SMI-5: Five Dimensions of Social Media Interaction for Platform (De)Centralization

Lynnette Hui Xian Ng, Carnegie Mellon University

What is Decentralized Web?

Decentralized web

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From Wikipedia, the free encyclopedia

The decentralized web is a network of independent computers that provide secure, censorship-resistant access to information and services without relying on central servers or clouds, using decentralized computing.

What is Decentralized Web?

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Article   Talk

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The decentralized web is a network of independe
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what is decentralized web?

The decentralized web, often referred to as Web 3.0, is an evolution of the internet that aims to reduce or eliminate the reliance on central authorities and intermediaries in digital interactions. It leverages various technologies to achieve a more open, transparent, and user-controlled web environment. Here are some key aspects of the decentralized web:

1. **Distributed Networks**: Unlike the current web (Web 2.0), which relies heavily on centralized servers and data centers, the decentralized web uses peer-to-peer networks. This means that data is stored across multiple nodes (computers) rather than in a single, centralized location. Examples include IPFS (InterPlanetary File System) and BitTorrent.

2. **Blockchain Technology**: Blockchain plays a crucial role in the decentralized web by providing a secure and transparent ledger for transactions and data. Cryptocurrencies like Bitcoin and

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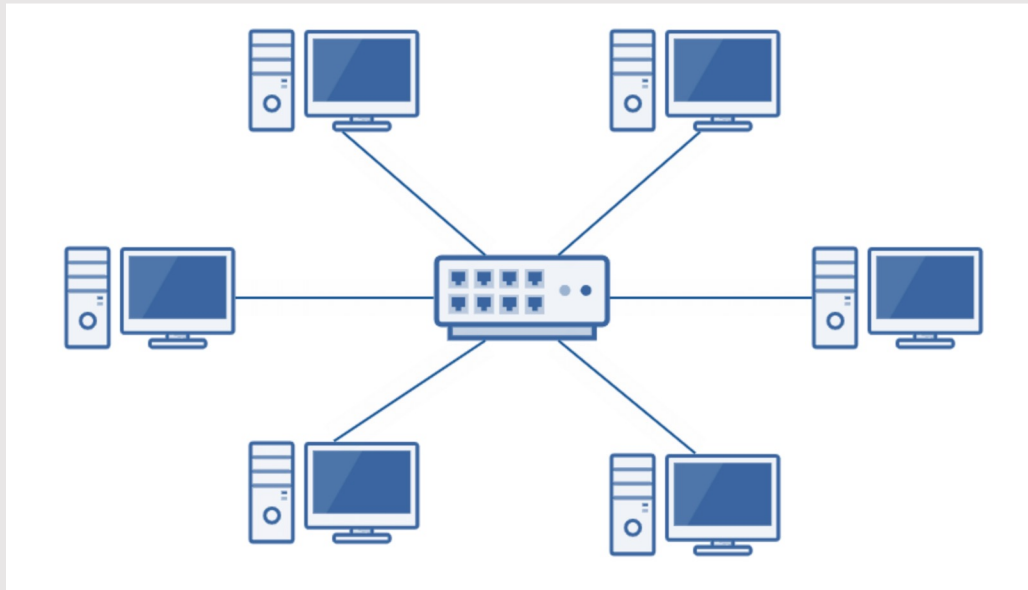
About The Workshop

Decentralizing the Web is a trend that gained remarkable momentum in recent years, fueled by a collective desire to redefine our engagement with online platforms. The conventional centralized vision of the Web is being challenged by a growing interest in decentralizing control and interactions, which finds its most profound expression in socio-economic systems. Illustrative examples of this transformative shift include the increasing attention received by **Decentralized Online Social Media** platforms with the so-called **Fediverse**, and the emergence of **Web3**.
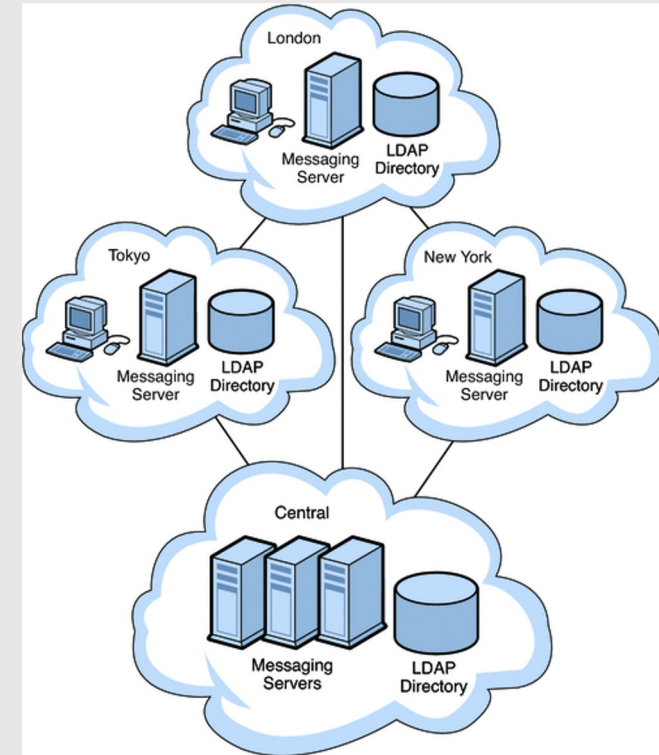
We're at ICWSM

