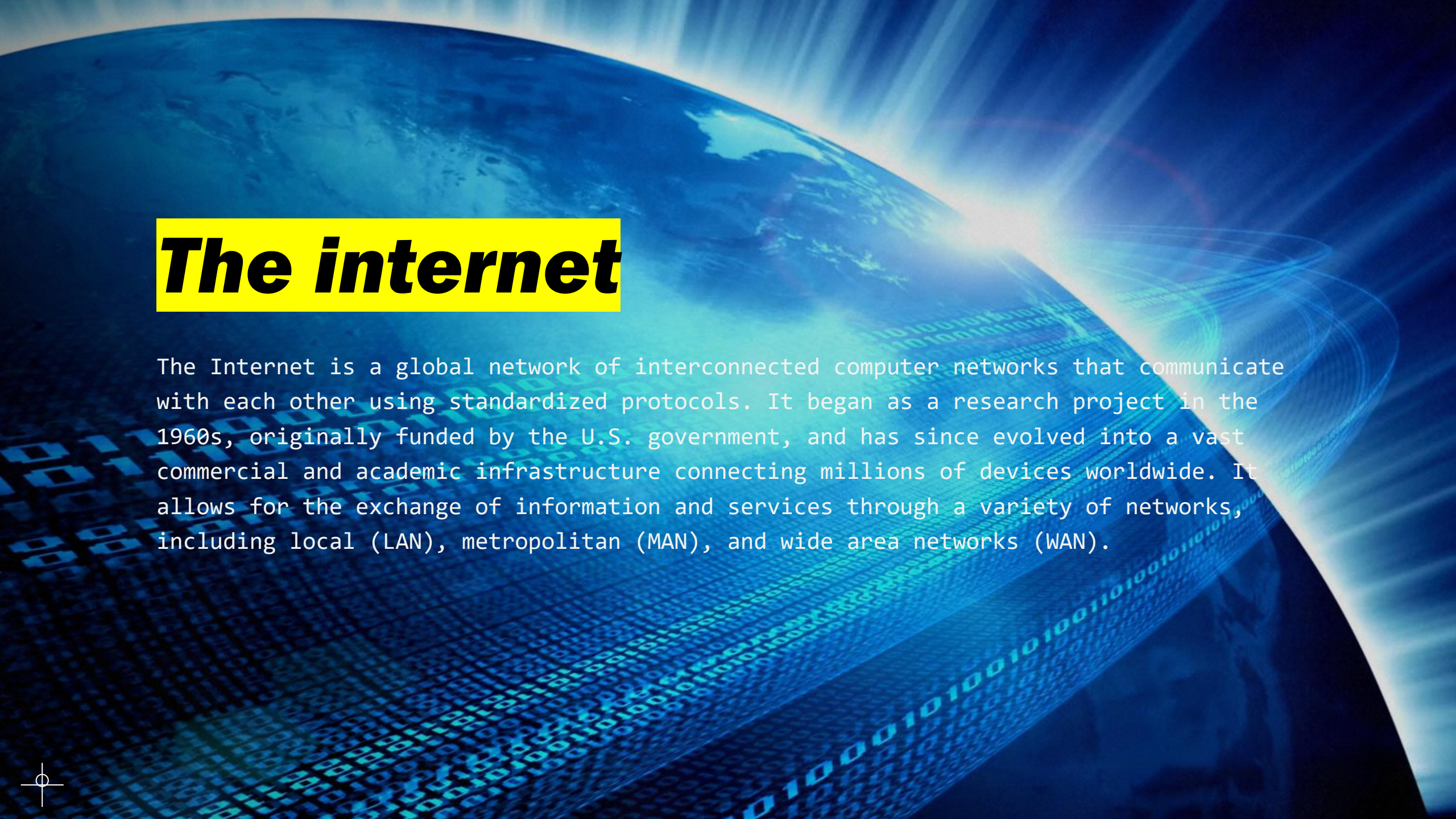

The internet
The Internet is a global network of interconnected computer networks that communicate with each other using standardized protocols. It began as a research project in the 1960s, originally funded by the U.S. government, and has since evolved into a vast commercial and academic infrastructure connecting millions of devices worldwide. It allows for the exchange of information and services through a variety of networks, including local (LAN), metropolitan (MAN), and wide area networks (WAN).

