How a message travel from my device in India to my friend's device in Germany?

Let us think I am trying to send a message to my Germany friend through whatspp web.

APPLICATION LAYER:

I will type a message and hit the send button.Then my browser checks it's cache to find the IP address of the domain (www.whatsapp.com). If it couldn't find the IP in it's cache then it will send a DNS(Domain Name System) query to it's ISP(Internet Service Provider). Then the ISP sends back the IP address of the domain and establishes a session between the whatsapp server and my device through HTTPS protocol. Whatsapp is end to end encrypted that means except the sender and the receiver no can read the message.Whatsapp server stores everyone's public key(through which only encryption takes place). Here sender encrypts the message using receivers public key,which will provided by the whatsapp server. This encrypted data can be decrypted only by using matching private key(reciever's private key).Now this encrypted data enter the Transport layer.

TRANSPORT LAYER:

Whatsweb uses TCP(Transmission Control Protocol) instead of UDP(User Datagram Protocol) because in UDP there is a chance of loosing data. TCP performs 3-way handshake to ensure (i) that both client and server are ready to communicate (ii) Duplex Communication flow (iii) Sequence numbers are synchronized. This TCP breaks down the message into smaller segments and labelled with source port number and destination port number and also with sequence numbers . If the network congestion occurs then TCP slows down data flow. And now these segments enter Network Layer

NETWORK LAYER:

Here TCP segments become IP packets that contain source IP and Destination IP. Now these packets enter Datalink Layer.

DATA-LINK LAYER:

This Layer adds Source MAC address and Next Immediate node's (WIFI) MAC address to the data packets. Now it encapsulate the data packets into frames.Now these frames can be sent to the Physical Layer.

PHYSICAL LAYER:

In this layer the frames are converted into bits.Here my PC is connected to WIFI (wireless) so it converts the bits into ElectroMagnetic Wave and it reaches the WIFI router.

Router assigns a private key to all the devices connected to it. When the signal reaches Router uses NAT(Network Address Translation) to convert the private IP into ISP's public IP.Now Source MAC address becomes the MAC address of Router and Destination MAC address become the MAC address of ISP. Now bits are converted into electrical signals(wire).

ISP is not a single router. It is a network of router.After getting the data from router ISP processes the data and changes the MAC addresses.Data transfer inside the ISP takes place using IGP (Interior Gateway Protocols).Once the data reaches the border router, it uses BGP (Border Gateway Protocol) to send the packet across different ISPs and reach Whatsapp Server (assume some where near Germany).

Whatsapp Server sends the encrypted message to the Destination IP using same layered process in reverse . Finally message reaches my friend's PC and it is decrypted using private key.