International AAAI Conference on **Web** and **Social Media**

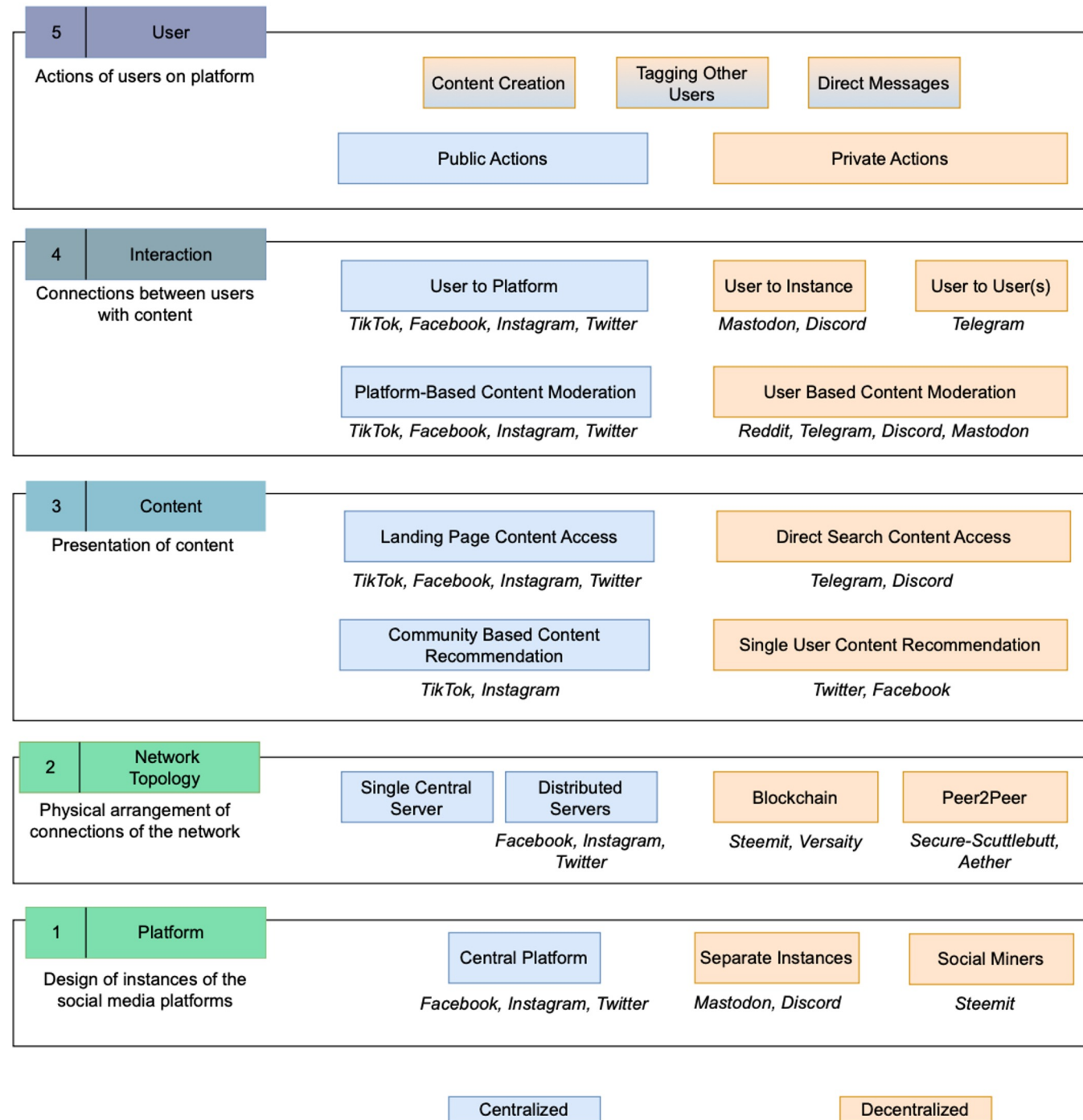Social media builds on the web

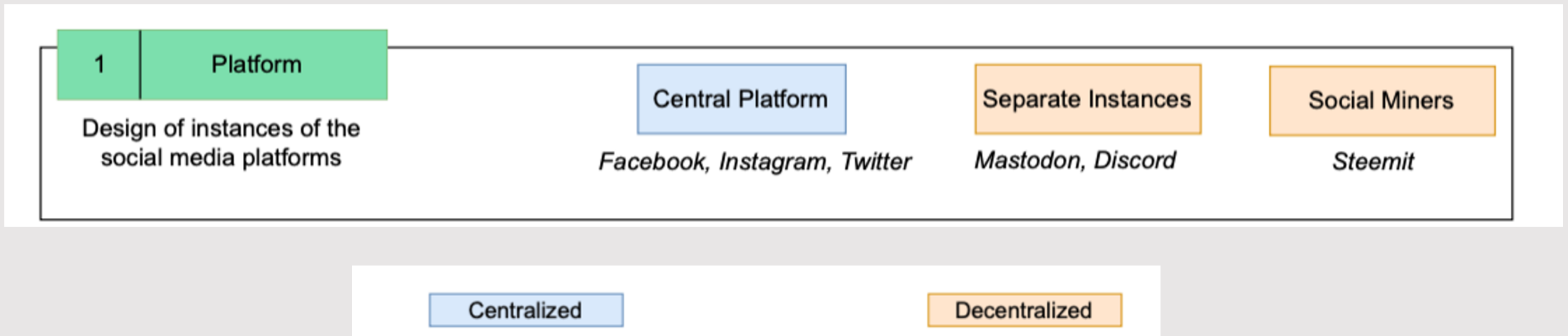# What is (De)Centralized Social Media?

Network Topology?

Servers distributed across the country?

SMI-5: Social Media Interactions

5 User — Actions of users on platform
- Content Creation
- Tagging Other Users
- Direct Messages
- Public Actions
- Private Actions

4 Interaction — Connections between users with content
- User to Platform — *TikTok, Facebook, Instagram, Twitter*
- User to Instance — *Mastodon, Discord*
- User to User(s) — *Telegram*
- Platform-Based Content Moderation — *TikTok, Facebook, Instagram, Twitter*
- User Based Content Moderation — *Reddit, Telegram, Discord, Mastodon*

