`

EFFECTIVE MANAGEMENT AND COSULTANCY

COURSEWORK-

TRAFFIC ISSUE IN BANGALORE

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PROBLEM SITUATION UNSTRUCTURED

Bangalore traffic is considered to be one of the worst in the world. The current road of the city is not equipped to handle such a high level of traffic. The city started to develop after the expansion of Information Technology sector in the city. With more IT companies coming to Bangalore, it encouraged people from other states to migrate to Bangalore in search of jobs which increased the population of the city (*Bangalore, India population Populationstat.com)*. Traffic has a direct impact on people's daily lives and the efficient operation of the city since it costs them the precious resource of time.

According to reports, an average person spends more than 240 hours each year delayed in traffic and city suffers a loss of around £760 million a year due to the same *(Citizen Matters, Bengaluru.*)The population of Bangalore which was around 6.8 million in 2005 is estimated to have reached 13.2 million in 2022 out of which around 50% are migrants. There are around 7000 buses in the city for the public to use and most of it are in very poor condition which leads people to use private vehicles for their commute. In 2019, the total number of vehicles registered in the city reached around 8 million and the city's roads are not in a condition to accommodate this many numbers of vehicles. Metro rail expansion has been very slow and has only covered 28 kilometres so far.

The lack of planning in the beginning stage of city expansion made it almost impossible for the government to find a proper solution for this problem. Even though the authorities have tried various methods to control the traffic like metro rails and blocking some roads by converting them into one way, their role is limited as the city has already expanded fortuitously. The city's culture of working in isolation and conflicts between different transport system restricts the government from developing an integrated public transport strategy.
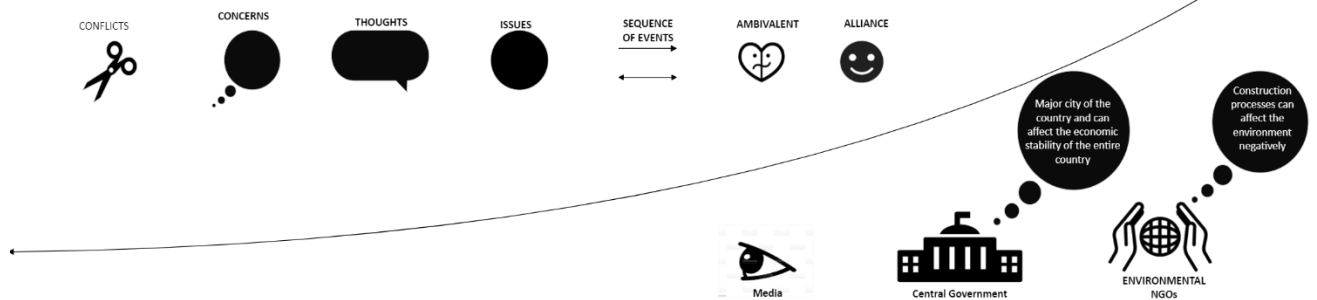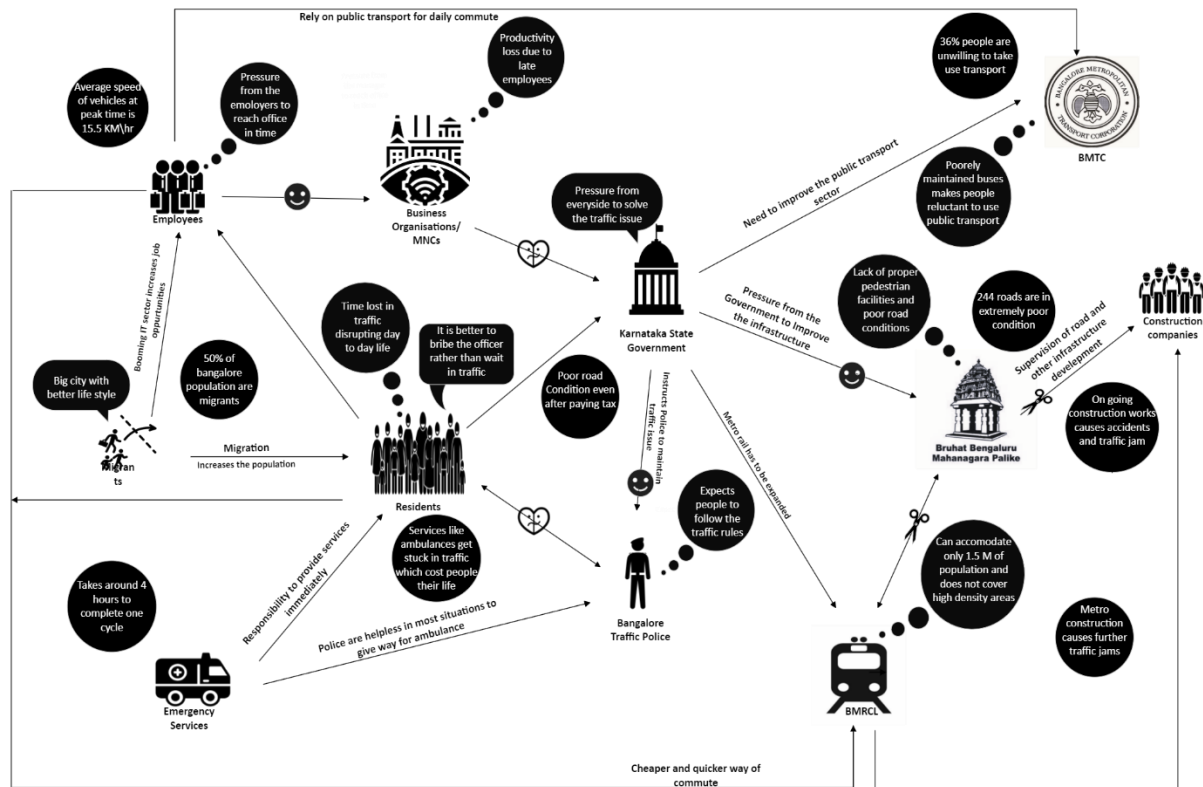
STAKEHOLDERS

