

Workplace Social Graph Explorer — Master Plan (10-Day Build)

Team Members: Sudhan & Ganapati

Goal: Build a Zoho Cliq + Catalyst-powered AI-driven organizational insights tool within 10 days.

1. Introduction (For Team Understanding)

Modern workplaces rely on collaboration across teams, functions, and roles. Yet, most organizations struggle to understand **how people actually interact**, who the real **connectors** are, where **communication bottlenecks** exist, or which teams are **isolated** from each other.

Traditional metrics like attendance, meeting logs, or task assignments fail to capture the deeper truth:

Real culture and productivity are shaped by how people talk to each other.

👉 **The Workplace Social Graph Explorer** is a Zoho Cliq extension + Catalyst backend that:
- Collects **safe, opt-in message interaction metadata** from Cliq channels
- Constructs a **weighted social interaction graph** between employees
- Visualizes it as an **interactive, force-directed network graph**
- Uses AI to generate **insights about connectors, silos, communication risks, and overload points**
- Posts periodic **Org Health Summaries** back into Cliq channels

This tool helps organizations:
- Identify cross-team collaboration patterns
- Detect emerging silos early
- Spot overloaded individuals acting as bottlenecks
- Improve team culture and reduce miscommunication
- Make data-driven decisions for org restructuring, onboarding, and project assignments

The idea is **rare**, highly **judge-friendly**, and combines teamwork + AI + visualization + analytics — perfect for Cliqtrix.

2. Project Scope (Expanded Version for 2 People)

To scale the project up (because two members + AI-assisted tools = more bandwidth), our full scope includes:

Core MVP

- Cliq Bot (opt-in, slash commands, data fetch)
- Metadata capture (message sender, mentions, replies, reactions)
- Weighted social graph computation
- Graph metrics: degree, betweenness (approx), community detection
- AI insight generator
- Visualizer (Cytoscape.js)
- Weekly Org Health Digest
- Privacy & anonymization controls

Extended Features (Stretch Goals)

- **Time-lapse mode:** Compare graphs over weekly snapshots
- **Ego network view:** `/socialgraph --user <id>`
- **Sentiment-aware edge coloring**
- **Anomaly detection:** sudden drop in communication, over-reliance on one person
- **Role inference:** AI guesses user's function based on interaction patterns
- **Cross-team bridge recommendations:** AI suggests who should connect with whom
- **Graph Export:** CSV/JSON for HR analytics

These stretch goals are realistic if we distribute tasks well and use AI tools for code generation, data parsing, and visualization snippets.

3. Tech Stack Overview

Zoho Cliq

- Bot events
- Slash commands
- Cards for UI

Zoho Catalyst

- Functions → graph builder
- Data Store → message metadata
- Cron jobs → scheduled snapshots
- Hosting → visualizer page

Libraries

- Cytoscape.js or D3.js for graph visual
- Simple JS for UI

AI Tools

- OpenAI/Claude for insights
 - AI code generation for JS/Deluge functions
 - No-code automations for internal testing
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4. Data Pipeline Overview

1. Capture Events via Cliq Bot

(sender → mentions, replies, reactions)

2. Store Metadata in Catalyst

No actual message text unless opted-in

3. Graph Builder Function

- Aggregate edge weights: mentions × 3, replies × 2, reactions × 1

- Normalize weights weekly ### 4. Graph Analytics Module

- Degree centrality

- Betweenness (approx BFS)

- Community detection (Louvain/Label Propagation) ### 5. Graph Snapshot JSON

6. Visualizer Page

- Nodes sized by degree

- Colors = clusters

- Hover data: name, metrics ### 7. Insight Engine (AI)

- Identify connectors, silos, clusters, overloaded people ### 8. Report Posting

Cliq bot posts Org Health Digest weekly

5. Work Division—10-Day Sprint (Sudhan & Ganapati)

Each day includes **Core Tasks** + **Optional Tasks** (if ahead of schedule).

Day 1 — Kickoff & Setup

Sudhan

- Set up **Catalyst project**, DB tables (messages, users, snapshots)
- Connect OpenAI API for future use

Ganapati

- Set up **Clq bot** skeleton (opt-in command, test responses)
- Configure webhook to receive message events

Deliverables

- Working bot
 - Working DB
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Day 2 — Event Capture Pipeline

Sudhan

- Create endpoint in Catalyst to receive message metadata
- Parse fields (sender, mentions, reactions, replies)

Ganapati

- Bot sends event payload to Catalyst
- Build opt-in/opt-out flow

Deliverables

- Metadata successfully stored
 - Opt-in works
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Day 3 — Graph Builder V1

Sudhan

- Build edge aggregation logic in Deluge/Catalyst function
- Compute simple degree centrality

Ganapati

- Develop utility to fetch last 7 days' messages
- Generate adjacency list structure

Deliverables

- graph_snapshot JSON (nodes + weighted edges)
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1 Day 4 — Graph Analytics (Clusters + Betweenness)

Sudhan

- Implement community detection
- Color cluster assignment

Ganapati

- Implement approximate betweenness centrality
- Node scoring tags

Deliverables

- Enhanced graph JSON
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1 Day 5 — Visualizer Page (Cytoscape.js)

Sudhan

- Set up Catalyst web hosting
- Build HTML + JS scaffold

Ganapati

- Integrate Cytoscape.js
- Node styling (size by degree, color by cluster)

Deliverables

- Working interactive graph page
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Day 6 — AI Insight Engine

Sudhan

- Prepare metric → summary template prompts
- Integrate AI summarizer endpoint

Ganapati

- Build summary component in visualizer page
- Format insights into readable card blocks

Deliverables

- Auto-generated insights for each snapshot
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Day 7 — Cliq Slash Commands & Reports

Sudhan

- Implement /socialgraph, /socialgraph --user, /socialgraph --weekly

Ganapati

- Auto-post Org Health Summary to channel
- Integrate visualizer link into card

Deliverables

- Full bot interaction
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Day 8 — Privacy Controls + Polishing

Sudhan

- Anonymization toggle
- Data retention rule

Ganapati

- Admin panel for toggles
- Add disclaimers in bot messages

Deliverables

- Privacy-compliant version ready
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1 Day 9 — Testing + Stretch Features

Sudhan

(Choose any 1–2 stretch goals) - Time-lapse graph viewer

- Ego network view

Ganapati

(Choose any 1–2 stretch goals) - Sentiment-based edge coloring

- Anomaly alerts module

Deliverables

- Stretch features added
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1 Day 10 — Demo Prep & Final Submission

Sudhan

- Create demo script
- Record 1–2 demo clips

Ganapati

- Build pitch slides
- Prepare repository + documentation

Deliverables

- Final submission
 - Pitch-ready deck
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6. Stretch Feature Ideas (If Ahead of Schedule)

Here are additional ideas we can implement using AI + magic tools: - **Leadership**

Vulnerability Metric: detect if too many decisions funnel through one person - **Sentiment**

Heatmap per cluster - **Role Inference**: infer role from communication pattern - “**Bridge Suggestion**” AI: recommend who should talk to whom - **Org Health Timeline** slider - **Graph Export for HR - Slack/Teams adapter** (future)

7. What Will Impress Judges

- Beautiful, clean, moving graph visualization
- Crisp AI-generated insights
- Unique metrics (organizational health score)
- Privacy-first design
- Professional pitch deck & demo flow