3 Content — Presentation of content
- Landing Page Content Access — *TikTok, Facebook, Instagram, Twitter*
- Direct Search Content Access — *Telegram, Discord*
- Community Based Content Recommendation — *TikTok, Instagram*
- Single User Content Recommendation — *Twitter, Facebook*

2 Network Topology — Physical arrangement of connections of the network
- Single Central Server
- Distributed Servers — *Facebook, Instagram, Twitter*
- Blockchain — *Steemit, Versaity*
- Peer2Peer — *Secure-Scuttlebutt, Aether*

1 Platform — Design of instances of the social media platforms
- Central Platform — *Facebook, Instagram, Twitter*
- Separate Instances — *Mastodon, Discord*
- Social Miners — *Steemit*
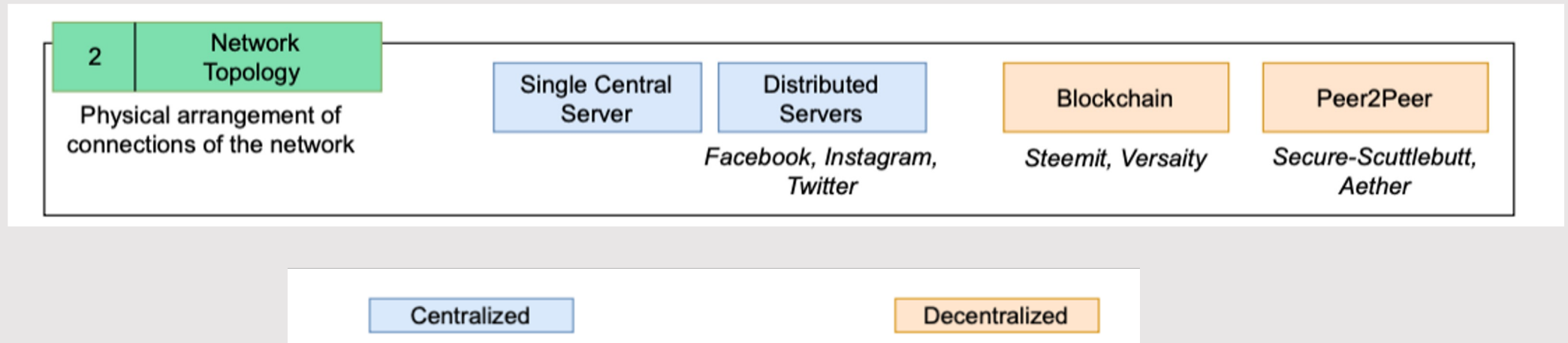
Centralized | Decentralized