Sl. No	Name	Relationship	What's on their mind
1	Karnataka state government	Main responsibility of the issue	Find a feasible solution for the issue
2	BBMP	Answerable to the government and residents regarding the issue	Orderly development of the city
3	BMRCL	Alternative mode of transport	Speedup the expansion
4	Bangalore traffic police	Responsible to keep the traffic under control	Keep the traffic under control and prevent accidents
5	Business organisations/MNCs	Negatively impacted by the traffic issue	Loss in productivity due to late employees
6	Employees	One major reason for heavy traffic during daytime	Concerned about being late
7	Residents	Majorly impacted by the issue	Daily life activities interrupted
8	Emergency services	Service delayed due to over crowdedness on road	Delayed service cost people their life
9	Construction companies	Role in road expansion	Profit maximisation and popularity
10	Migrants	Causes rise in population	Better lifestyle in Bangalore
11	BMTC	Source of commute for the residents	Need to properly maintain the buses
12	Environmental NGOs	Conflicts with authorities	Sustainable development
13	Central Government	Interested in the issues of Bangalore as it is one of the major cities of the country	Key income source of the country
14	Media	Delivers information to the society	Channels rating

POWER AND INTEREST MATRIX

POWER	**Keep Involved** • Central Government • Construction companies	**Key players** • Karnataka State Government • BBMP • BMRCL • Bangalore traffic police
H I G H		
L O W	**Minimal attention** • Migrants • Media	**Keep informed** • Emergency services • Business Organisation/MNCs • Employees • Residents • Environmental NGOs
	LOW	**HIGH**

INTEREST

PART 1- RICH PICTURE

Rely on public transport for daily commute

- Average speed of vehicles at peak time is 15.5 KM\hr
- Pressure from the employers to reach office in time
- Productivity loss due to late employees
- 36% people are unwilling to take use transport

BMTC

- Booming IT sector increases job opportunities
- Pressure from everyside to solve the traffic issue
- Need to improve the public transport sector
- Poorly maintained buses makes people reluctant to use public transport

Employees

Business Organisations/ MNCs

Karnataka State Government

- Big city with better life style
- 50% of bangalore population are migrants
- Time lost in traffic disrupting day to day life
- It is better to bribe the officer rather than wait in traffic
- Poor road Condition even after paying tax
- Pressure from the Government to Improve the infrastructure
- Lack of proper pedestrian facilities and poor road conditions
- 244 roads are in extremely poor condition
- Supervision of road and other infrastructure development

Construction companies

Migrants

Migration — Increases the population

Residents

- Services like ambulances get stuck in traffic which cost people their life
- Instructs Police to maintain traffic issue
- Expects people to follow the traffic rules
- Metro rail has to be expanded
- On going construction works causes accidents and traffic jam

Bruhat Bengaluru Mahanagara Palike

- Takes around 4 hours to complete one cycle
- Responsibility to provide services immediately
- Police are helpless in most situations to give way for ambulance
- Can accomodate only 1.5 M of population and does not cover high density areas
- Metro construction causes further traffic jams

Emergency Services

Bangalore Traffic Police

BMRCL

Cheaper and quicker way of commute

CONFLICTS	CONCERNS	THOUGHTS	ISSUES	SEQUENCE OF EVENTS	AMBIVALENT	ALLIANCE

- Major city of the country and can affect the economic stability of the entire country
- Construction processes can affect the environment negatively

Media

Central Government

ENVIRONMENTAL NGOs

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PART 2- SSM ANALYSIS

STAKEHOLDERS SELECTED

1. **Bruhat Bengaluru Mahanagara Palike (BBMP)**

   Reason for selection

   BBMP is the administrative body that is in charge of all the road and other infrastructural facilities of the city which makes it one of major stakeholder in this issue. They are answerable to the state and residents if there are some issues in connection with infrastructure facilities such as roads, flyovers and so on. BBMP was majorly criticised by the Information Technology companies in Bangalore for its poor road conditions in 2005 and they were also reprimanded by the Karnataka state government for the same. One of the major reasons why Bangalore's traffic is in such a poor condition is because of its terrible road condition.

PQR STATEMENT

A system with proper road and infrastructural facilities by hiring efficient employees who does their assigned work in a timely manner in order to attain a proper traffic management system for the proper running of the city
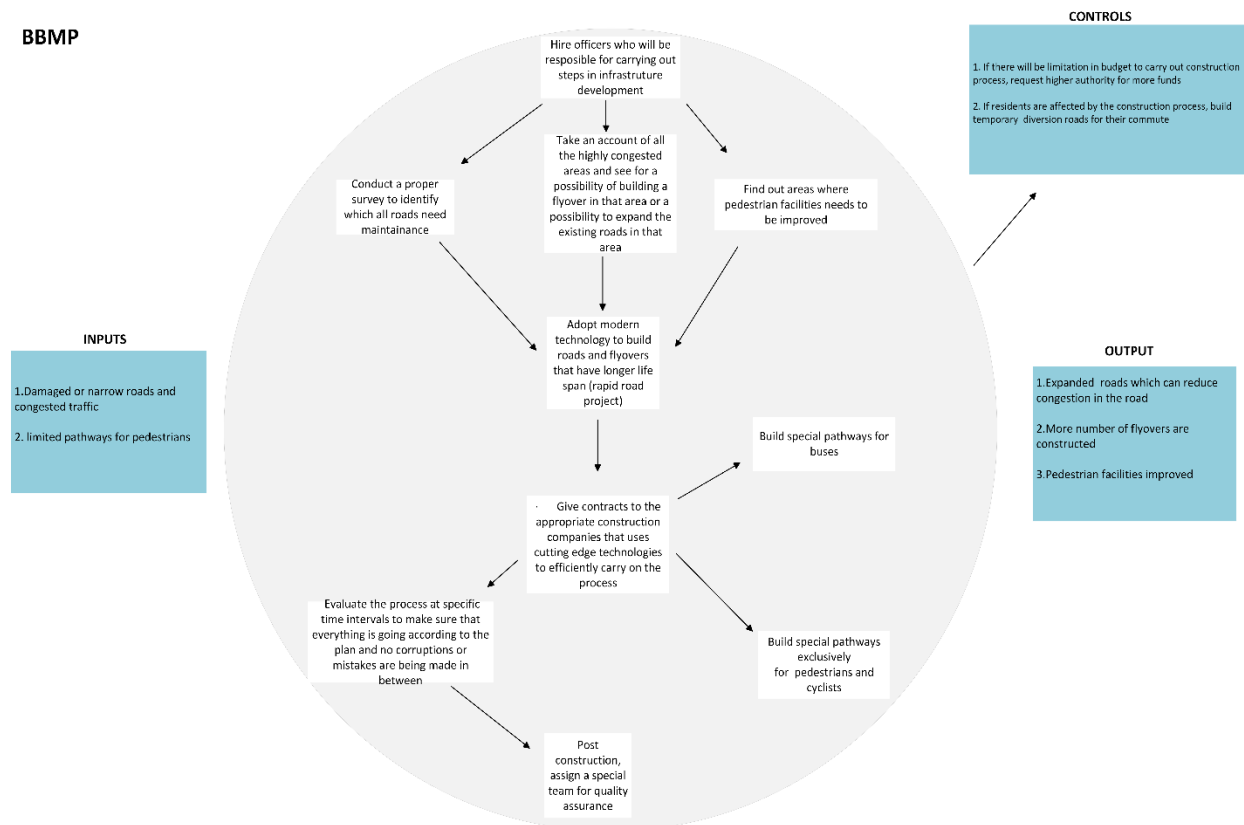
CATWOE

