programs are in place to recognize achievement, provide equitable opportunities, and support career growth in the digital space (National Initiative for Cybersecurity Education, n.d.).

Finally, at the top of Maslow’s hierarchy is self-actualization, the fulfillment of one’s potential and the pursuit of creativity, purpose, and personal growth. Technology serves as a powerful enabler of this stage. Content creation tools like Adobe Creative Suite, Canva, and

video editing software provide the means for artistic expression. Platforms like YouTube, Medium, and TikTok allow individuals to share their voices with global audiences. Additionally, many people contribute to open-source software or participate in online forums to collaborate, mentor, or build tools for social good. This digital self-expression and innovation are sustained by the “Design and Development” category of the NICE Framework. Roles such as secure software developers, user experience designers, and R&D specialists build and maintain the creative platforms that allow individuals to grow intellectually and emotionally, while ensuring that security is integrated into those tools from the start (National Institute of Standards and Technology, n.d.).

In conclusion, Maslow’s Hierarchy of Needs remains deeply relevant in our digital era, and each level can be connected to specific technologies that support and enhance human well-being. The NICE Framework ensures that the digital services people rely on are safe, reliable, and aligned with their needs. From securing food delivery systems to enabling creative self-expression, cybersecurity professionals help maintain the digital environments in which individuals meet their most fundamental needs and pursue their highest aspirations. As our lives become more intertwined with digital tools, understanding this relationship becomes essential not only for personal growth, but for the secure development of our global society.

## References

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