Platform Dimension

Centralized: Single service provider, managed exclusively by one entity

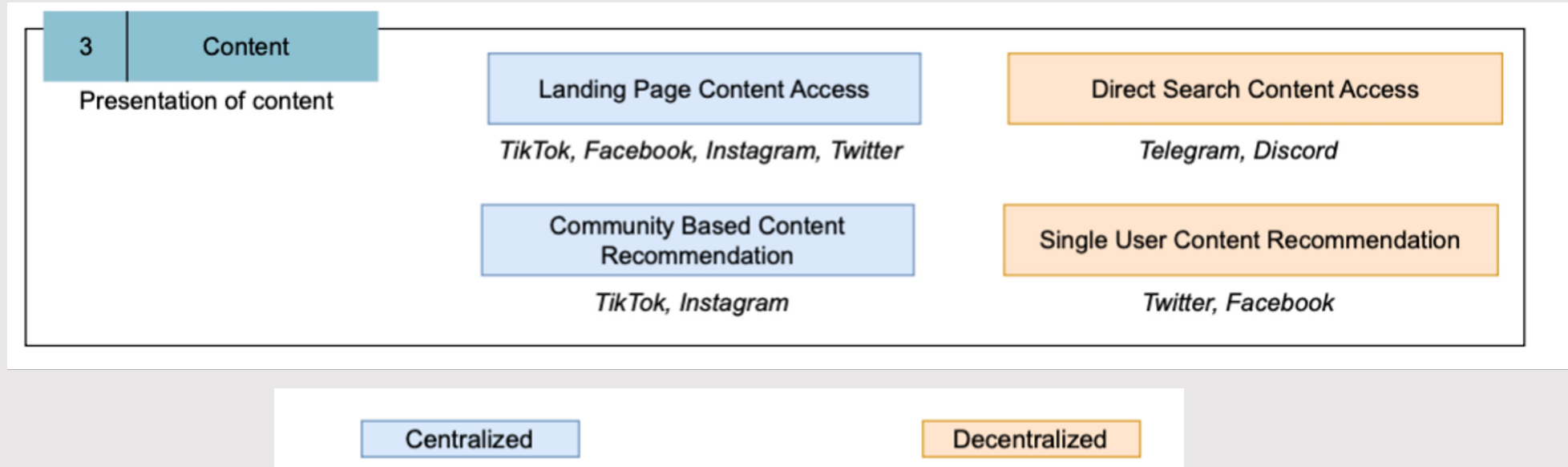Decentralized: Community- center spaces of independent instances