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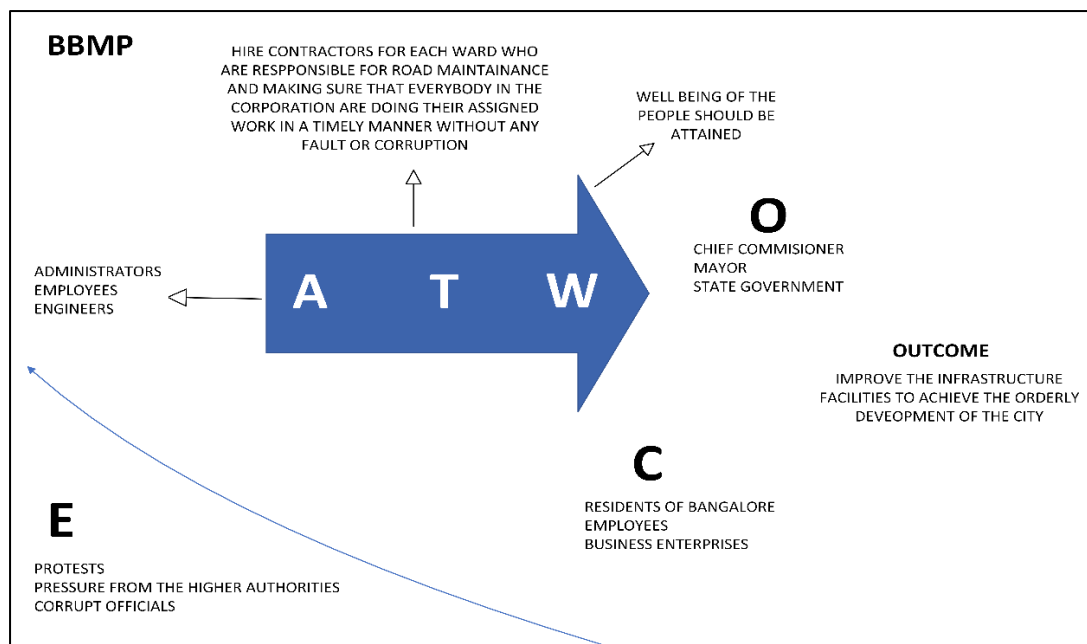
ROOT DEFINITION

A system that is responsible to ensure wellbeing of the society by building long lasting infrastructures that can accommodate the entire population of the city through efficient employers that carry out their jobs without any corruption or malpractices and be answerable to the higher authorities at any point to develop a proper traffic management system for the proper functioning of the city.

CONCEPTUAL MODEL

BBMP

CONTROLS

1. If there will be limitation in budget to carry out construction process, request higher authority for more funds

2. If residents are affected by the construction process, build temporary diversion roads for their commute

Hire officers who will be resposible for carrying out steps in infrastructure development

Take an account of all the highly congested areas and see for a possibility of building a flyover in that area or a possibility to expand the existing roads in that area

Conduct a proper survey to identify which all roads need maintainance

Find out areas where pedestrian facilities needs to be improved

INPUTS

1. Damaged or narrow roads and congested traffic

2. limited pathways for pedestrians

Adopt modern technology to build roads and flyovers that have longer life span (rapid road project)

Build special pathways for buses

· Give contracts to the appropriate construction companies that uses cutting edge technologies to efficiently carry on the process

OUTPUT

1. Expanded roads which can reduce congestion in the road

2. More number of flyovers are constructed

3. Pedestrian facilities improved

Evaluate the process at specific time intervals to make sure that everything is going according to the plan and no corruptions or mistakes are being made in between

Build special pathways exclusively for pedestrians and cyclists

Post construction, assign a special team for quality assurance

3 E'S

- EFFICIENCY: The model is efficient as BBMP is a strong corporation that have enough budget to carry out any transformation process

