Ideation Phase
Brainstorm & Idea Prioritization Template

Date	18 October 2023
Team ID	
Project Name	AI-driven resource 5G optimization
Maximum Marks	4 Marks

Brainstorm & Idea Prioritization Template:

Brainstorming provides a free and open environment that encourages everyone within a team to participate in the creative thinking process that leads to problem solving. Prioritizing volume over value, out-of-the-box ideas are welcome and built upon, and all participants are encouraged to collaborate, helping each other develop a rich amount of creative solutions.

Use this template in your own brainstorming sessions so your team can unleash their imagination and start shaping concepts even if you're not sitting in the same room.

Reference: https://www.mural.co/templates/empathy-map-canvas

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Step-1: Team Gathering, Collaboration and Select the Problem Statement

Template

Brainstorm & idea prioritization

Use this template in your own brainstorming sessions so your team can unleash their imagination and start shaping concepts even if you're not sitting in the same room.

10 minutes to prepare
1 hour to collaborate
2-8 people recommended

Before you collaborate

A little bit of preparation goes a long way with this session. Here's what you need to do to get going.

10 minutes

A **Team gathering**
Define who should participate in the session and send an invite. Share relevant information or pre-work ahead.

B **Set the goal**
Think about the problem you'll be focusing on solving in the brainstorming session.

C **Learn how to use the facilitation tools**
Use the Facilitation Superpowers to run a happy and productive session.

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1 Define your problem statement

What problem are you trying to solve? Frame your problem as a How Might We statement. This will be the focus of your brainstorm.

5 minutes

PROBLEM
How might we [your problem statement]?

The problem at hand is to develop and implement AI-driven strategies and technologies to optimize the allocation of resources within 5G networks, with the primary objective of enhancing network efficiency. 5G networks are characterized by their high data rates, low latency, and the ability to support a diverse range of services, from mobile broadband to IoT and mission-critical applications. However, efficiently managing the allocation of resources, such as spectrum, bandwidth, power, and computing capacity, is a complex challenge.

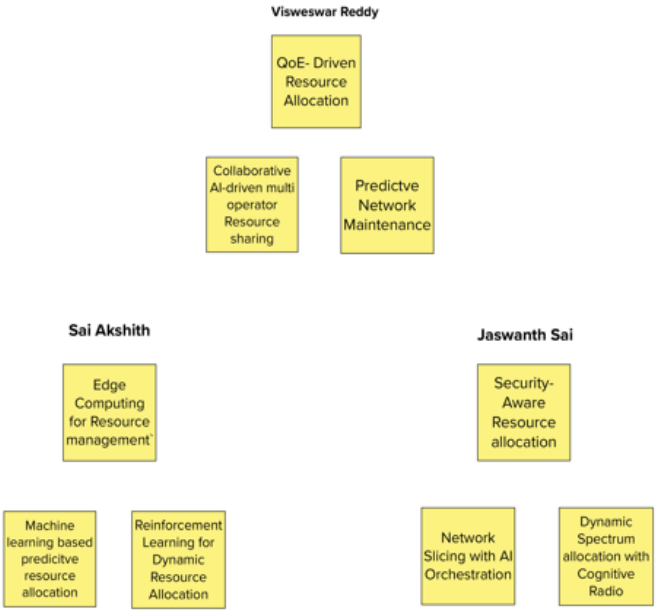
Step-2: Brainstorm, Idea Listing and Grouping

2

Brainstorm

Write down any ideas that come to mind that address your problem statement.

10 minutes



3

Group ideas

Take turns sharing your ideas while clustering similar or related notes as you go. Once all sticky notes have been grouped, give each cluster a sentence-like label. If a cluster is bigger than six sticky notes, try and see if you and break it up into smaller sub-groups.

20 minutes

TIP

Add customizable tags to sticky notes to make it easier to find, browse, organize, and categorize important ideas as themes within your mural.

implementing machine learning-based predictive resource allocation. This involves using historical network data to predict future resource demands and allocate resources proactively. By considering factors like user location, application types, and anticipated demand, the network can optimize resource allocation in real-time, enhancing efficiency. Additionally, the friend proposes leveraging network slicing with AI orchestration to create dedicated network segments for specific use cases, ensuring tailored resource allocation based on unique requirements.

idea of QoE-driven resource allocation. They emphasize that AI can continuously assess Quality of Experience for various services and users, enabling resources to be shifted to areas with lower QoE or to applications with higher requirements. This user-centric approach would significantly enhance the network experience. Friend 2 also suggests integrating cognitive radio technology for dynamic spectrum allocation, allowing devices and base stations to intelligently choose spectrum bands based on real-time demand, ultimately maximizing spectrum efficiency and minimizing interference.

Energy efficiency and security. They propose that AI should optimize Resource allocation with an emphasis on energy conservation, taking into account factors like environmental conditions and energy costs. This eco-friendly approach not only enhances network efficiency but also contributes to reducing the environmental footprint. Moreover, Friend 3 suggests integrating AI-driven security monitoring and threat detection into the resource allocation process, enabling the network to detect and respond to security incidents while maintaining performance and availability.

Implementation of federated learning for resource allocation. They explain how multiple network operators can collaboratively train machine learning models without sharing sensitive data. These models can then be used to optimize resource allocation across different operator networks, reducing redundancy and enhancing overall efficiency. Additionally, Friend 4 suggests employing AI for predictive maintenance, which can proactively identify and address network hardware issues before they lead to service disruptions.

Step-3: Idea Prioritization

4

Prioritize

Your team should all be on the same page about what's important moving forward. Place your ideas on this grid to determine which ideas are important and which are feasible.

20 minutes