Network Topology Dimension

Centralized: Single server

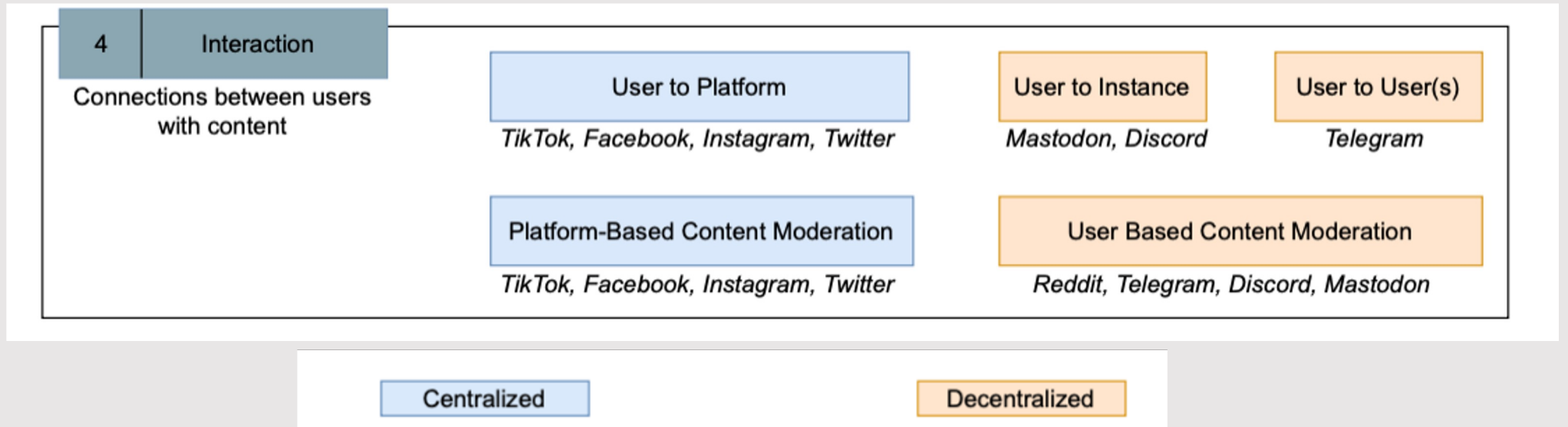Decentralized: Peer2Peer networks

Content Dimension

Centralized: Curated content feed

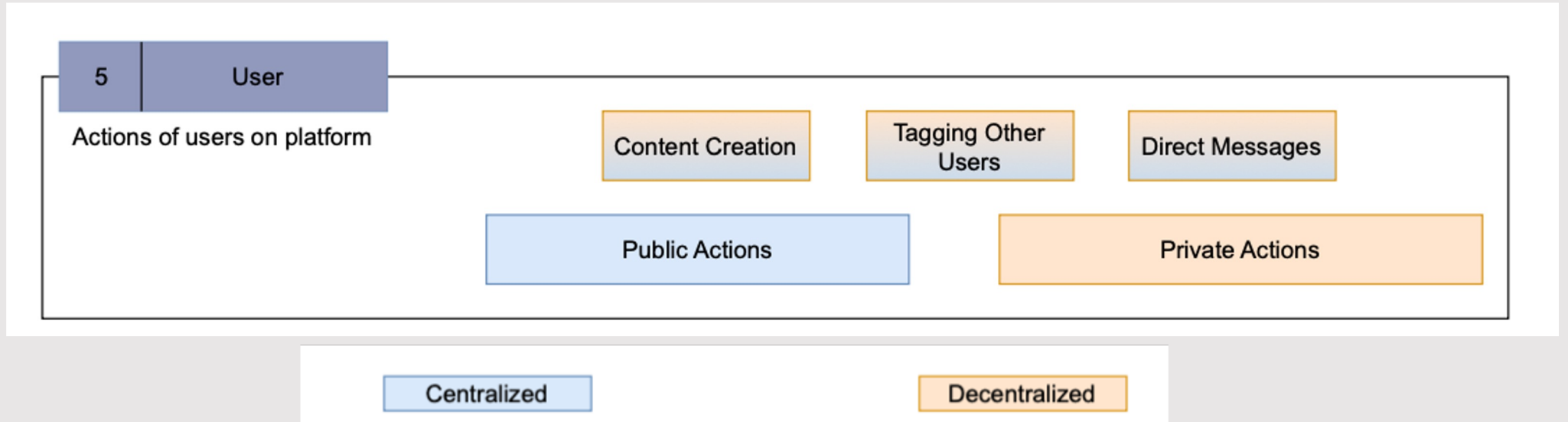Decentralized: Requires deliberate search for communities
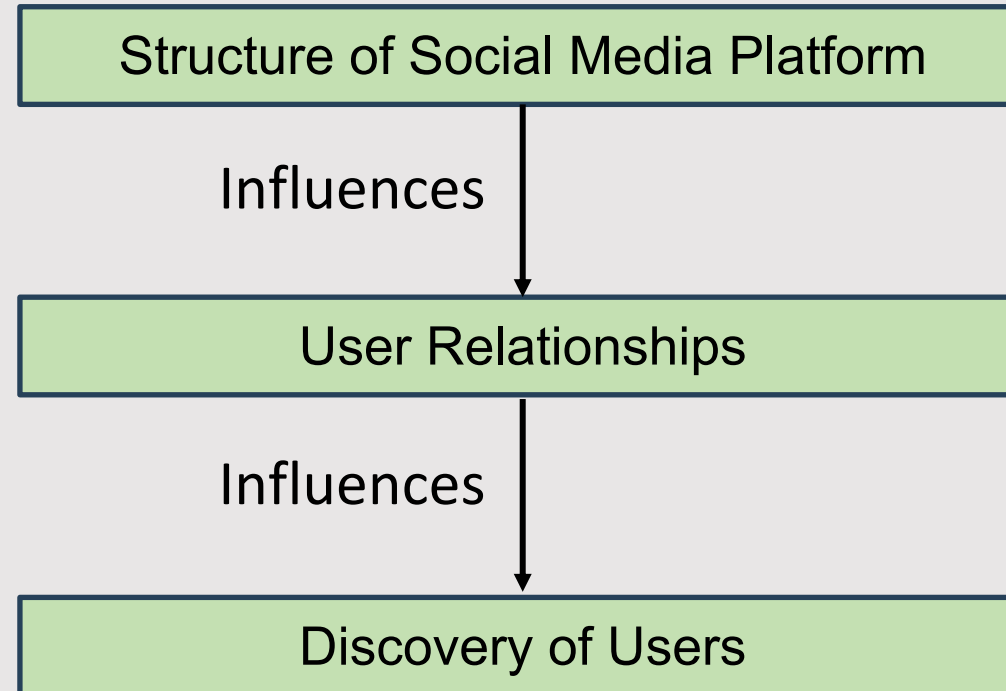
Interaction Dimension