- EFFICACY: The model is efficacious as the early planning in the transformation process of conducting surveys to assess the road condition and the final quality assurance tests for the roads are done with the objective of ensuring the efficacy of the model
- EFFECTIVENESS: The model is effective as the tender for construction is given to that company that adopts the most modern methodology to do the construction process which will assure the long-term effectiveness of the outcome. Companies that adopt modern road construction methodology like rapid road project in Bangalore
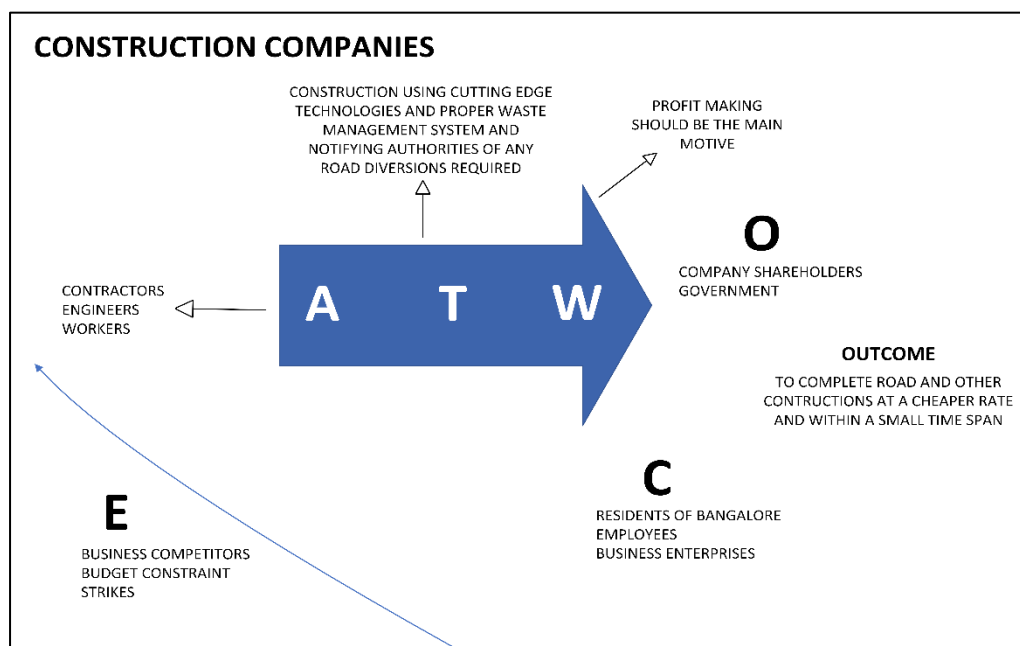
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2. Construction companies

Reason for selection

Construction companies are one of the major stakeholders because they play a key role in the whole transformation process. They get tender from BBMP for road construction and expansion. The quality and life span of roads will mainly depend on how well the construction companies do their job. The one reason why Bangalore roads are in such a bad condition is because of its inability to sustain in harsh conditions. Roads constructed with second quality raw materials and primitive technology results in its early damage.

PQR STATEMENT

A system to complete the works in a short time span with maximum efficiency using modern technology and proper planning in order to gain maximum profit and name for the company.
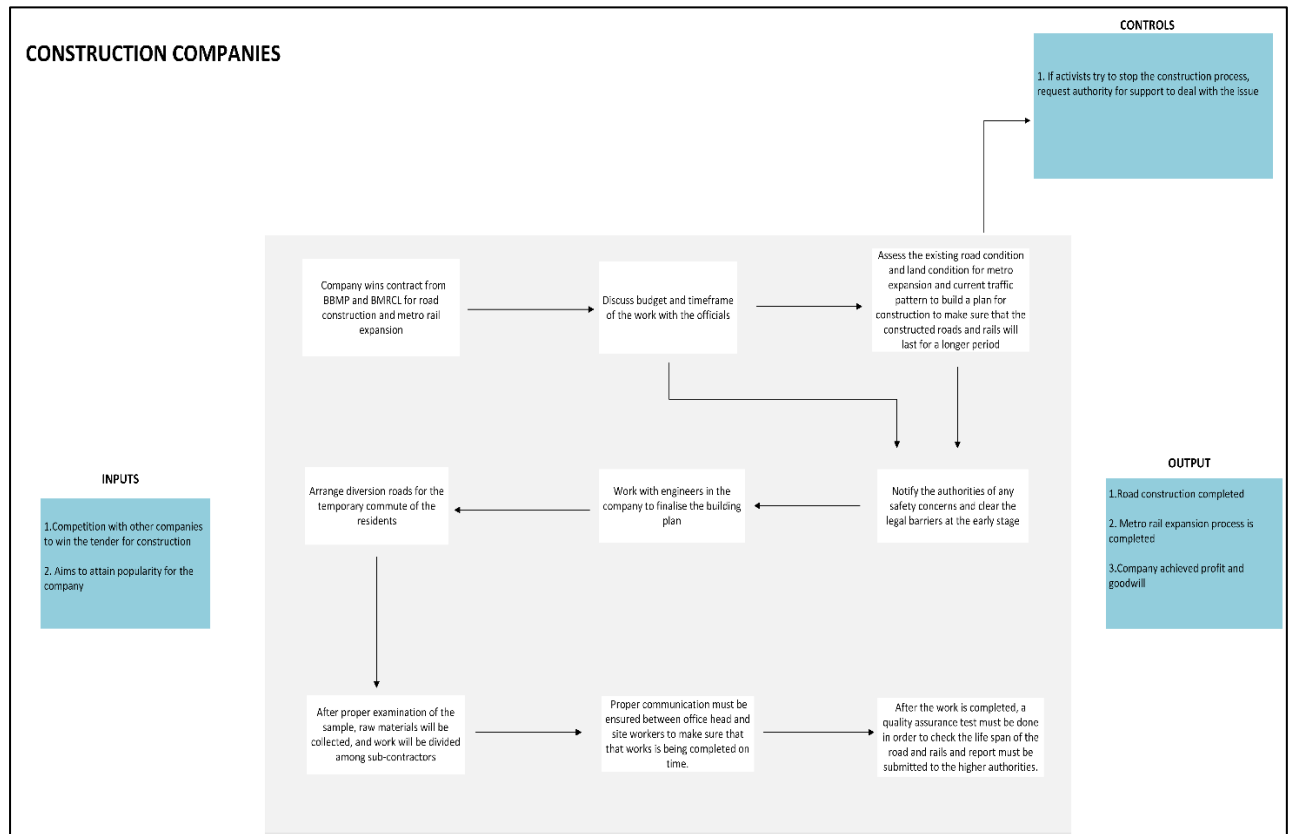
CATWOE