System communication

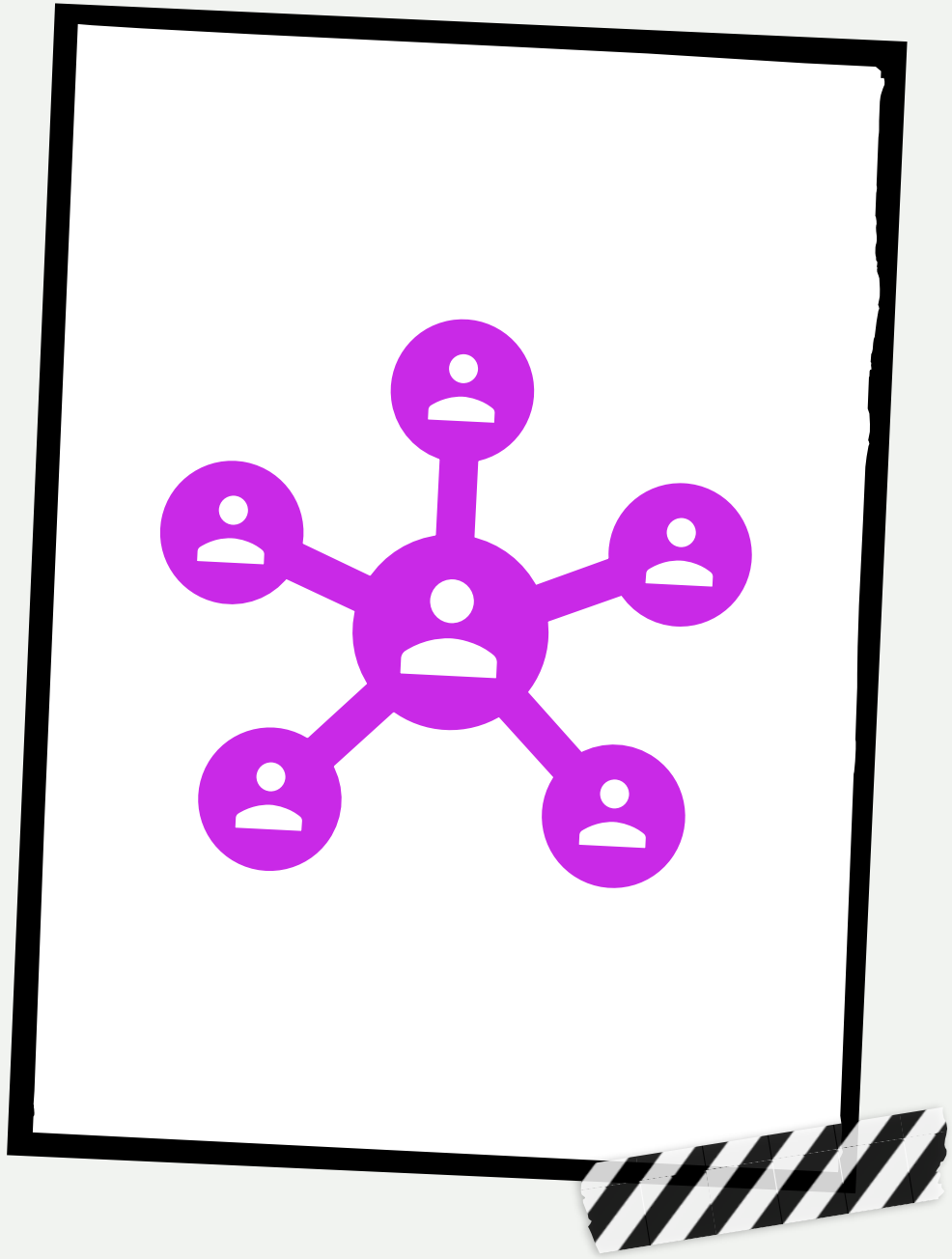
•**Open Network**: An open network is a system that allows any device or system to connect and communicate with it, often without stringent restrictions or proprietary controls. It promotes broad accessibility and interoperability.

•**Bridge vs. Switch**:

•**Bridge**: Connects two or more network segments at the data link layer (Layer 2) and can filter traffic between them to reduce collisions.