Centralized: User-to-platform interaction, and content moderated by platform

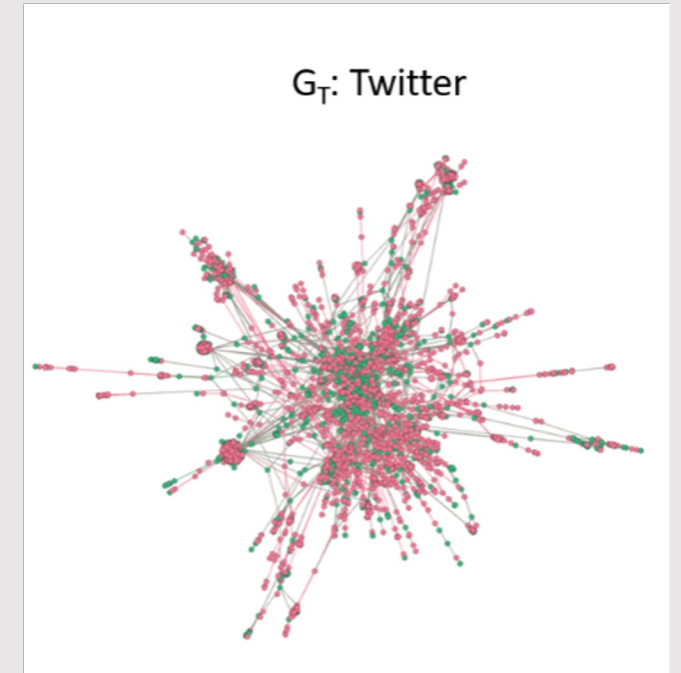Decentralized: User-based content moderation