CONSTRUCTION COMPANIES

CONSTRUCTION USING CUTTING EDGE TECHNOLOGIES AND PROPER WASTE MANAGEMENT SYSTEM AND NOTIFYING AUTHORITIES OF ANY ROAD DIVERSIONS REQUIRED

PROFIT MAKING SHOULD BE THE MAIN MOTIVE

A   T   W

O
COMPANY SHAREHOLDERS
GOVERNMENT

CONTRACTORS
ENGINEERS
WORKERS

OUTCOME
TO COMPLETE ROAD AND OTHER CONTRUCTIONS AT A CHEAPER RATE AND WITHIN A SMALL TIME SPAN

C
RESIDENTS OF BANGALORE
EMPLOYEES
BUSINESS ENTERPRISES

E
BUSINESS COMPETITORS
BUDGET CONSTRAINT
STRIKES

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ROOT DEFINITION

A firm that aims at gaining maximum profit and name for itself by completing their work with maximum efficiency using high quality raw materials and technology in order to overcome competition in the market and expand their horizon.

CONCEPTUAL MODEL

CONSTRUCTION COMPANIES

CONTROLS
1. If activists try to stop the construction process, request authority for support to deal with the issue

Company wins contract from BBMP and BMRCL for road construction and metro rail expansion

Discuss budget and timeframe of the work with the officials

Assess the existing road condition and land condition for metro expansion and current traffic pattern to build a plan for construction to make sure that the constructed roads and rails will last for a longer period

INPUTS
1. Competition with other companies to win the tender for construction
2. Aims to attain popularity for the company

Arrange diversion roads for the temporary commute of the residents

Work with engineers in the company to finalise the building plan

Notify the authorities of any safety concerns and clear the legal barriers at the early stage

OUTPUT
1. Road construction completed
2. Metro rail expansion process is completed
3. Company achieved profit and goodwill

After proper examination of the sample, raw materials will be collected, and work will be divided among sub-contractors

Proper communication must be ensured between office head and site workers to make sure that that works is being completed on time.

After the work is completed, a quality assurance test must be done in order to check the life span of the road and rails and report must be submitted to the higher authorities.

3 E'S

- EFFICIENCY: This model is efficient as the company will always try to find a way to maximise profit and provide maximum output. As they try to maximise their profit by estimating cost before starting the process, they will always work within the allocated resources and never cross the budget.
- EFFICACY: This model seems to be efficacious as the company is going to use the most modern technology for their construction process and as the raw material's quality is pre assured, there is very low chance of it getting damaged.
- EFFECTIVENESS: The model is effective because one of its major goals is for the infrastructures to last for a longer time by using materials like geogrid.

EXTENDED ANALYSIS
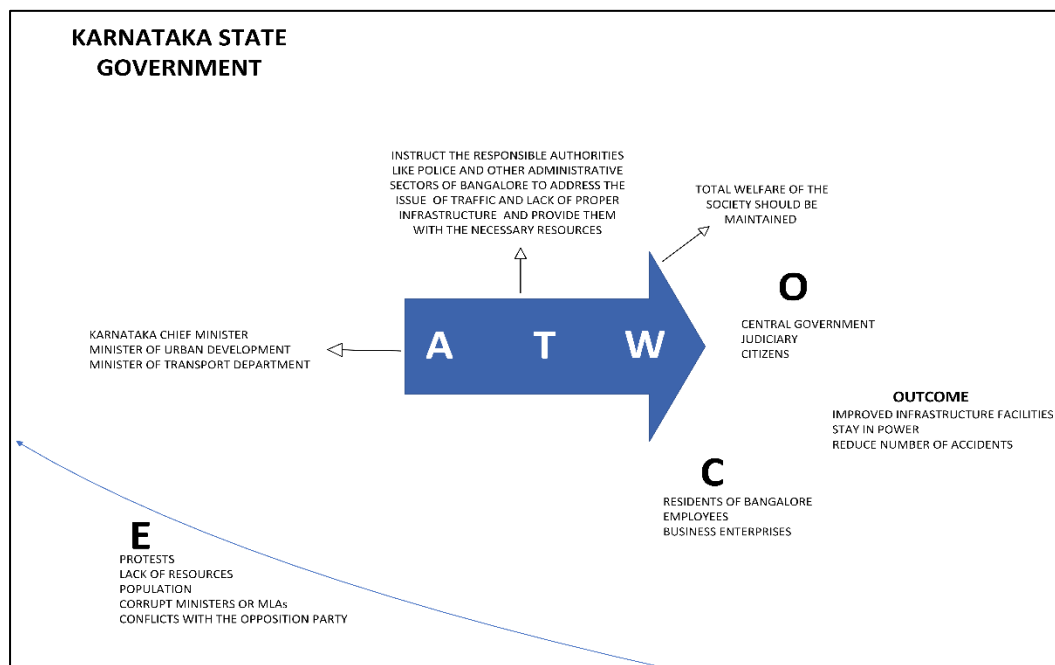
3. **Karnataka state government**

    Reason for selection

    Karnataka government has a key role in resolving the issue of traffic in Bangalore as Bangalore is the most important city in Karnataka and one of the biggest cities in India. Bangalore's economy contributes to around 44% of Karnataka's total economy and because of this reason, it is very important for the government to consider issues in Bangalore to be of prime importance. A disturbance in proper functioning of Bangalore can have a big impact on the entire state.

PQR STATEMENT

A System with a proper traffic management system by guiding the responsible authorities and providing them with required resources in order to provide a better security for the lives and assets of the state.