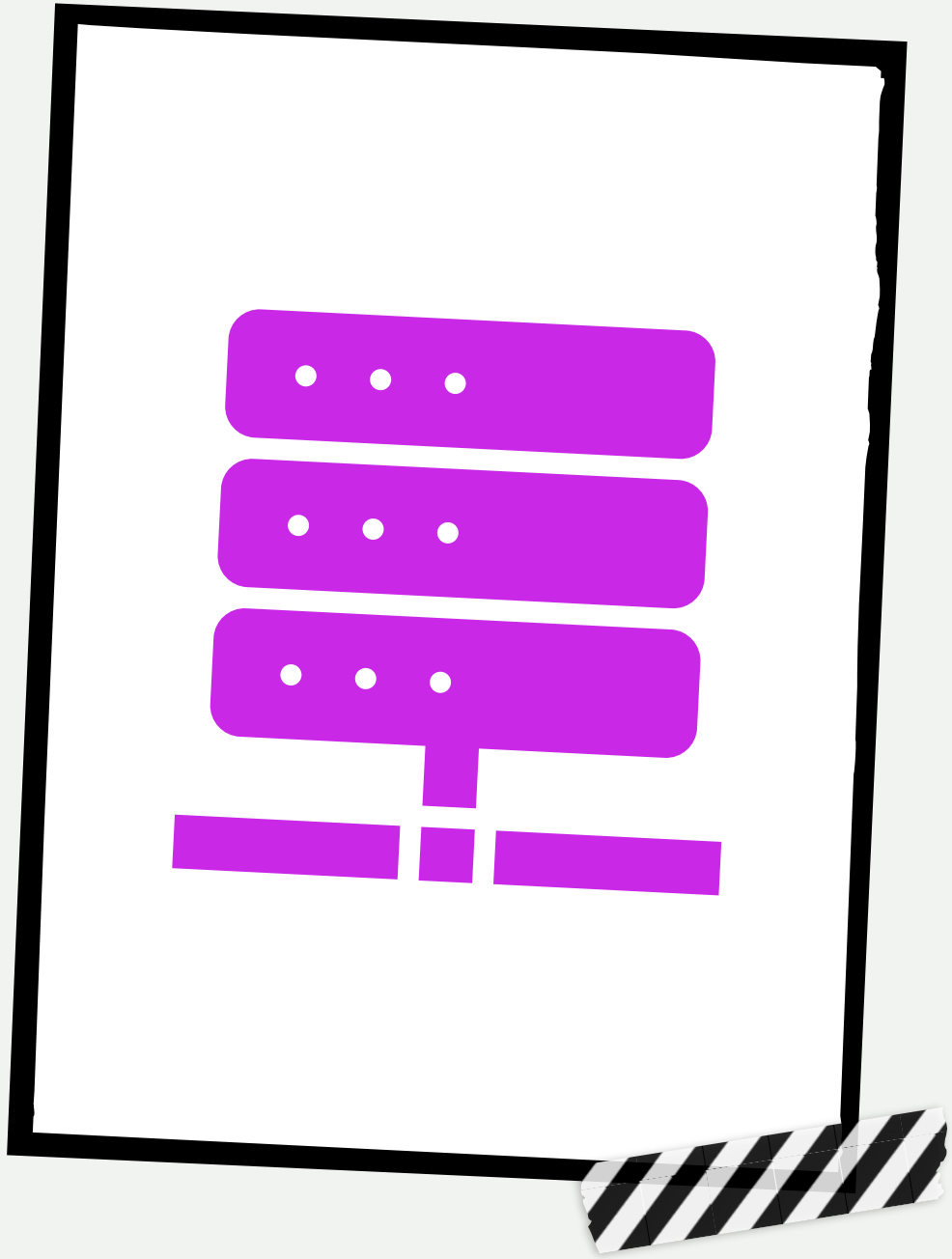
•**Switch**: Also operates at Layer 2 but is more advanced than a bridge. It connects multiple devices within a single network segment and uses MAC addresses to forward data only to the specific device intended, reducing unnecessary traffic.

•**Router**: A router is a network device that forwards data packets between different networks, determining the best path for data to travel from source to destination. It operates at the network layer (Layer 3) and connects different networks together.



Protocols used

- **HTTP/HTTPS**: Used for web browsing.
- **FTP**: Used for file transfers.
- **SMTP**: Used for sending emails.



Internet serive provider

Wireless Connections (WiFi): End systems connect to access ISPs via wireless access points (APs), creating hotspots in various locations like homes, businesses, and public areas. These hotspots provide Internet access within their broadcast range.

Cellular Networks: Similar to WiFi hotspots, cellular networks use cells and coordinate with each other to provide continuous service as users move between cells.

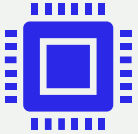
Telephone Lines: Traditional phone lines can be used for Internet access, typically through modems that convert digital data into a format compatible with voice lines. DSL (Digital Subscriber Line) uses separate frequency ranges for voice and data.

Cable/Satellite Systems: These provide high-speed data transfer and are often used for both direct connections to end systems and connections to routers that create local hotspots.

Broadband Technologies: Includes cable television connections, dedicated telephone data lines, satellite dishes, and fiber-optic cables. These methods offer faster and more reliable Internet access compared to older technologies like dial-up.

internet addressing

IP Addresses: Unique identifiers for devices on the Internet. Originally 32 bits long (IPv4), but transitioning to 128-bit addresses (IPv6) to accommodate more devices.



IP Address Notation: IP addresses are written in dotted decimal notation, where each byte of the 32-bit address is represented by a number between 0 and 255 and separated by periods (e.g., 192.207.177.133).

Domain Names: A human-friendly way of identifying machines on the Internet. Domains are registered with ICANN and are assigned mnemonic names that are unique and descriptive (e.g., aw.com).

Top-Level Domains (TLDs): The suffixes in domain names that indicate the domain's classification, such as .com for commercial entities, .edu for educational institutions, and .gov for government agencies. There are also country-code TLDs like .au for Australia.

Domain Structure: Domain names can be extended to specify individual machines within a domain (e.g., ssenterprise.aw.com).


Thank you for
listiening