User Dimension

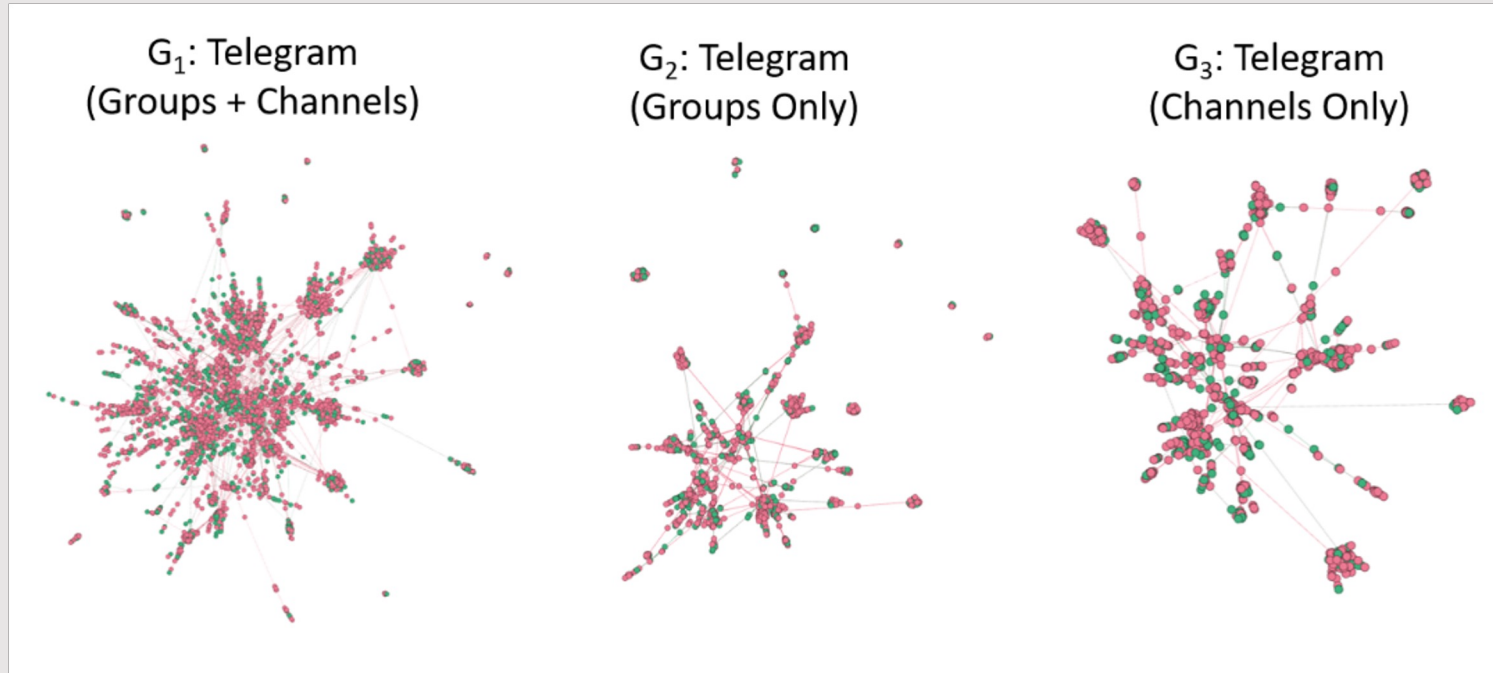# How do dimensions affect Social Media Analysis?

Structure of Social Media Platform

Influences

User Relationships

Influences

Discovery of Users

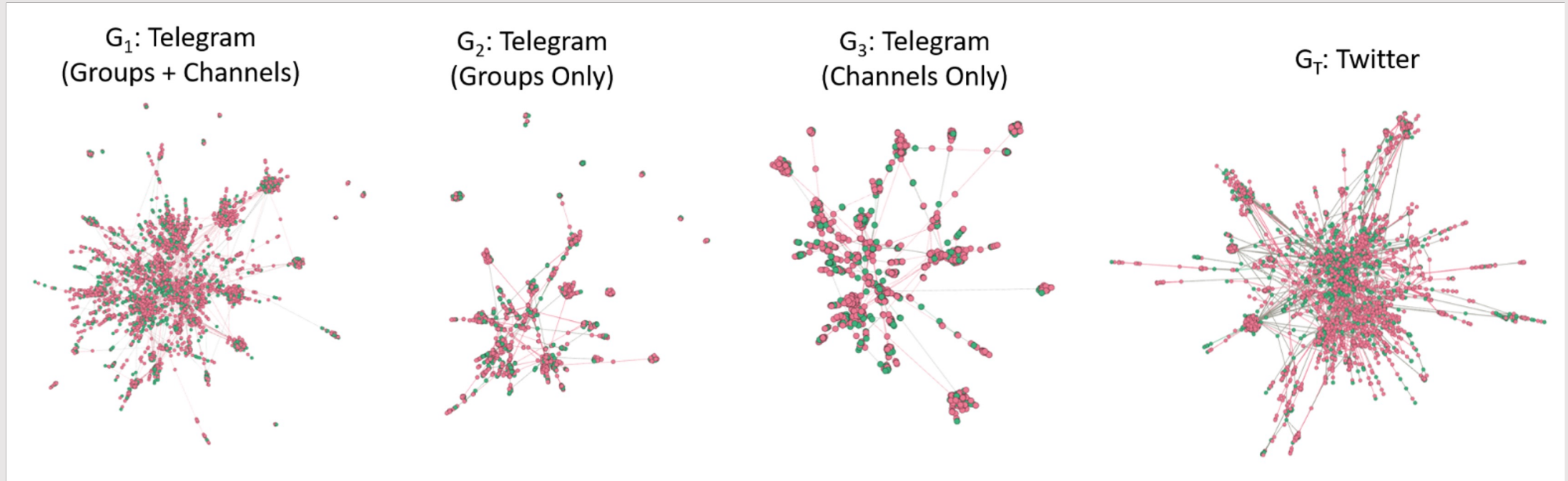# Communication during the Coronavirus Pandemic