CATWOE

KARNATAKA STATE GOVERNMENT

INSTRUCT THE RESPONSIBLE AUTHORITIES LIKE POLICE AND OTHER ADMINISTRATIVE SECTORS OF BANGALORE TO ADDRESS THE ISSUE OF TRAFFIC AND LACK OF PROPER INFRASTRUCTURE AND PROVIDE THEM WITH THE NECESSARY RESOURCES

TOTAL WELFARE OF THE SOCIETY SHOULD BE MAINTAINED

O
CENTRAL GOVERNMENT
JUDICIARY
CITIZENS

KARNATAKA CHIEF MINISTER
MINISTER OF URBAN DEVELOPMENT
MINISTER OF TRANSPORT DEPARTMENT

A   T   W

OUTCOME
IMPROVED INFRASTRUCTURE FACILITIES
STAY IN POWER
REDUCE NUMBER OF ACCIDENTS

C
RESIDENTS OF BANGALORE
EMPLOYEES
BUSINESS ENTERPRISES

E
PROTESTS
LACK OF RESOURCES
POPULATION
CORRUPT MINISTERS OR MLAs
CONFLICTS WITH THE OPPOSITION PARTY

ROOT DEFINITION

An efficient traffic management system implemented by directing the responsible authorities and equipping them with the necessary resources taking into consideration factors such as the density and resource limitation of Bangalore city, pressure from the opposition and public protests in order to achieve orderly development of the city.

CONCEPTUAL MODEL

KARNATAKA STATE GOERNMENT

CONTROLS
1. Request central government for financial support if there is any requirement
2. if there are any corrupt ministers or officials involved in the process, take necessary measures to identify them and take them of the process

INPUTS
1. A traffic syastem that is completely out of control
2. Residents life at risk due to irresposible drivers and poor infrastructure facility

Conducts meetings to discuss the issue at hand

Look for the possibility of developing other parts of the karnataka state which can reduce the migration of people in to bangalore

Provide the responsible authorities (BBMP and BMRCL) with enough resources like money to carry out the transformation process

Chief minister instructs the urban development and transport minister to work together to build action plan

Work with BMRCL to speed up the expansion of metro services to high density areas.

Instruct the Police department to tighten the traffic regulations and impose heavy fine on the residents who are breaking traffic rules.

Have negotiation meetings between BBMP and BMRCL regarding the land allocation for metro expansion and road expansion

Bring restriction for heavy vehicles during the daytime

Give appropriate guidance and information to residents regarding the ongoing construction works and encourage them to use public transport as much as possible.

OUTPUT
1. Develop an effective traffic management system.
2. Safety and security for the city's residents.
3. Overall development of the city.

3E'S

- EFFICIENCY: The model's efficacy is assured as the government will always have sufficient resources and budget to carry out the transformation process
- EFFICACY: The model can be efficient only if the government can succeed in dealing with the pressure from opposition party, residents and guide the respective officials in the right way
- EFFECTIVENESS: The model is highly effective as the transformation process has the potential to meet all its desired outputs

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4. Environmental NGOs

Reason for selection

Environmental NGOs do not have a direct involvement in the transformation process, but their intervention can have an impact the process. They will intervene in the transformation process if it negatively impacts the environment. NGOs already have concerns about how vehicles cause pollution to the environment and are in conflict with the government regarding the same. Road expansion done by cutting trees will be opposed by these NGOs and they will strongly protest against the expansion process which will disrupt the transformation.

PQR STATEMENT

A system that ensures sustainable use of natural resources by conducting awareness among people and government in order to prevent the depletion of natural resources.

CATWOE

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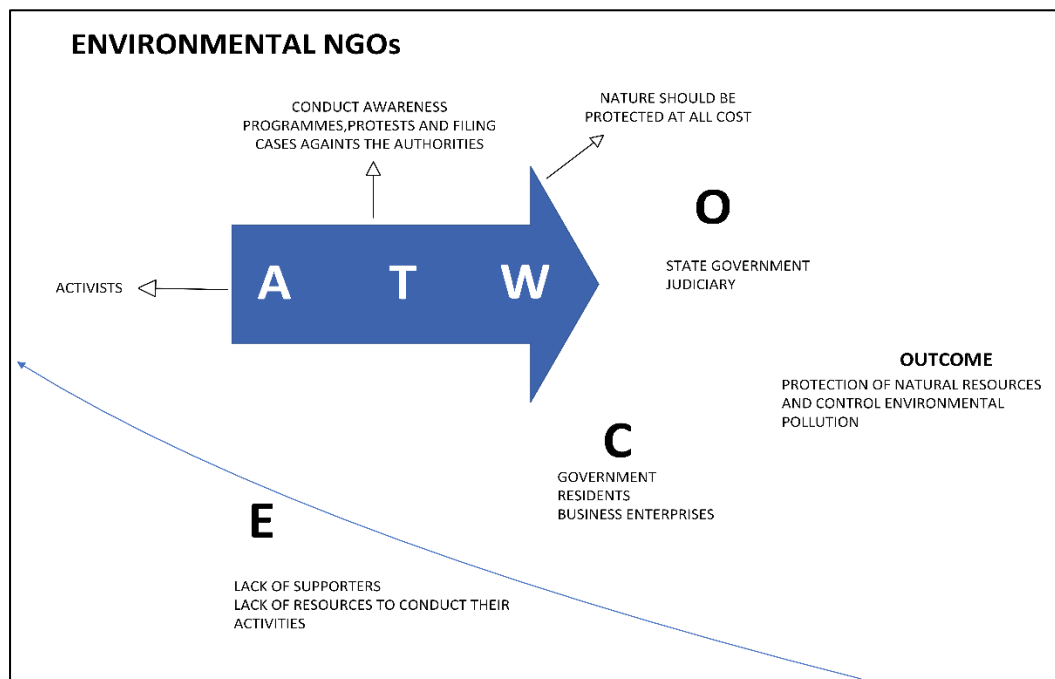
ROOT DEFINITION

An organisation that aims at preserving the city's natural resources at all costs by conducting awareness programmes to gain public support and challenges the authority if any kind of development disturbs nature.