G_T: Twitter

Pink: bot-like users
Green: human-like users

Communication during the Coronavirus Pandemic

Pink: bot-like users
Green: human-like users

Communication during the Coronavirus Pandemic

G₁: Telegram (Groups + Channels) G₂: Telegram (Groups Only) G₃: Telegram (Channels Only) G_T: Twitter
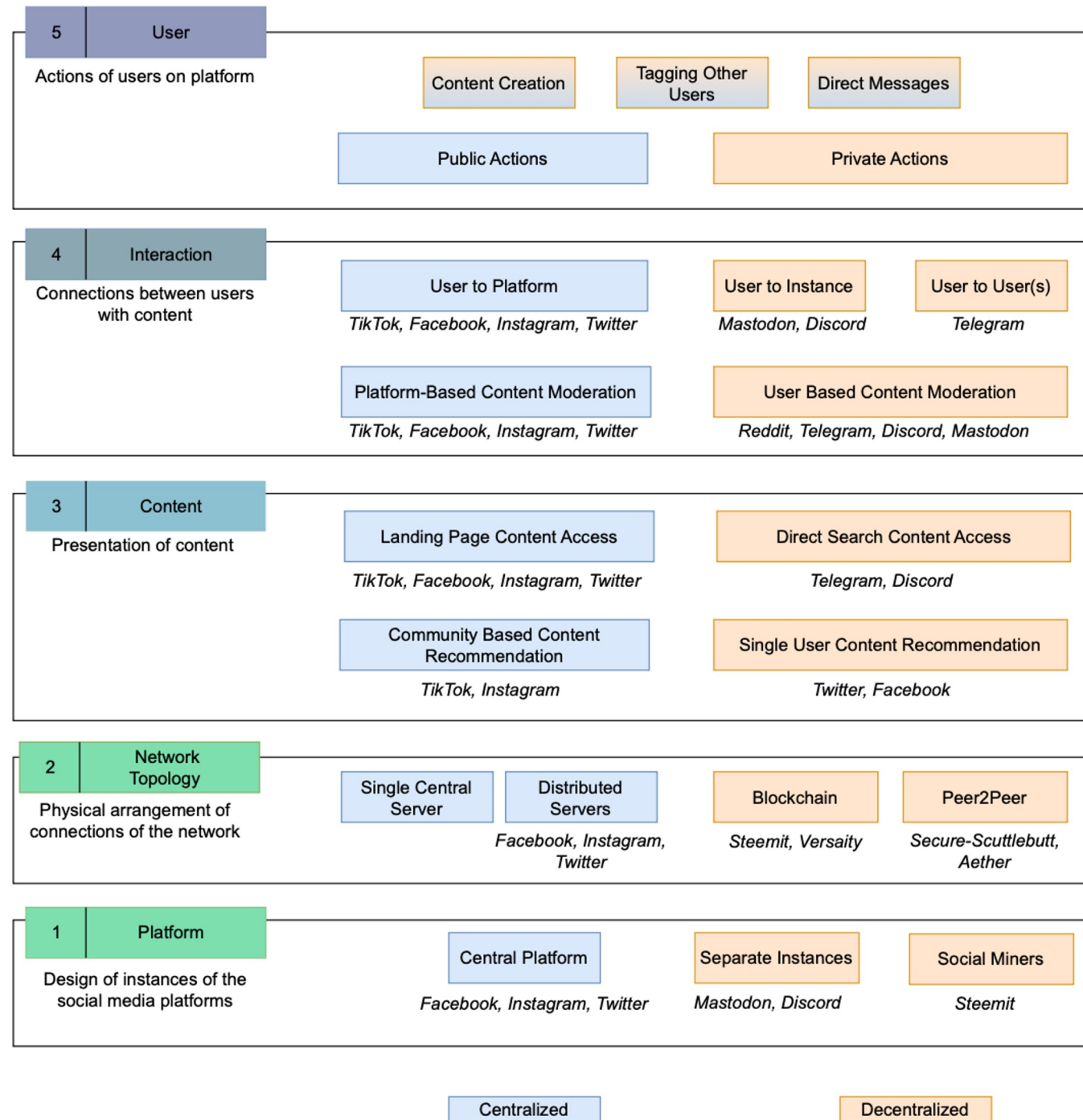
Pink: bot-like users
Green: human-like users

Interactions are different depending on the different views!

Let's think about TikTok

Centralized or Decentralized?

Is TikTok Centralized or Decentralized in each Dimension?

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