CONCEPTUAL MODEL

3E'S
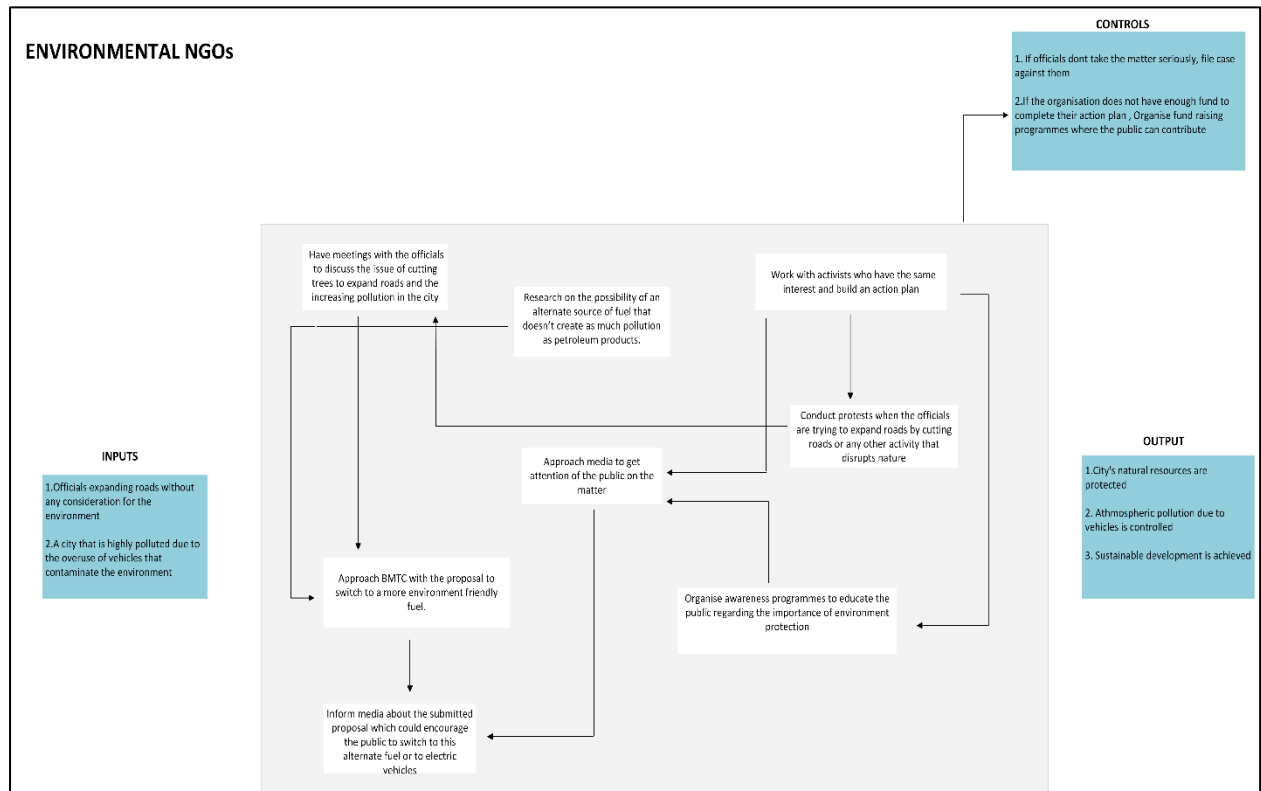
- EFFICIENCY: The model is only moderately efficient as it is an NGO and will always have a limitation in their budget and resources.
- EFFICACY: The model's efficacy cannot be guaranteed as the NGOs efficacy will always depend on their ability to raise funds to carry out the transformation process.
- EFFECTIVENESS: The model can be effective in long term if all the planned activities can be carried out

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PART 3 - COMPLIMENTARY ANALYSIS

<u>SWOT ANALYSIS – KARNATAKA STATE GOVERNMENT</u>

| STRENGTH	WEAKNESS
- Strong financial stability - Good infrastructure facilities - Skilled workforce - ITMS technology Asian News International (2022) *Karnataka Govt to use ITMS technology to manage Bengaluru traffic*, *The Siasat Daily*. Available at: https://www.siasat.com/karnataka-govt-to-use-itms-technology-to-manage-bengaluru-traffic-2475841/ Patel, T. (2018) *10 Karnataka budget schemes that are giving the state a reason to cheer*, *The Better India*. Available at: https://www.thebetterindia.com/132324/positive-karnataka-state-policies.	- Conflicts with municipal authorities - Corrupt transport department Ray, A. (2014) *Police most corrupt dept in state, says portal*, *Times of India*. Available at: https://timesofindia.indiatimes.com/city/bengaluru/Police-most-corrupt-dept-in-state-says-portal/articleshow/45289327.cms (Accessed: December 15, 2022). Chatterjee, S. (2021) *Why do Karnataka ministers want to divest BBMP from its essential functions? The News Minute*. Available at: https://www.thenewsminute.com/article/why-do-karnataka-ministers-want-divest-bbmp-its-essential-functions-154455 (Accessed: December 15, 2022).
OPPORTUNITY	THREAT
- Technological advancement - Levied road taxes - Metro expansion "Future expansion plans of Bangalore Metro phase 2" (2017) *Karnataka.com*, 10 October. Available at: https://www.karnataka.com/bangalore-metro/future-expansion-plans-bangalore-metro-phase-2/ (Accessed: December 15, 2022). Gowalla, R. (2016) *6 solutions to the city's traffic congestion*, *Times of India*. Available at: https://timesofindia.indiatimes.com/city/bengaluru/Solutions-to-Bengalurus-traffic-problems/articleshow/53413625.cms (Accessed: December 15, 2022).	- Corrupt officials especially in the police department - Rising population TNN (2003) *Corrupt officials bad for govt, not me*, *Times of India*. Available at: https://timesofindia.indiatimes.com/city/bengaluru/Corrupt-officials-bad-for-govt-not-me/articleshow/52729.cms (Accessed: December 15, 2022).

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PART 4 -RECCOMENDATIONS

BBMP

| IDEAL ACTIVITY	REAL WORLD	PROPOSED CHANGES
1. Survey to check existing road condition	Population density and over crowdedness makes it challenging to physically conduct the survey	1.There is no ideal solution for this issue, one option is to conduct the survey on days when there is less traffic. Conducting surveys on Saturdays might work as IT employees are on leave on Saturdays which result in low traffic.
2. Take an account of all the highly congested areas and see for a possibility of building a flyover in that area or a possibility to expand the existing roads in that area	This is already being done	No action required.
Find out areas where pedestrian facilities need to be improved	No actions taken as this is not taken seriously by the officials	2.Hire teams to conduct surveys.
Adopting modern technology to build roads and flyovers that have longer life span.	Officials look for a cost-efficient method for construction and it affects the quality of the infrastructure facilities	If budget remains a constraint, there is no potential solution to this.
Build special pathways for buses	This is already done, but other vehicles use this pathway.	3.Impose heavy fine on other vehicles that use this pathway
Give contracts to the construction companies that uses cutting edge technologies to efficiently carry on the process	Already being done.	No action required.
Evaluate the process at specific time intervals to assure that everything is going according to the plan and no corruptions or mistakes are being made in between.	Current evaluation procedures are not very effective as most officials are corrupt and lack productivity.	The basic human instinct to be influenced by money make it almost impossible to find a solution for this problem.
Build special pathways for pedestrians and cyclists	This is already done	No further actions required
Post construction, assign a special team for quality assurance	Quality assurance tests are already being conducted but not very precise.	4.Assign more than one team to assess the quality of the roads and compare the two reports to make sure that the reports are not fabricated.

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KARNATAKA STATE GOVERNMENT

IDEAL ACTIVITY	REAL WORLD	PROPOSED CHANGES
Check for Possible development of other parts of Karnataka.	Government's focus on other parts of Karnataka is very minimal as the state receives sufficient revenue from Bangalore itself.	1.Try to improve the semi developed cities like Mangalore and Mysore and expand gradually towards other parts.
Instruct the respected ministers to build an action plan	Already being done.	No further action required.
Supply enough resources to authorities to carry out the process	Already being supplied.	No further action required
Expansion of metro to high density areas	Expansion is going on but at a very slow pace.	2.Speed up the process by increasing the human resource
Negotiation meetings between BBMP and BMRCL regarding land issues	Conflicts between the two organisations are never ending.	Limited land resources make it difficult to find a solution for this conflict.
Instruct Police to tighten the traffic regulations and impose heavy fine on the residents who are breaking traffic rules.	Most officers in the system are corrupt and takes bribes rather than impose fine on the residents.	3.Take strict actions against corrupt officers
Bring restriction for heavy vehicles during the daytime	Restrictions are already applied.	No further action required
Give appropriate guidance and information to residents regarding the ongoing construction works and encourage them to use public transport as much as possible.	Residents are always notified of any ongoing construction works.	No further action required

EASE_BENIFIT MATRIX

BBMP
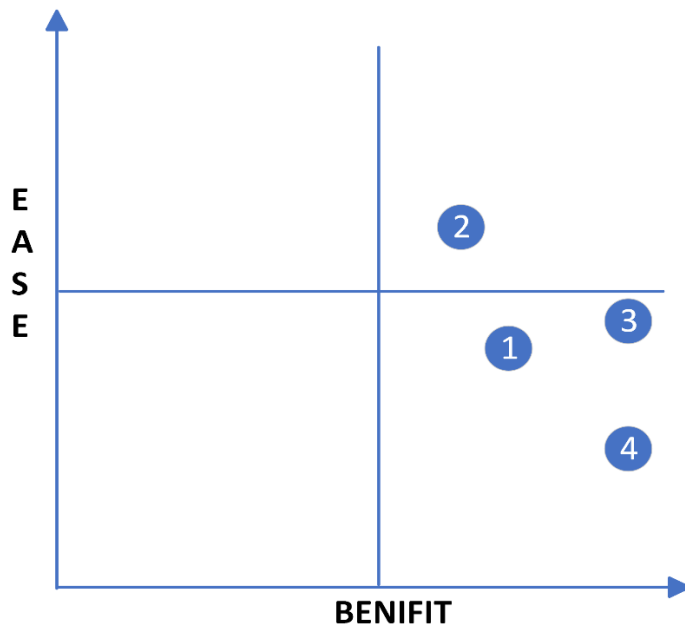
KARNATAKA STATE GOVERNMENT

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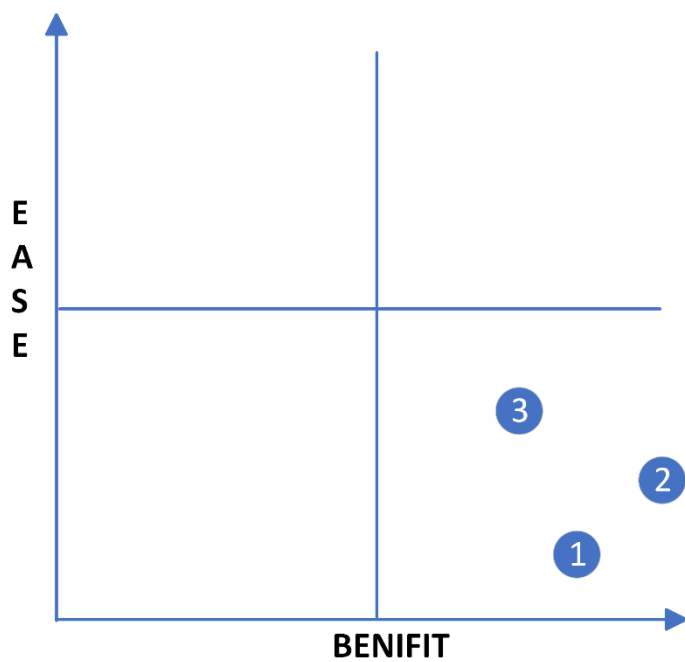
KEY RECCOMENDATIONS

After carefully analysing the entire situation, the possible things that can be done to improve the traffic condition in Bangalore are for the government to look for possible ways to develop other parts of the state that could reduce the flow of migrants into Bangalore and try to speed up the metro expansion process which is a possible solution. In terms of controlling the existing traffic condition on roads, assigning heavy fines on people who disrupts the traffic and focusing more on assuring the quality of existing and newly build roads could help.

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